

# **Centracs User Manual**

P/N 126-0903-001 Rev. 08

March 2018

Software Version 2.x



Published: March 16, 2018

Copyright © 2018 by Econolite Control Products, Inc. ALL RIGHTS RESERVED

Econolite provides this manual for its licensees and customers. No part of this manual may be reproduced, copied, or distributed in any form without the prior written approval of Econolite Control Products, Inc.

The content of this manual is subject to change without notice.

#### **Software License**

The Centracs<sup>®</sup> SOFTWARE and its documentation are protected by copyright laws and international copyright treaties, as well as other intellectual property laws and treaties. The SOFTWARE is licensed, not sold.

This Centracs Software License Agreement grants you the following rights:

- You may install and use the Centracs Core, Device Manager, Communications, and other Server components of the SOFTWARE on computers located on City/Agency premises communicating with the maximum number of field devices set by the license key included with the SOFTWARE.
- You may install and use the Centracs Client/Workstation SOFTWARE on any number of workstations located on the premises of City/Agency or agency partners/consultants. The Centracs Client/Workstation SOFTWARE may only be used with the City/Agency Centracs system. Use of the Centracs Client/Workstation SOFTWARE with other City/Agency Centracs systems is expressly prohibited.
- You may not reverse-engineer, decompile, or disassemble the SOFTWARE, except and only to the extent that such activity is expressly permitted by applicable law, notwithstanding this limitation.
- You may not sell, lease, license, sublicense, distribute, or otherwise transfer in whole or in part the SOFTWARE or any parts thereof to another party.

Without prejudice to any other rights, Econolite may terminate this Software License if you fail to comply with the terms and conditions of the License Agreement. In such event, you must destroy all copies of the SOFTWARE and all of its component parts.

#### Warranty

Econolite warrants that the media, if any, on which the SOFTWARE is delivered and documentation supplied is free from defects in material and workmanship under normal use and service and that the SOFTWARE will substantially conform to the description contained in the documentation for a period of one-year beginning upon completion of acceptance testing of the SOFTWARE. In the event of notification within the warranty period of defects in material or workmanship, or if the SOFTWARE does not substantially conform to the description contained in the documentation, Econolite, at its sole option, will repair or replace the defective media or documentation or correct the defects in the SOFTWARE. The foregoing is the only warranty of any kind expressed or implied. There are no implied warranties of merchantability and fitness for a particular purpose. In no event shall Econolite, or its suppliers be liable for any damages whatsoever (including, without limitation, damages for loss of property, injury, life, business profits, business interruption, loss of information, or other pecuniary loss) arising out of the use of or inability to use this SOFTWARE.

Econolite agrees to provide City/Agency with one year of technical support via phone or email for the SOFTWARE beginning upon completion of acceptance testing of the SOFTWARE. This technical support will cover all SOFTWARE components provided by Econolite. SOFTWARE components provided by others, (including any and all area maps and intersection graphics) will not be included in this technical support.

#### **Copyright Notices**

Under the copyright laws of the United States of America, the Centracs SOFTWARE and this user manual MAY NOT be copied, photocopied, reproduced, translated, or reduced to any electronic medium or machine-readable form, in whole or part, without prior written permission from Econolite. The SOFTWARE is developed and marketed by Econolite in part under a license of certain copyrighted works of others as to certain elements and in part as the copyrighted work of Econolite. Econolite also has or may have patents, patent applications, and owns all associated trademarks, copyrights, or other intellectual property rights covering subject matter in this document. Except as expressly provided in a written license agreement from Econolite, the furnishing of this notice does not give any entity or

individual (the user) any license to the patents, trademarks, copyrights, or other intellectual property. The United States Code, Title 17, protects the Software and this Document (the Copyright Act). ANY SUCH ACTIVITY OR PRODUCT BECOMES THE ABSOLUTE PROPERTY OF THE COPYRIGHT HOLDER.

#### **Restricted Rights Legend**

Any SOFTWARE which is provided for or on behalf of the United States of America or for or on behalf of Licensee, their agencies and/or instrumentalities ("U.S. Government") is provided with Restricted Rights. Use, duplication, or disclosure by the U.S. Government is subject to restrictions as set forth in Federal Acquisition Regulations subparagraph (c)(1)(ii) of the Rights in Technical Data and Computer SOFTWARE clause at DFARS 252.227-7013 or subparagraphs (c)(1) and (2) of the Commercial Computer SOFTWARE - Restricted Rights at 48 CFR 52.227-19, as applicable. The manufacturer is Econolite, 3360 E. La Palma Ave, Anaheim, CA 92806, (714) 630-3700. ANY RIGHTS NOT EXPRESSLY GRANTED HEREIN ARE RESERVED.

#### Trademarks

The Econolite logo is a registered trademark of Econolite Control Products, Inc. in the United Stated and/or in other countries. All other trademarks are the property of their respective owners.

Oasis, ASC/3, ASC/2, Cobalt, Eos, Centracs, and Centracs Local Edition are products with trademarks or registered trademarks owned by Econolite Control Products, Inc.

Autoscope is a registered trademark of Image Sensing Systems, Inc. (ISS).

"Microsoft", "Windows", "Bing", "Microsoft Windows", "Windows Server", and "Microsoft SQL Server" are either registered trademarks or trademarks of Microsoft Corporation in the United States and/or other countries. The Bing Maps service is offered under the Microsoft Service Agreement.

"Genetec" and "Omnicast" are trademarks of Genetec Inc., either registered or pending registration in several jurisdictions.

W4IKS is a product of Wapiti Microsystems Inc.

Synchro is a registered trademark of Trafficware, Ltd.

"VLC" and "VLC Media Player" are registered trademarks of VideoLAN.

## **NAVTEQ Map Data End-User License Terms**

The NAVTEQ map data ("Data") supplied with Centracs is provided for your internal use only and not for resale. It is protected by copyright, and is subject to the following terms and conditions which are agreed to by you, on the one hand, and Econolite and its licensors (including their licensors and suppliers) on the other hand.

© 3/16/18 NAVTEQ - All rights reserved.

The Data for areas of Canada includes information taken with permission from Canadian authorities, including: <sup>©</sup> Her Majesty the Queen in Right of Canada, <sup>©</sup> Queen's Printer for Ontario, <sup>©</sup> Canada Post Corporation, GeoBase.

NAVTEQ holds a non-exclusive license from the United States Postal Service<sup>®</sup> to publish and sell  $ZIP+4^{\$}$  information.

<sup>©</sup> United States Postal Service<sup>®</sup> 3/16/18. Prices are not established, controlled or approved by the United States Postal Service<sup>®</sup>. The following trademarks and registrations are owned by the USPS: United States Postal Service, USPS, and ZIP+4.

#### **Terms and Conditions**

<u>Personal Use Only</u>. You agree to use this Data together with Centracs solely for the purposes for which you were licensed, and not for service bureau, time-sharing, or other similar purposes. Accordingly, but subject to the restrictions set forth in the following paragraphs, you may copy this Data only as necessary for your personal use to (i) view it, and (ii) save it, provided that you do not remove any copyright notices that appear and do not modify the Data in any way. You agree not to otherwise reproduce, copy, modify, decompile, disassemble, or reverse-engineer any portion of this Data, and may not transfer or distribute it in any form, for any purpose, except to the extent permitted by mandatory laws. This Data is provide as part of the Centracs license terms and conditions and may not be transferred or resold without express written permission from Econolite.

<u>Restrictions</u>. Except where you have been specifically licensed to do so by Econolite, and without limiting the preceding paragraph, you may not (a) use this Data with any products, systems, or applications installed or otherwise connected to or in communication with vehicles, capable of vehicle navigation, positioning, dispatch, real-time route guidance, fleet management or similar applications; or (b) with or in communication with any positioning devices or any mobile or wireless-connected electronic or computer devices, including without limitation cellular phones, palmtop and handheld computers, pagers, and personal digital assistants (PDAs).

<u>Warning</u>. The Data may contain inaccurate or incomplete information due to the passage of time, changing circumstances, sources used and the nature of collecting comprehensive geographic data, any of which may lead to incorrect results.

<u>No Warranty</u>. This Data is provided to you "as is", and you agree to use it at your own risk. Econolite and its licensors (and their licensors and suppliers) make no guarantees, representations, or warranties of any kind, express or implied, arising by law or otherwise, including but not limited to, content, quality, accuracy, completeness, effectiveness, reliability, fitness for a particular purpose, usefulness, use or results to be obtained from this Data, or that the Data or server will be uninterrupted or error-free.

<u>Disclaimer of Warranty</u>. ECONOLITE AND ITS LICENSORS (INCLUDING THEIR LICENSORS AND SUPPLIERS) DISCLAIM ANY WARRANTIES, EXPRESS OR IMPLIED, OF QUALITY, PERFORMANCE, MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR NON-INFRINGEMENT. Some States, Territories, and Countries do not allow certain warranty exclusions, so to that extent the above exclusion may not apply to you.

Disclaimer of Liability. ECONOLITE AND ITS LICENSORS (INCLUDING THEIR LICENSORS AND SUPPLIERS) SHALL NOT BE LIABLE TO YOU: IN RESPECT OF ANY CLAIM, DEMAND, OR ACTION, IRRESPECTIVE OF THE NATURE OF THE CAUSE OF THE CLAIM, DEMAND, OR ACTION ALLEGING ANY LOSS, INJURY, OR DAMAGES, DIRECT OR INDIRECT, WHICH MAY RESULT FROM THE USE OR POSSESSION OF THE INFORMATION; OR FOR ANY LOSS OF PROFIT, REVENUE, CONTRACTS OR SAVINGS, OR ANY OTHER DIRECT, INDIRECT, INCIDENTAL, SPECIAL, OR CONSEQUENTIAL DAMAGES ARISING OUT OF YOUR USE OF OR INABILITY TO USE THIS INFORMATION, ANY DEFECT IN THE INFORMATION, OR THE BREACH OF THESE TERMS OR CONDITIONS, WHETHER IN AN ACTION IN CONTRACT OR TORT OR BASED ON A WARRANTY, EVEN IF [CLIENT] OR ITS LICENSORS HAVE BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES. Some States, Territories, and Countries do not allow certain liability exclusions or damages limitations, so to that extent the above may not apply to you.

<u>Export Control.</u> You agree not to export from anywhere any part of the Data provided to you or any direct product thereof except in compliance with, and with all licenses and approvals required under, applicable export laws, rules, and regulations.

<u>Entire Agreement.</u> These terms and conditions constitute the entire agreement between Econolite (and its licensors, including their licensors and suppliers) and you pertaining to the subject matter hereof, and supersedes in their entirety any and all written or oral agreements previously existing between us with respect to such subject matter.

<u>Governing Law</u>. The above terms and conditions shall be governed by the laws of the State of Illinois, without giving effect to (i) its conflict of laws provisions, or (ii) the United Nations Convention for Contracts for the International Sale of Goods, which is explicitly excluded. You agree to submit to the jurisdiction of the State of Illinois for any and all disputes, claims, and actions arising from or in connection with the Data provided to you hereunder.

<u>Government End Users</u>. If the Data is being acquired by or on behalf of the United States government or any other entity seeking or applying rights similar to those customarily claimed by the United States government, the Data is a "commercial item" as that term is defined at 48 C.F.R. ("FAR") 2.101, is licensed in accordance with these End-User Terms, and each copy of Data delivered or otherwise furnished shall be marked and embedded as appropriate with the following "Notice of Use", and shall be treated in accordance with such Notice:

#### NOTICE OF USE

#### Contractor (Manufacturer/Supplier) Name: NAVTEQ

**Contractor (Manufacturer/Supplier) Address:** 425 West Randolph Street, Chicago, Illinois 60606

This Data is a commercial item as defined in FAR 2.101 and is subject to the End-User Terms under which this Data was provided.

© 3/16/18 NAVTEQ - All rights reserved.

If the Contracting Officer, federal government agency, or any federal official refuses to use the legend provided herein, the Contracting Officer, federal government agency, or any federal official must notify NAVTEQ prior to seeking additional or alternative rights in the Data.

# **Table of Contents**

# Overview of Centracs

Introduction 1
Modular Architecture
Container Technology
System Flexibility and Configurability4
Field Devices
Device Manager
Maps
Events, Alerts, and Actions7
Closed-circuit TV (CCTV)
Remote Controller Configuration
Security
Reports
Outline of Madulas
Optional Modules
Advanced Closed-Circuit Television (CCTV) Module
Dynamic Message Signs (DMS) 10
Centracs Adaptive 11
Measures of Effectiveness (MOEs) 11
Travel Time Links 12
Data Collection Management System (DCMS) 13
Local Edition 15
Maintenance Management System (MMS) 17
Center-to-Center Interface Module 18
Server-to-Server Interface Module 19
Synchro <sup>™</sup> UTDF Interface Module
General System Architecture
Local and Wide Area Network
Communications
Device Managers
Core Applications
Traffic Signal Management and Control 23
Traffic Signal Monitor 23
Traffic Signal Control Modes 24
Group, Section, and System Control 25

• Customizing the User Interface

System Time Reference Synchronization 25	5
Main User Interface26Menus26Containers30Status Bar31Centracs UserVoice:33	5 ) L
Glossary of Terms	ŀ
Logging In	7
Logging Out 39	)
Changing Your Password 39	)
Using the Online Help 40	)
Technical Support 40	)
Give Feedback 40	)
Overview of Containers 1	L
Selecting a Container Layout 2	2
Moving Windows Into and Out of Containers	5
Using Tabbed Containers 10	)
Using Hidden Containers 11	L
Renaming Windows 13	}
Using Multiple Monitors13	3
Adding Shortcuts to the Tools Menu	ŀ
Changing the Color Theme 18	3
Adding Your Own Color Theme 18	3
Using Preference Sets 19	)
Sorting and Rearranging Table Data 25	5
Turning Confirmation Dialogs On/Off    26	5
Viewing Active Windows 28	3
Entity Types 2	2

# Customizing the User Interface

Tree

**Using the Entity** 

Configuring Events, Alerts, and Triggers

Entity Collections Shortcut Entities MMS Entities Entity Relationships	3 4
Adding Entities via the Entity Tree	. 8
Copying an Entity to Multiple Groups	. 9
Editing Entity Properties	. 9
Searching the Entity Tree	
Customizing the Entity Tree View	11
Printing the Entity Tree	14
Adding Notes to Entities	14
Bookmarking Your Favorite Entities	16
Using the Entity Selection Window	18
Using the Entity Selection Window	
	20
Selecting and Moving Entities within the Window	20 <b>21</b>
Selecting and Moving Entities within the Window         Entity Configuration         Entity Configuration - Systems         Entity Configuration - Sections and Subsections	20 <b>21</b> 21 22
Selecting and Moving Entities within the Window         Entity Configuration         Entity Configuration - Systems         Entity Configuration - Sections and Subsections         Entity Configuration - Groups	20 <b>21</b> 21 22 23
Selecting and Moving Entities within the Window         Entity Configuration         Entity Configuration - Systems         Entity Configuration - Sections and Subsections         Entity Configuration - Groups         Signal Collection Coordination Monitoring	20 <b>21</b> 22 23 24
Selecting and Moving Entities within the Window         Entity Configuration         Entity Configuration - Systems         Entity Configuration - Sections and Subsections         Entity Configuration - Sections and Subsections         Entity Configuration - Groups         Signal Collection Coordination Monitoring         Entity Configuration - DMS	20 <b>21</b> 22 23 24 27
Selecting and Moving Entities within the Window         Entity Configuration         Entity Configuration - Systems         Entity Configuration - Sections and Subsections         Entity Configuration - Groups         Signal Collection Coordination Monitoring         Entity Configuration - DMS         Entity Configuration - Signals	20 <b>21</b> 22 23 24 27 36
Selecting and Moving Entities within the WindowEntity ConfigurationEntity Configuration - SystemsEntity Configuration - Sections and SubsectionsEntity Configuration - GroupsSignal Collection Coordination MonitoringEntity Configuration - DMSEntity Configuration - SignalsDevice Communication Configuration	20 21 22 23 24 27 36 44
Selecting and Moving Entities within the WindowEntity ConfigurationEntity Configuration - SystemsEntity Configuration - Sections and SubsectionsEntity Configuration - GroupsSignal Collection Coordination MonitoringEntity Configuration - DMSEntity Configuration - SignalsEntity Configuration - SignalsEntity Configuration - SignalsEntity Configuration - SignalsEntity Configuration - Vehicle Detectors	20 21 22 23 24 27 36 44 48
Selecting and Moving Entities within the WindowEntity ConfigurationEntity Configuration - SystemsEntity Configuration - Sections and SubsectionsEntity Configuration - GroupsSignal Collection Coordination MonitoringEntity Configuration - DMSEntity Configuration - SignalsDevice Communication ConfigurationEntity Configuration - Vehicle DetectorsEntity Configuration - Links	20 21 22 23 24 27 36 44 48 54
Selecting and Moving Entities within the WindowEntity ConfigurationEntity Configuration - SystemsEntity Configuration - Sections and SubsectionsEntity Configuration - GroupsSignal Collection Coordination MonitoringEntity Configuration - DMSEntity Configuration - SignalsEntity Configuration - SignalsEntity Configuration - Vehicle DetectorsEntity Configuration - LinksEntity Configuration - CCTVs	20 21 22 23 24 27 36 44 48 54 65
Selecting and Moving Entities within the WindowEntity ConfigurationEntity Configuration - SystemsEntity Configuration - Sections and SubsectionsEntity Configuration - GroupsSignal Collection Coordination MonitoringEntity Configuration - DMSEntity Configuration - SignalsDevice Communication ConfigurationEntity Configuration - Vehicle DetectorsEntity Configuration - URLs	20 21 22 23 24 27 36 44 48 54 65 69
Selecting and Moving Entities within the WindowEntity ConfigurationEntity Configuration - SystemsEntity Configuration - Sections and SubsectionsEntity Configuration - GroupsSignal Collection Coordination MonitoringEntity Configuration - DMSEntity Configuration - SignalsEntity Configuration - SignalsEntity Configuration - Vehicle DetectorsEntity Configuration - LinksEntity Configuration - CCTVs	20 21 22 23 24 27 36 44 48 54 65 69 70

## Configuring Events, Alerts, and Triggers

Events	2
Changing Event Settings	.2
Event Types	.4
Alerts	20
Pop-up Alerts	20
Offline Alerts	
Alert Status Bar	21

Using Maps

	Using the Alert List	22
	Using Triggers	25
	Acknowledging and Closing Alerts	32
	Escalating Alerts and Tickets	
	Selecting Recipients	43
	Viewing/Printing the Alerts Log	45
Using Maps	Overview	1
	Viewing and Navigating the Map	3
	Setting the Default Map Display	5
	Using Preset Maps	6
	Edit Preset Maps Option	7
	Viewing Entities and Elements on the Map Signal Status DMS Status Autoscope/RTMS Status (DCMS) MMS Ticket Status BlueTOAD Link Status Zooming to Specific Entities Viewing Status Details Issuing Commands	
	Editing the Map ViewOverview of Map LayersAvailable Map IconsToolbar OptionsAdding Icons to the MapCopying Map Icons from Another EntityAdding Images to the Map	19 26 30 31 35
	Editing the Map View for a Link (LOS)	38
	Deleting an Entity from the Map Viewer	41
Monitoring Devices	Signals	1 10

Schedule Entries.	Manual Commands,	and Action Sets	•
Concura Entries,	manual communus,		

	Testing Comms between Centracs and a Controller16Synchronizing the Time17Using the Device Collection Monitor19Viewing the Device Status Window23Using Split Monitor26Using the Time Space Analysis33
	Detectors42Real-Time Detector Status42Real-Time Link Status45Monitoring Detector Faults48
	Dynamic Message Signs (DMS)50Using the DMS Status Display50Viewing the Device Status Window50
	DCMS
	MMS 50
	Communication Statistics51Viewing Overall Comm Statistics51Viewing Comms on the Status Display53Viewing the Comm Statistics Graph56
tries,	Overview of Scheduling and Manual Commands
and	Manual Commands
	Issuing Manual Commands 8
	Using the Scheduler 11
	Specifying Holidays and Special Days
	Running Action Sets 21
	User Selection / Recipient and Role Selection
	Overview of CCTV       1         CCTV Setup       .2         Automatically Launched Presets       .2

Showing a Live Camera Feed	 	 3
From the Entity Tree	 	 3
From the Map Viewer	 	 3

Schedule Entries, Manual Commands, and Action Sets

Using CCTV Displays Using Dynamic Message Signs (DMS)

	Moving a Camera View4
	Defining and Maintaining Presets
	Viewing Camera Presets 10
	CCTV Preset Selection 12
	Using CCTV Tours
Using Dynamic	Overview of Dynamic Message Signs (DMS) 1
Message Signs	Configuring DMS Entities 4
(DMS)	Configuring DMS Messages 4
	Using the DMS Status Display7
	Message
	Activating a DMS Message from the Library
	Activating the Blank Message 12
	Creating a Quick Message 13
	Using the DMS Message Editor
Generating	Overview
Reports	Centracs Enterprise Reports
	Centracs DCMS Reports
	Centracs MMS Reports
	Using the Toolbar
	Saving Your Report Parameters
	Changing or Deleting a Configurable Report
	Scheduling a Report to Run
	Stretching a Dropdown List
	Sorting Report Data15Saving a Report to a File16
	Filtering by Date
	Hiding the Parameters
	Alerts Log

Using the MOE Reports

Comm Statistics Report 20
Detector Fault Status Report 22
Device Configuration Report 23
Entity Hierarchy Report 24
Entity Notes Report 25
Hourly Comm Statistics 26
Level of Service Links Report 28
Raw Detector Data Report 31
Signal Changes Report 33
Signal Detector Events Report 34
Signal Events Report
Signal MMU Events Report 38
Signal Upload and Compare Report
Split Monitor Report 46
System Activity Report 50
System Events Report 51
Time Drift Report 53
Traffic Responsive Report 55
Travel Time Links Report 56
User Login Report
Users and Recipients Report 61
VOS Daily Report
VOS Hourly Report
VOS Multi-Date Hourly Report 69
VOS Multi-Date Daily Report 74
Speed Calculations in Reports
Settings 2
Arrival On Green Report

Using the MOE

Reports

Using Server-to-Server

	Cycle Length Report8
	Flow Rate Report
	Green Times Report 12
	PCD Report 14
	Percentage Pedestrian Calls Report
	Split Failures Report 19
	Volume-to-Capacity Report 21
Using Server-to-	Configuring Server-to-Server (S2S)1
Server	Using Server-to-Server (S2S)7
	Viewing S2S Systems Status9
Using Traffic Responsive	Introduction to Traffic Responsive (TR)1Detector Data3Channels4
	Creating a Traffic Algorithm 5
	Configuring Channels, Thresholds, and Patterns
	Running a Traffic Algorithm14
	Monitoring Real-time TR Calculations
	Monitoring Historical TR Calculations
Using the Travel Time Module for Vehicle Detection	BlueTOAD Detection of Speed and Travel Time1Overview of Travel Time2Configuring BlueTOAD Entities9Changing Properties for a DCS12Status Display for BlueTOAD Data Collection Stations13Status Display for BlueTOAD Link Pairs13Status Display for BlueTOAD Routes17
Changing the Controller Settings	Maintaining Controller Settings Remotely       1         Overview of the Signal Editor       2         Overview of the Remote Front Panel (ASC/3, Cobalt)       6
	Controller Editor Main Menu 8

			<i></i> .		
Exchanging	Data	with	'Local	Edition'	

Adding and Changing Controller Settings Using the Editor	9
Using the Controller Editor Workspace1Custom Printouts of the Controller Settings2	
Using the UTDF Interface Module 2	4
Overview of the Export Process2Overview of the Import Process2	
NTCIP Controllers 2	5
ACT Controllers	

Merging Entity Data ..... 1

# Exchanging Data with 'Local Edition'

# Using DCMS for Data Collection

Database Selection window 12
Overview of DCMS
Global Autoscope Settings
Configuring RTMS Entities
Configuring & Deleting Autoscope Entities14Changing the Properties for Autoscope Entities23Using the Detector Configuration Window (Autoscope)24
Monitoring Devices22Viewing Detector Log Status24Using the Autoscope Status Display25Using the RTMS Status Display35Viewing the Device Status Window35
Using the Detector Group Chart33Detector Group Chart - Field Descriptions34Detector Group Chart - Sample Chart36Detector Group Chart - Sample Comparison Graph37Detector Group Chart - Sample Worksheet38
Maintaining Detector Groups 39
Data Collection Reports42Common Report Parameters42All Detector Data43Arithmetic Mean Speed44Average 85th Percentile Speed (G4/SX-300 RTMS)44

Using Centracs Adaptive

Using Centracs Adaptive

Average Vehicle Gap (G4/SX-300 RTMS)Average Vehicle HeadwayAverage Vehicle OccupancyAverage Vehicle Counts Classification	50 52 54
Average Vehicle Volume Classification (G4/SX-300 RTMS)         Average Vehicle Volume         Comparison Report         Peak Hour Volume Report	56 59 62
Station ReportTotal Vehicle Counts ClassificationTotal Vehicle Volume Classification (G4/SX-300 RTMS)Total Vehicle VolumeTotal Vehicle Volume	70 72
Introduction	. 1
Controller Configuration Requirements for Using AdaptiveTips for Configuring Your DetectorsMonitoring Adaptive-Related EventsRunning Adaptive with Traffic Responsive and BlueTOAD	.3 .4
Configuring an Adaptive Algorithm	. 5
Configuring Adaptive Controller Settings	. 8
Configuration tab Unit Coord Parameters tab Patterns tab Splits tab Phase tab Phase Compatibility tab Ring Sequence tab Detectors tab Adaptive Runtime Refiner Adaptive Links	11 13 14 15 16 17 18 22 24
Adaptive Link Detail	
Running an Adaptive Algorithm	
Monitoring Adaptive StatusSystem Manager StatusController Manager StatusRuntime Refiner Status	30 30
Analyzing the Adaptive DataPhase Timing tabPhase Utilization tabFlow Profile tab	32 33

Managing Assets Using MMS

Pattern History tab Detectors tab Archive tab	38
Introduction	
Configuration Configuring the MMS Settings Configuring User Permissions Using the Type and Field Definitions Window Defining Shared Fields Defining Manufacturers Maintaining the Master Inventory List Using the On-Call Scheduler Defining Recurring Schedules Defining Dropdown Options Using the Select User/Group Window Using the Attach Files Window Using the Select Field Window	3 5 8 12 13 27 34 36 37 38
<b>MMS Entities and Locations</b> Configuring Entities and LocationsViewing Location HistoryUsing the Location Status Display	41 45
Working With Tickets	51 52 57 57 58
Preventive Maintenance (PMs)Adding PM Checklist ItemsAdding PM ChecklistsUsing the PM Checklist SchedulerScheduled PM Checklists	60 62 64
Monitoring Using the Asset Status Display Using the Location Status Display Using the Manufacturer Status Display Using the Region Status Display	74 78 81

# Managing Assets Using MMS

Centracs Administration

Using the Vehicle Status Display	3
Using the Warehouse/Repair Depot Status Display	5
Scrap Recycle	r
	b
MMS Reports	8
Assets Nearing Expected Failure Report	8
Assets Past Expected Failure Report	
Asset and Inventory Counts Report	0
Assets and Inventory Out Of Service Report	2
Average Response Times Report	3
Dispatch History Report	5
Moved Assets Report	6
PM Coming Due Report	7
PM Progress Report	9
Project Activity Report 10	1
System Age Dashboard Report 102	3
System Performance Dashboard Report 104	4
System, Region, and Location Values Report	5
Trending Count Report 10	6
Trending Response Times Report 102	8
Administrative Settings	1

## Centracs Administration

Administrative Settings 1
Organization Information1
Active Directory Settings 1
Licensing 1
SMTP Servers 1
Autoscope Settings 2
ECPI Tile Server 2
Password Strength 3
Confirmation Dialogs 3
Action Priorities 4
Preempts 5
Detector Settings
BlueTOAD
Offline Alert Format
Controller Editor Printouts
MMS Settings 10
Default Comm Parameters 10
Setting Up Security 11
Overview of Security
Defining Jurisdictions
Defining Jurisdiction Roles
Defining Application Roles 19

Defining User Roles2Setting Password Requirements2Defining Users2Configuring the Active Directory Service2Defining User Groups3Monitoring Users3	24 24 27 30
Setting Up Communications3Configuring Device Managers3Configuring Communication Channels3Overview of Polling Comms vs. Non-polling Comms4Configuring Polling Packets5Configuring Local and Global Settings5Overview of Local Settings5Overview of Global Settings5Viewing and Editing Global and Local Settings5	32 36 47 50 53 53 54
Configuring the Advanced CCTV Feature	
Setting Up Email/SMS Capability6Defining SMTP and POP Servers6Defining Offline Alert Formats6Defining Alert-related Global Settings7Defining Recipients7Enabling Recipients7Troubleshooting Offline Alerts8	57 59 72 73 75
Editing Map Layer Settings 8	33
Using the Street Names Editor	38
Archiving and Restoring Data8Archiving Data8Restoring Data9Troubleshooting the Archive and Restore Functions9For Advanced Users9	39 91 92
Purging Report Data from the System9	<del>)</del> 4
Monitoring the Health of the System9Viewing Application Statistics9Viewing Database Statistics9	97
Upgrading the Centracs Client Application 10	)1

# Appendix – Quick Reference

Action Types1
ASC/3 and Cobalt Controller Segments8
Available Commands from the Map, Tree, Etc
Controller Modes and Patterns15
Desired Modes
Current Modes
Patterns
Bindings for the Permissive Green Icon
Flashing Yellow Arrow (FYA) / Flashing Yellow Overlap (FYO) 17
Doghouse
Canadian Fast Flash 18



# **Overview of Centracs**

### Introduction

Centracs is an Intelligent Transportation System (ITS) application that offers a central integrated platform for traffic signal system control, Closed-Circuit TV (CCTV) monitoring and control, information management, graphical data display, center-to-center operations, and much more. Centracs uses client/server architecture and distributed processing to achieve a flexible and scalable system. System data processing is distributed across multiple servers and applications such that system functions are accomplished most effectively considering cost, communications implications, security, redundancy (back-up), and network interface capabilities. National and international protocol standards are used to make sure that the system can adapt to changes in technology and increase functionality over time with minimal impact on individual system components. Centracs uses intelligent interface protocols for distribution of real-time data between workstations, which increases system performance and multi-user responsiveness.

The Centracs monitoring screens represent data graphically, and make it easy for you to quickly keep tabs on what is occurring in the system. In addition to showing system alerts graphically, Centracs can send alerts immediately to specific online users, to all online users, or to offline recipients via email or SMS.

Unlike the user interfaces of many traditional traffic management systems, which separate operator control and text reporting functions from graphic display functions, the Centracs user interface integrates these operations. This lets you easily move between contexts in an intuitive point-and-click manner.

Modular Architecture



#### Modular Architecture

Centracs is a client-server application. The server side maintains the database, controls device communications, performs periodic functions, and so on. The client gives users an interface to the database. You can configure Centracs to have all components on one computer or to distribute them across multiple servers and multiple client workstations. The client-to-server communication is very efficient, even across a wide-area network.

Centracs is extremely modular and scalable because of its distributed processing architecture. High system performance can be maintained when the system is expanded, because system software processes can be distributed across various system processor components. The system software architecture does not require that one central processor perform all real-time functions. This protects your systems hardware/software investment and allows the system to be easily and incrementally expanded to handle any functions and features that are added afterwards. The Centracs system architecture provides for modular cost-effective expansion. The architecture has three main hardware components: workstations, communication servers, and traffic control/database servers.

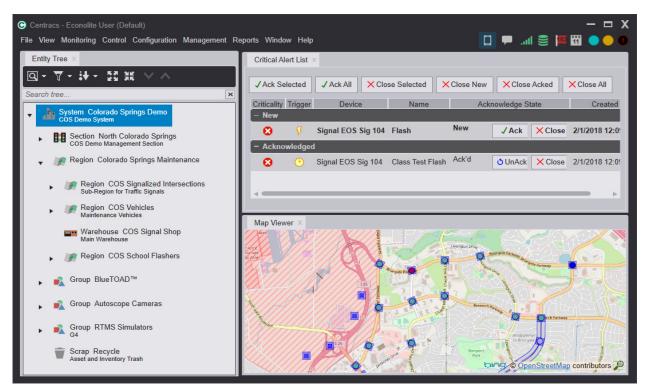
### Container Technology

Centracs has a flexible screen organization feature called *containers*. The default container layout, which has containers to hold six different windows, is shown below:

C Centracs - Econolite User (Default)		_ – – x
File View Monitoring Control Configuratio	n Management Reports Window Help	●●● 111 🗑 🖉 111 – 🔲

System Flexibility and Configurability

You can arrange the main window container layout and windows into your own customized display. You decide which windows to show, and in what arrangement. For example, if you use the Entity Tree, Map, and Alerts windows most frequently, you can set up your containers like this:



You can open multiple main windows (for use on multiple monitors), each with its own customized container layout. The use of "hidden" containers lets you open even more windows at the same time — these windows are hidden from view to save screen space until you need them.

#### System Flexibility and Configurability

Centracs is developed with the latest programming language and software development tools, and offers the highest level of system flexibility and configurability. It uses a standard, ODBC-compliant SQL database system (Microsoft<sup>®</sup> SQL Server) to store, retrieve, and manage all system data and parameter files. System reports and display presentations retrieve information from data stored in the database. Client (system user) workstations access network servers that perform traffic management, database management, and real-time traffic control and communications functions. Centracs interfaces to many different field devices and operates via any type of communications media, including twisted pair and leased line cable, wireless, and single or multi-mode fiber optic cable.

#### Field Devices

Centracs supports traffic signal controllers and other field devices (such as Dynamic Message Signs) that comply with the National Transportation Communications for ITS Protocol (NTCIP) protocol standards. Our total commitment to the NTCIP standard, and our continued involvement with the standards development process, puts Econolite in a unique position to deliver a fully-functional end-to-end communication system that can be maintained to the most current version of the standard. Centracs also supports protocols other than NTCIP, and offers an upgrade path for users of Oasis (2070L controller software) and W4IKS (170-type controller software) controllers. Also, because of the open architecture of Centracs, other protocols and device types may be added in the future, as necessary.

#### Device Manager

All connected traffic signal controllers are polled by a Device Manager connected to the Centracs Traffic Management System (TMS) local area network. Centracs servers currently support serial or Ethernet protocols (depending on the communication media used) of individual local intersection controllers, or other devices, interconnected by multi-dropped twisted-pair wire, wireless, or fiber optic cable circuits. The typical Centracs interface to a local intersection, or channel of intersections, is as follows: a Device Manager computer is connected to a controller via the provided interconnects (serial or Ethernet). The system will support NTCIP versions of Econolite ASC/2, ASC/2S, ASC/3 (1000, 2100, 2070, or RackMount) NEMA TS1/TS2 controllers, 2070 (E, L, or LN) controllers running the Econolite ASC/2070, ASC/3 2070, or Oasis firmware, 170-type controllers running specific versions Wapiti Microsystems W4IKS firmware, or possibly any NTCIP 1202 compliant NEMA controller or 2070 software. With optional software modules, Centracs can communicate with CCTV cameras, the traffic control systems of neighboring agencies, and more.

#### Maps

Centracs workstations use an advanced map-based Graphical User Interface. Each workstation user sees an on-screen map of the system area as the main user interface with Centracs. GIS-based maps (in their natural form) are required for real-time display of data.

Maps

I

Dynamic icons superimposed on the map indicate the type, status, and location of each active field device. For example, the screen below shows how a signal icon looks if the signal is in flash:



You can specify how icons look and change based on status information. You can zoom and scroll the map to show more or less detail for specific areas. You can also click any device icon to see more details about that field device, to show live video feeds (with the optional CCTV module), or to send commands to the device. Centracs uses graphics and colors extensively to make the map displays easy to understand.



Events, Alerts, and Actions •

#### Events, Alerts, and Actions

In Centracs you can choose which events to log, which to trigger alerts for, and which to ignore. For example, you can choose for Centracs to write a log entry each time a signal changes patterns, but to alert you if communications to a controller are lost.

Alerts are shown graphically in the Centracs user interface. Each alert is categorized as Informational, Warning, or Critical. Centracs can also forward alerts automatically to specific online users, to all online users, or to specific offline recipients. Online users are notified by a pop-up window accompanied by an optional audible alert; offline recipients are notified by email or SMS text message.

For cases in which an alert is not acknowledged or closed within a reasonable period of time, you can configure the Alert Escalation feature of Centracs to automatically send the alert to a different recipient or set of recipients. You can set up multiple levels of escalation, such that an alert continues to escalate until someone acknowledges or closes it.

Just as you can configure events to generate alerts, you can also configure them to trigger one or more actions, such as to generate a report or initiate a CCTV preset.

### Closed-circuit TV (CCTV)

CCTV (Closed-Circuit TeleVision) is a video camera monitoring system that broadcasts a signal to one or more specific monitors (as opposed to a public broadcast). You can use the CCTV features in Centracs to see intersections and field devices via live video streams. You can show more than one video display at the same time, and you can dock them in containers like any other Centracs window. When configured, each camera is shown as an icon on the Map Viewer and in the Entity Tree for easy on-demand access. Specific camera views (called "presets") can be configured to automatically launch if a specific event occurs. You can also launch presets by manual commands and schedule entries.

Centracs supports *Autoscope* cameras as well as cameras from vendors such as Axis, Cohu, ACTi, VCS, and Pelco. If supported by the camera type, Centracs includes PTZ (pan, tilt, and zoom) capabilities to control the camera position.

#### Remote Controller Configuration

You can configure controllers locally in the field or remotely from Centracs, via the Signal Editor feature or via the Remote Front Panel Emulator. For more information, refer to *Maintaining Controller Settings Remotely* on page 15-1.

Security

#### Security

Access to data in Centracs is strictly controlled. Centracs offers multiple levels of security that you can use to permit or prevent access to specific data and functions on a user-by-user basis. These levels are:

- Jurisdictions
- Jurisdiction Roles
- Application Roles
- User Roles
- User IDs

For more information, refer to *Overview of Security* on page 20-11.

#### Reports

In Centracs you can generate a number of useful reports. You can run these reports on demand or on a schedule — for example, you may choose to schedule the System Activity report to run at the end of each day. With each report, you can format it, print it, save it to a file, and/or email it to a recipient. If you frequently run the same report with the same parameter settings, you can save your settings as a "configurable report" so you never have to enter them again. For more information, refer to *Generating Reports* on page 10-1.

# **Optional Modules**

### Advanced Closed-Circuit Television (CCTV) Module

In addition to the standard CCTV module, Centracs offers an advanced CCTV video monitoring system as an optional module. The CCTV system is an IP-based interface to a Genetec server, and provides for network-based switching of digitized video streams. The system supports multiple camera types and manufacturers. IP cameras or analog cameras with digital encoders are required for this feature.

With the CCTV features in Centracs, you can monitor all your intersections and field devices via live video streams from closed-circuit TV cameras. Each camera is shown in the Entity Tree and the Map Viewer as an icon. Simply double-click a CCTV icon to open a real-time video display from that camera. You can pan, tilt, and zoom the camera, as well as set and recall preset views. You can show more than one video display at the same time, either in independent windows or docked in "containers".

In addition to manual, real-time control of cameras in Centracs, you have the option to digitally archive video streams to permanent storage on a disk drive via the Genetec Omnicast user interface. This feature is flexible:

- you can schedule archiving during specific times of the day
- movement in the video frame can activate it
- an alarm input can activate it

Centracs puts no limit on the number of cameras in the system or the number that you can have open at the same time. The total number of cameras is limited by the Genetec license and the bandwidth of the network; the number of camera displays is limited only by screen resolution and processor bandwidth.

Video is digitally encoded at the source via low-cost digital encoders or IP cameras from vendors such as Axis, Cohu, ACTi, VCS, and Pelco. The CCTV module also shows digital video from *Autoscope<sup>®</sup> Terra<sup>™</sup>* video-detection cameras. The Genetec server manages and distributes the encoded video to transmit video to many viewing clients at the same time. Access to the CCTV system is controlled by privileges associated with user IDs.

Dynamic Message Signs (DMS)

#### Dynamic Message Signs (DMS)

You can use Centracs to monitor your dynamic message signs (DMS) and to send new messages to the signs. Messages can be uploaded to Centracs from the sign, configured in Centracs and downloaded to the sign, or a combination of the two. You can activate messages on demand, you can schedule them to run on certain days and times, and you can configure Centracs to send messages when certain events occur.

Each defined DMS has a status display that shows the current message on the sign, the state of communications between Centracs and the sign, the state of the beacons (on or off), the current control mode of the sign (remote or local), and any errors being reported by the DMS (such as climate control errors and message syntax errors):

DMS Sign @ Eastwood Transit Center - Sky	yline (VariableMessageSign) 1s 🛛 🗎 🔀
° ACCIDEN USE ALI	T AHEAD Route
Message	Summary
Current Message:	Control Mode: Central Brightness: 25
Runtime Priority: 1	Display Type: LED
Message Type: Changeable	Voltage: 14.2
Message ID: 1	
Stored Messages:	Time
Permanent: 12	Last: 18:45:15 Last Update: 18:45:18
Changeable: 5	Error. 1s
Quick Message Blank Sign Poll	
Temperature Warning	or Open

You can also use the Map Viewer to keep an eye on your DMS devices. Each DMS is shown as an icon on the map. Because the icons are color-coded, you can quickly get information about the status of the DMS with just a glance at the map. If you hold your mouse pointer over the DMS icon on the map, Centracs shows a miniature representation of the current message shown on the sign. You can issue DMS commands manually (from the DMS Status display, from the map, from the Entity Tree, or via a manual command), or you can schedule them to run at specific times via the scheduler. You can also use triggers to configure Centracs to send specific messages when certain events occur.

#### **Centracs** Adaptive

You can use the Centracs Adaptive system to automatically respond to changing traffic conditions by adjusting offsets and splits on the signal controllers. You can configure multiple Adaptive algorithms; each controls a specific corridor of intersections. Because you can use the Centracs scheduler to turn Adaptive on and off, you can configure Adaptive to run at specific times of the day, on specific days of the week, for specific date ranges, etc. This gives you flexibility in your operations.

#### Measures of Effectiveness (MOEs)

The optional MOE (Measure of Effectiveness) reports feature calculates detailed statistics about the performance of traffic signals and shows these calculations graphically for easy interpretation by the user. Calculations are made from data collected by ASC/3 and Cobalt signal controllers. The MOE reports include:

- MOE Cycle Length Report graphs the actual length of each cycle run by the controller during the day.
- MOE Flow Rate Report graphs the volume of vehicles detected per hour during each time of the day for each phase.
- MOE Green Times Report graphs the actual length of the green time for each cycle during the day for each phase.
- MOE PCD Report graphs the arrival time of each vehicle in relation to the actual green, red, and yellow times for the selected phase.
- MOE Percentage Pedestrian Calls Report graphs the percentage of cycles during which a pedestrian call occurred.
- MOE Split Failures Report graphs the number of times during the day that the volume-to-capacity ratio was larger than or equal to the user-specified Failure Threshold.
- MOE Volume-to-Capacity Report graphs the volume-to-capacity ratio for each time of the day for each phase. Centracs uses this ratio to determine when split failures occur.

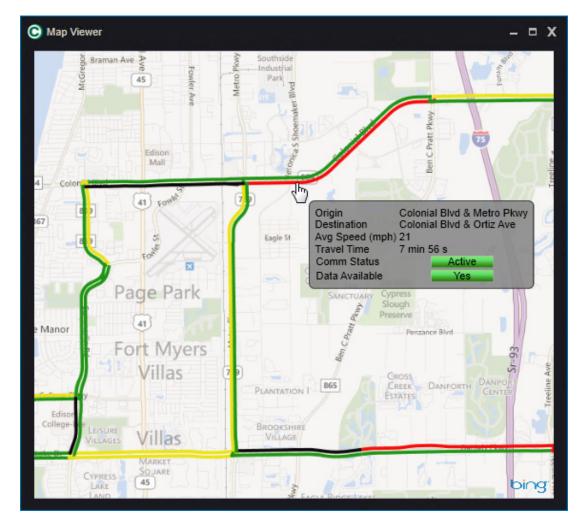
Travel Time Links

#### Travel Time Links

BlueTOAD<sup>™</sup> (Bluetooth<sup>™</sup> Travel-time Origination And Destination) by TrafficCast provides real-time Bluetooth<sup>™</sup> detection of current travel times and speeds for specific sections of road. BlueTOAD detects anonymous Bluetooth<sup>™</sup> signals broadcasted from wireless mobile devices (such as phones, headsets, and music players) inside moving vehicles. When a particular Bluetooth device in a moving vehicle passes a BlueTOAD checkpoint (called a Data Collection Station), BlueTOAD records the current time; when the same device/vehicle passes the next checkpoint, BlueTOAD records the travel time, and uses the distance between the two checkpoints to calculate the speed of the vehicle.

Though BlueTOAD is a separate system, Centracs offers an optional Travel Time module that allows you to integrate your BlueTOAD data into the user interface of your Centracs system. Centracs communicates with your BlueTOAD web server to retrieve the latest information, then shows it in maps, reports, and status displays in Centracs.

With the Travel Time module, you can quickly see the current status of your roadways at a glance:

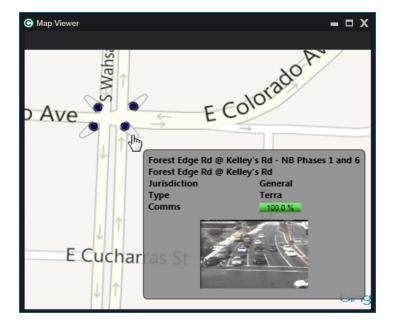


#### Data Collection Management System (DCMS)

The Data Collection Management System (DCMS) module collects real-time vehicle detection data from Autoscopes and RTMS devices, and allows users to:

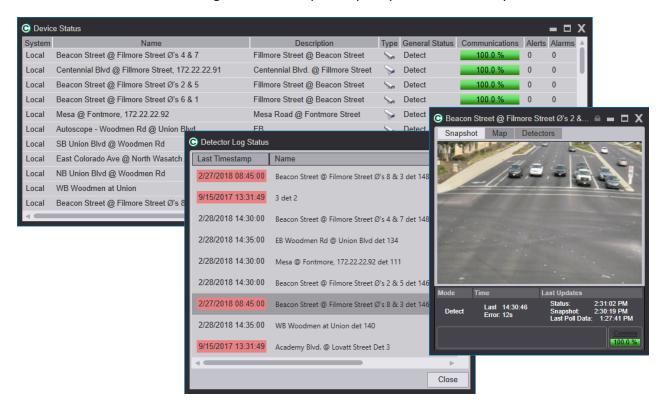
- view streaming video and snapshot images from the Autoscope video vehicle detectors (if supported by the device type)
- view the locations of the field devices on a map
- monitor real-time communications between Centracs and the field devices
- generate reports and graphs to analyze the detection data
- compare the data for different devices, different detectors, and/or different dates

The Entity Tree shows a hierarchical view of all your Autoscope and RTMS devices, and their associated detectors. Your devices can also be added to the map view. If supported by the device type, you can hold the mouse over the entity on the map to see the latest snapshot image or live video feed:



Data Collection Management System (DCMS)

Several monitoring screens allow you to quickly see the status of your devices in Centracs:

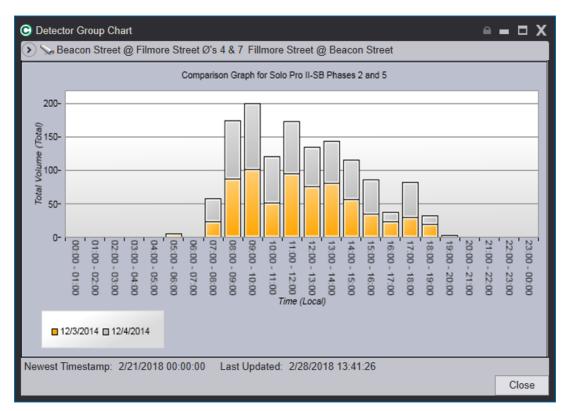


DCMS supports these device types:

- Autoscope Solo Pro II<sup>®</sup>
- Autoscope RackVision<sup>™</sup> Pro
- Autoscope 2020<sup>™</sup>
- Autoscope Solo Terra<sup>™</sup>
- Autoscope RackVision Terra<sup>™</sup>
- Autoscope System-16 Terra<sup>™</sup>
- Autoscope ENCORE<sup>™</sup>
- Autoscope Duo<sup>™</sup>
- RTMS (G4, X3, or SX-300)

Local Edition •

In addition to the standard Centracs reports, the Detector Group Chart allows you to generate various graphs and data tables to organize, display, and compare your detector data:



#### Local Edition

Centracs Local Edition (or LE for short) is a streamlined version of Centracs for technicians to manage intersections locally at the cabinet. These intersections may or may not be directly connected to a Centracs central database through normal communication mechanisms. With LE, technicians can do uploads and downloads between a laptop and locally-connected controllers in the field. It also permits the exchange of data (entities, controller settings, log data, etc.) between the laptop and the main Centracs database, or between two Local Edition laptops.

LE offers a subset of the tools available in the full Centracs software — only the ones necessary when connected locally to one controller. These include such tools as manual commands, controller database editors, the signal status display, and the detector fault status monitor. It also includes tools for technicians to synchronize their changes with the main Centracs database when they go back to the office.

LE offers the same basic user interface as Centracs, including containers, the Entity Tree, preference sets, and so on. As a result, experienced Centracs users can start working in LE immediately, with little to no training.

Local Edition

#### Features

- Standard Centracs user interface
- Two-way synchronization between Centracs and LE
- Direct connect from laptops to controllers via serial connection or Ethernet
- NEMA & 170/2070 support in one system
- Database editing, uploading, and downloading for all Centracs-supported controllers
- Easy device configuration
- Flexible device hierarchy, groupings, and jurisdictions
- Manual commands and action sets
- Graphical signal status display
- Detector fault monitor
- Management of controller and system logs (including uploading, viewing, archiving, purging, and restoring)
- User-definable roles and privilege settings

#### **Communications and Device Support**

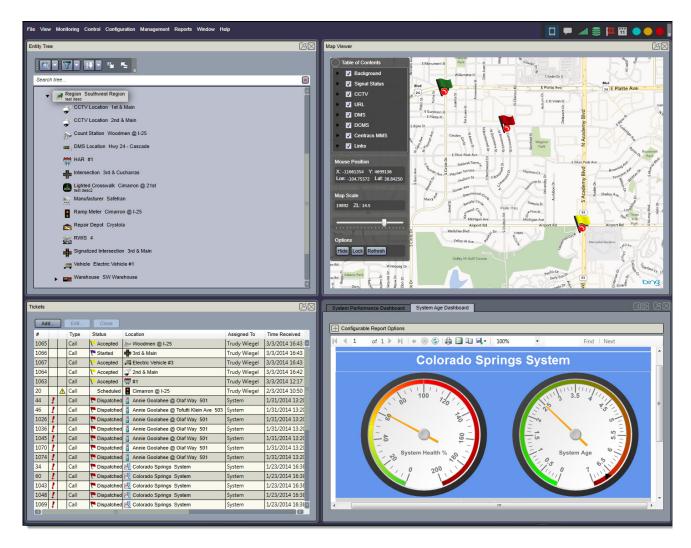
LE supports Ethernet and serial communication connections between the laptop and a controller, and supports TCP/IP, UDP/IP, RS-232 serial, ACT, and PMPP protocols. Traffic signal device support includes: Econolite's NTCIP-based ASC/2, ASC/2S, and ASC/3 (1000, 2100, 2070, or Rack Mount), NEMA TS1/TS2 controllers, 2070 (E, L, or LN) controllers running ASC/2070, ASC/3 2070, or Oasis firmware, Siemens EPAC/SEPAC controllers running EPAC version 4.01D, 170-type controllers running specific versions of Wapiti W4IKS firmware, and NTCIP1202-compliant controllers.

#### Database Synchronization

From Local Edition, a technician can copy data from the main Centracs database for use on the laptop in the field. Later, after the technician is done working in the field, the new data on the laptop can be selectively merged with the data in the Centracs central database, or with a different LE database on a separate laptop or workstation. The synchronization tool inspects the data on the two systems and indicates which system has the newest data for each object. The user can then select which data to merge. The feature used to merge entity data permits technicians to manage field assets using the same structures, permissions, and jurisdictions defined in the Centracs database. When you use LE in conjunction with Centracs, the main Centracs database acts as the master copy of all controller configuration data, regardless of whether the controllers are connected to the central system.

## Maintenance Management System (MMS)

Centracs MMS (Maintenance Management System) is an automated GIS-based system that manages and tracks ITS and signal equipment assets, trouble tickets, work orders, and preventive maintenance activities performed by technicians. It is offered as a standalone system or as an add-on module to the Centracs ATMS system or Centracs DCMS system.



### Features

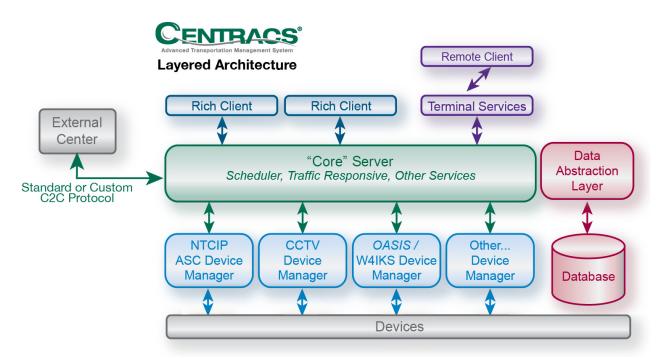
- Real-time asset tracking through the entire asset life cycle
- Asset life-cycle history, including in-service time, failures, repairs, movement to another location, PM activities, depreciation, and replacement value
- User-definable asset types and properties
- User-definable Preventative Maintenance (PM) plans, activities, and schedules
- Tracking and reporting of work order and trouble ticket activity

Center-to-Center Interface Module

- Dispatch scheduling and on-call notification planning
- Real-time GIS maps highlight active trouble tickets and work orders at a glance
- Location-based storage and retrieval of drawings, manuals, and other documents
- Mobile web interface for technicians to record equipment transfers, preventive maintenance activities, and trouble ticket resolution using a smart phone, tablet device, or laptop in the field
- Real-time data logging, display, archiving, reporting, and alert notifications
- Scheduled email report delivery to keep users informed even when they are not logged into the system
- Automatic generation of trouble tickets based on alarm and alert conditions
- Sorting and filtering of assets and locations in the Entity Tree

### Center-to-Center Interface Module

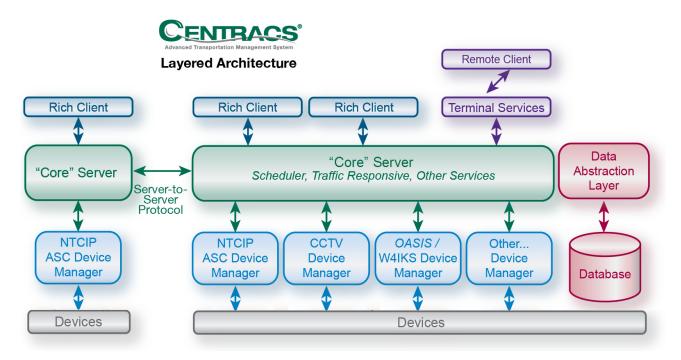
Centracs also has an optional NTCIP center-to-center interface that uses published NTCIP objects to transmit and exchange data objects that are necessary to interface with other NTCIP central software. Data is securely exchanged between centers and shown on each system.



Server-to-Server Interface Module •

### Server-to-Server Interface Module

Because Centracs systems use the same database configurations, if two or more agencies use Centracs, you can use the Server-to-Server interface module to exchange real-time traffic data. This module offers fuller data exchange than the Center-to-Center module. For more information, refer to *Configuring Server-to-Server (S2S)* on page 12-1.



■ Synchro<sup>™</sup> UTDF Interface Module

### Synchro<sup>™</sup> UTDF Interface Module

Centracs offers an optional module to interface with the Synchro<sup>™</sup> phase timing and coordination analysis software by Trafficware<sup>®</sup>, Ltd. Synchro models traffic flow in order to optimize traffic signal timing. You can use the optional Synchro add-on module for Centracs to exchange traffic controller parameter data with Synchro.

For NTCIP controllers, the UTDF interface is accessed through the Signal Editor. For ACT controllers, the UTDF interface is accessed through the Entity Tree or Map Viewer. You can use the UTDF interface to export controller timing plans and phase data from the system into the Universal Traffic Data Format (UTDF), which is compatible with Synchro. After the data has been saved in this format, you can open it in Synchro for analysis and optimization. You can also use the UTDF interface to import timing plans and coordination data from Synchro back into Centracs.

**Note** • You cannot import phase timing data from Synchro into Centracs. You must manually enter phase timing data into the Signal Editor, then download it to the controller. Also, the UTDF interface does not support split and offset values that are calculated as a percentage of cycle length. During export, percentage-based splits and offsets will be changed to seconds; during import, they will be changed back into percentages, if necessary. As part of these conversions, the split and offset values may undergo some rounding.

The Synchro UTDF interface supports ASC/2 controllers (both standard and NTCIP), ASC/3 and Cobalt NTCIP controllers, Eagle controllers, Oasis controllers, and W4 controllers.

For instructions on how to export and import controller data, refer to *Using the UTDF Interface Module* on page 15-24.

For more information on Synchro, visit the **Trafficware website**.

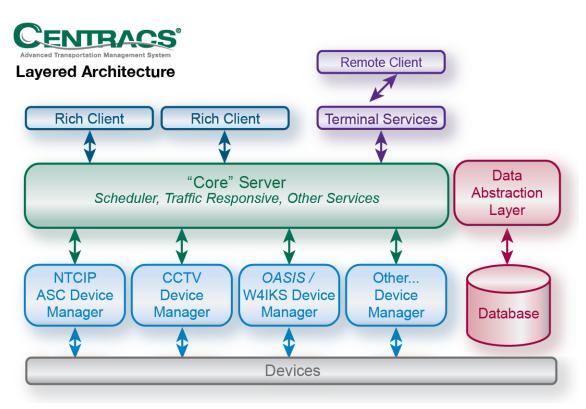
General System Architecture

# **General System Architecture**

### Local and Wide Area Network

Centracs supports the concurrent use of multiple workstations (Rich Clients) over local and wide-area network connections. The number of workstations that can connect is only limited by the capacity of the network and the system servers, which you can increase if necessary. Centracs uses a password-based security system for users to log into the system; this security system prevents unauthorized workstations on the same network from accessing the traffic system. Centracs uses jurisdictional access and user-group permissions to ensure database integrity.

Also, the optional Center-to-Center (C2C) interface module allows the limited exchange of data across jurisdictional boundaries using NTCIP C2C protocols. For a more complete exchange of data, two or more agencies that use Centracs can use the optional Server-to-Server interface module to connect their systems together.



### Communications

Usually, the user workstation reads data from the database on the Core (file/application) Server, which is populated in real time directly by the Device Manager. You can configure the Device Manager to communicate serially (RS-232) or via Ethernet (UDP/IP) communications to the controllers and other field devices. Centracs supports fiber optics (multi or single mode), twisted pair, leased lines, and wireless communication modems. Serial-based media usually support a communications data rate of 9600 to 19,200 bps;

Device Managers

Ethernet supports up to 100 mbps. Direct full-time interconnect is usually necessary to connect the Device Manager computer to the local intersections in the field, but Centracs is designed to communicate remotely to permit intersection control from a central office. Device Manager and communication channel capacity are different based on the type of interconnect that is used. But because Device Manager computers are designed to support a minimum of 250 devices serially (or more via Ethernet), Centracs can manage more devices each time a Device Manager computer is added.

### **Device Managers**

Centracs uses Device Managers to manage all system communications. The Device Manager supports NTCIP protocols to Econolite ASC/2, ASC/2S, ASC/3 (1000, 2100, or RackMount) NEMA TS1/TS2 controllers, 2070 (E, L, or LN) controllers running the Econolite ASC/2070, or non-NTCIP controllers such as 2070s with Oasis firmware and 170type controllers running specific versions of Wapiti Microsystems W4IKS firmware. Other NTCIP 1202-compliant NEMA controllers or 2070 software may be added in the future. The communication process uses a polled-response type of communications to the field devices. The Device Manager software does all of the low-level communications functions necessary to interface with the different field controllers for traffic signal control, status monitoring, and data upload/download. Low-level functions include device polling, message input/output buffering, message sequencing and prioritization of tasks, error checking/correction, data filtering, and short-term data storage. This distributed processing architecture in the system relieves the traffic application/file server from doing these processing-intensive tasks and also prevents these functions from becoming a bottleneck on the local area network.

You can configure multiple Device Managers. Device Managers isolate the knowledge of specific device types into separate executable applications, which allows modularity and scalability.

### **Core Applications**

Centracs uses a Core File and Application Server to operate and manage devices and user interfaces. All data shown on displays or entered on local workstations is managed by the Core Server and directed to Device Managers, a Center-to-Center interface, a Server-to-Server interface, or directly to the SQL database through a Data Abstraction Layer. For more system efficiency and scalability of operation, it is recommended that you run the SQL database manager on a different computer.

# **Traffic Signal Management and Control**

In addition to control and monitoring displays, you can use formatted data-entry screens to store and edit parameter data for different system elements. For example, you can use traffic controller data screens to easily edit local controller parameters and to upload and download these parameters to/from local controllers in the field. During system operation, user alerts are shown in the graphical user interface (GUI), with an alert indicator on the toolbar and a separate alert window that you can keep on-screen to continually monitor alerts.

The main display has a toolbar near the top of the window that contains menus and other controls to configure container windows, set session parameters, or enable another action or activity that affects the entire session. Actions supported by and pertaining to a single window or container are enabled through that window's action bar or controlled inside that window.

Centracs has many ITS functions, of which traffic signal management and control is one of the primary applications. Centracs is a powerful management tool for engineers, with:

- Intersection database management
- Flexible central scheduling of events
- Detailed system, signal, and detector, and efficiency reports
- Alert paging and emailing
- Powerful analysis tools, such as system detector "link" displays, Time-Space diagrams, Split Monitor graphs, Synchro<sup>™</sup> Interface, etc.

### Traffic Signal Monitor

Centracs uses windows called "Signal Status displays" to represent each of your intersection configurations. The display has graphic representations for up to 16 phases (red, yellow, and green indications), 16 pedestrian movements (Hand and Man symbols), 16 overlaps (red, yellow, and green indications), and up to 32 detectors and status symbols such as Communication Failure, Preemption, Coordinator Alarm, Detector Fault, and Cabinet Flash. An integrated graphics editor allows you to add symbols to the display to represent each of the movements, detectors, and status indicators.

Custom graphics are also available. These graphics are usually based on an aerial photograph of the intersection or an actual CAD-type drawing. After it has been configured in Centracs, the graphic display accurately shows the intersection geometry, lane configuration, and other important elements. As with the template-based graphics, you can add symbols to represent each of the movements, detectors, and status indicators specifically for each intersection.

Traffic Signal Control Modes

# Traffic Signal Control Modes

### Main Server Features

The Centracs main server computer(s) provides for system-wide signal database control, communications, coordination, and continuous monitoring of system performance from the central location. The system is designed for unattended operations 24 hours per day, seven days a week, without requiring an operator to be logged on. The central facility has the capacity for continuously monitoring and exercising plan selection control for all controllers and/or other devices. The central system monitors the operation of all field devices and automatically reports detected failures and malfunctions. With requisite licensing and interface equipment, you can attach any number of workstations (desktops or laptops) to the Centracs network, each capable of different functions, which include:

- Traffic control and management functions
- Historical data analysis
- Traffic engineering operations analysis

You can configure intersections in any number of control Sections, each running Traffic Responsive, time-of-day, or manually-selected timing plans.

### Central and Local Control

Centracs continuously transmits and receives status data from each intersection via communications media. Centracs also supports data parameter upload, download, and time/date communications requests on a periodic request-driven basis.

Centracs distributes actual low-level traffic signal control responsibilities to the local intersection controller. Maintenance of coordination is managed locally and only requires that timing plan parameters be available at the controller and that controller firmware keeps an accurate time base. Local time base clocks are synchronized with the central system periodically via regularly-scheduled time/date update communications functions.

When operating under centrally-selected Traffic Responsive (TR), Time-of-Day (TOD), or Manual Mode (MM), the communications system sends a plan number to the local controller, which specifies the selected plan of operation necessary for that controller. In TOD Local mode (Plan 0), plan selection occurs locally according to the TOD/DOW (Dayof-Week) schedule that resides on each controller.

The central system continuously monitors local controller operations for malfunctions for all controllers that communicate with the central system (regardless of the current plan selection mode).

A minimum of 48 locally-stored coordination-timing plans can be supported at each local controller through NTCIP commands. (Per the TS2 Standard, ASC/2 controllers have 64 coordination plans; ASC/3 and Cobalt controllers have 120 coordination plans.) Each plan has a cycle length, an offset, and a split set. Timing plans also activate phase omits, phase calls, special function outputs, and phasing sequences as set by the parameters in the

Group, Section, and System Control

local plan on the controller. A plan input can also command Free, Flash, and local Time-Based Coordination (TBC) control plans.

### System Control Modes

Centracs accommodates system control modes that are based on operator commands, TOD schedules, and device status monitoring. You can use these modes at several levels: System, Section, Subsection, Group, and Signal.

For details about how commands are prioritized and how conflicting commands are resolved, refer to *Overview of Scheduling and Manual Commands* on page 7-1.

Programmed Free and Flash operations are selected by invoking special plan numbers that correspond to these operations. You can implement MAN plan selection on a System, Section, Group, or Signal basis.

Intersection Controller Manual Override selection(s) take precedence over Group-based selections, which in turn take precedence over Section or System-wide selections. It is possible for you to set independent termination time frame(s) for MAN mode selections at any level.

Local controllers will always go back to a designated local TOD (Local) mode when not being commanded into one of the other system control modes by the central. The controller also goes into this mode if it is in TR mode but there is not sufficient detector data for TR to run, and no other central mode is available. The local controller parameter settings affect the local TOD mode to cause the controller to be in the Free State or operate in a locally-determined TOD/DOW plan.

### Group, Section, and System Control

Optionally, you can assign controllers and other ITS devices to "Sections" for plan implementation of Traffic Responsive, time-of-day, and manual control. In addition, you can command central flash on a Group-wide (a combination of individual devices and Sections), Section-wide, or System-wide basis. You can configure intersections in any number of control Sections, each running Traffic Responsive, time-of-day, or manuallyselected timing plans. All control Sections that operate on a common cycle length are automatically synchronized because they use the same master cycle timer.

### System Time Reference Synchronization

You can specify when the Device Manager synchronizes the clocks. At the specified time, the server synchronizes the local time clocks in each of the controllers it supports. The server computer clocks are synchronized with each other with a standard protocol, Network Time Protocol (NTP). You can also synchronize the workstation clocks with this protocol. An internet time source is usually included as part of the system hardware to associate all system clocks with a traceable time source. The cycle-reference time used by traffic controllers is a function of the traffic controller software. Per the TS2 standard, the start of main street green is defined as the local zero point.

Main User Interface

# **Main User Interface**

The main user interface of Centracs is intuitive and easy to use. There are three main functional areas of the user interface:

- Menus
- Containers
- Status Bar

The sections below explain these three functional areas.

### Menus

The main menu in Centracs includes these submenus:

Submenu	Options	For details, refer to
File	Log Out	Logging Out on page 1-39
	Settings	Administrative Settings on page 20-1
	Exit	Logging Out on page 1-39
View	Entity Tree	Using the Entity Tree on page 3-1
	Favorites	<b>Bookmarking Your Favorite Entities on page 3-16</b>
	Мар	Using Maps on page 5-1
	CCTV Tours	Using CCTV Tours on page 8-13
	Notes	Adding Notes to Entities on page 3-14
	Edit Preset Maps	Edit Preset Maps Option on page 5-7
	Preference Sets	Using Preference Sets on page 2-19
	Save Preference Set As	Using Preference Sets on page 2-19
	Skins	Changing the Color Theme on page 2-18

#### **Overview of Centracs**

Menus •

Submenu	Options	For details, refer to	
Monitoring	Comm Statistics	Communication Statistics on page 6-51	
	Comm Test	Testing Comms between Centracs and a Controller on	
	Device Status	page 6-16	
	Detector Group Chart	Viewing the Device Status Window on page 6-23	
	Detector Log Status	Using the Detector Group Chart on page 17-33	
	Split Monitor	Viewing Detector Log Status on page 17-28	
	Time Space Analysis	Using Split Monitor on page 6-26	
	Detector Fault Status	Using the Time Space Analysis on page 6-33	
	Device Collection Monitor	Monitoring Detector Faults on page 6-48	
	Real-Time Detector Status	Using the Device Collection Monitor on page 6-19	
	Real-Time Link Status	Real-Time Detector Status on page 6-42	
	Alerts	Real-Time Link Status on page 6-45	
	Current Users	Using the Alert List on page 4-22	
	Server-to-Server Status	Monitoring Users on page 20-31	
	MOE Reports	Viewing S2S Systems Status on page 12-9	
	Adaptive Monitor	Using the MOE Reports on page 11-1	
	Threshold Traffic	Monitoring Adaptive Status on page 18-29	
	Responsive Monitor	Monitoring Real-time TR Calculations on page 13-16	
Control	Manual Commands	Issuing Manual Commands on page 7-8	
	Scheduler	Using the Scheduler on page 7-11	
	Holidays/Special Days	Specifying Holidays and Special Days on page 7-18	
	Preventive Maintenance Checklist Scheduler	Using the PM Checklist Scheduler on page 19-64	
	Scheduled Preventive Maintenance Checklists	Scheduled PM Checklists on page 19-71	
	Tickets	Working With Tickets on page 19-51	
	On-Call Scheduler	Using the On-Call Scheduler on page 19-27	

Menus

Submenu	Options	For details, refer to
Configuration	Master Inventory Type and Field Definitions Shared Field Definitions Manufacturers Preventive Maintenance Checklist Items Preventive Maintenance Checklists Detection Devices Street Names Detector Groups Servers/Comms Polling Packets Traffic Algorithms Alerts and Events Action Sets Map Layers	Maintaining the Master Inventory List on page 19-13Using the Type and Field Definitions Window on page 19-5Defining Shared Fields on page 19-8Defining Manufacturers on page 19-12Adding PM Checklist Items on page 19-60Adding PM Checklists on page 19-62Configuring & Deleting Autoscope Entities on page 17-14Using the Street Names Editor on page 20-88Maintaining Detector Groups on page 17-39Setting Up Communications on page 20-32Configuring & Nerkets on page 13-5Configuring Events, Alerts, and Triggers on page 4-1Running Action Sets on page 7-21Editing Map Layer Settings on page 20-83
Management	Users User Groups Change Password User Roles Application Roles Jurisdiction Roles Jurisdictions Recipients Global Settings Local Settings Merge Data Purge Data Merge Logs Server-to-Server External Connections	Defining Users on page 20-24Defining User Groups on page 20-30Changing Your Password on page 1-39Defining User Roles on page 20-23Defining Application Roles on page 20-19Defining Jurisdiction Roles on page 20-14Defining Jurisdictions on page 20-12Defining Recipients on page 20-73Overview of Global Settings on page 20-54Overview of Local Settings on page 20-53Merging Entity Data on page 16-1Purging Report Data from the System on page 20-94Merging Log Data on page 16-8Configuring Server-to-Server (S2S) on page 12-1Configuring Server-to-Server (S2S) on page 12-1

Menus •

Submenu	Options	For details, refer to
Reports	Reports all Centracs reports <i>Generating Reports</i> on page 10-1	
		Data Collection Reports on page 17-42
		MMS Reports on page 19-88
Tools	n/a	Adding Shortcuts to the Tools Menu on page 2-14
Window	New Container Window	Using Multiple Monitors on page 2-13
	New Auto-Hide Container	Using Hidden Containers on page 2-11
	Main Container Window	Selecting a Container Layout on page 2-2
	Active Windows	Viewing Active Windows on page 2-28

Use the Help menu to access the online help system, or to see the client/server version information for your current installation. (You can also press **F1** from any screen to open the help topic associated with that screen. For more information about the online help system, refer to *Using the Online Help* on page 1-40.)

#### Containers

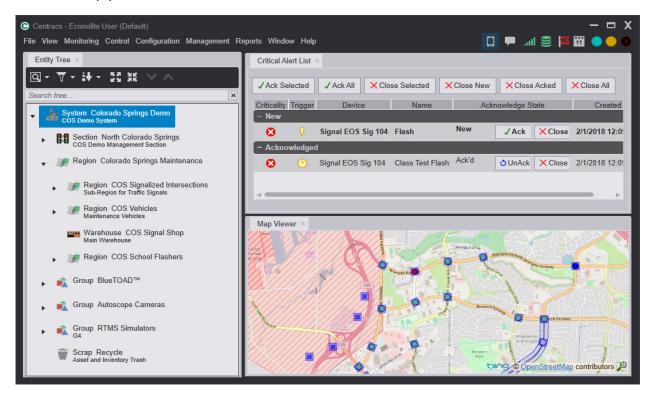
### Containers

The main screen layout of the Centracs application is flexible — you can make your own arrangement of windows. When the application is launched for the first time, the main screen shows a set of empty boxes, as shown below. Each of these boxes is a *container* for a window. To quickly and easily make your own customized view of Centracs, you can open the windows you use most, then drag and drop them into these containers. When you exit the application, your container layout is kept in the database, and is recalled the next time you log in.

C Centracs - Econolite User (Default)		- 🗆 X
File View Monitoring Control Configuration	n Management Reports Window Help	0 🔴 🌑 📓 🛎 📶 🗧

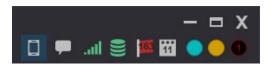
Status Bar 🔹

You can arrange the main window container layout and windows into your own customized display. You decide which windows to show, and in what arrangement. For example, if you use the Entity Tree, Map, and Alerts windows most frequently, you can set up your containers like this:



### Status Bar

The status bar gives you a picture of the overall health of the Centracs system and provides information about the database, the application, and existing alerts.



lcon	Description
	<b>Mobile/Touch Mode</b> . Toggle this icon to increase or decrease the display fonts for mobile applications.
-	<b>Feedback</b> . Clicking on this icon opens the Centracs UserVoice window from where you can submit ideas or provide suggestions on how to improve the Centracs experience.

Status Bar

lcon	Description	
all	<b>Core Status</b> . Hovering over this icon displays the percentage of CPU and Memory resources used by Centracs. Clicking on this icon opens the Application Monitoring window. For details, refer to <i>Viewing Application Statistics</i> on page 20-97	
()))	<b>Database</b> . Hovering over this icon displays the status of the database. Clicking on the icon opens the Database Statistics window. For details, refer to <i>Viewing Database Statistics</i> on page 20-99.	
163	<b>Tickets</b> . Provides a quick indicator of how many tickets have been created and displays Dispatched, Accepted, Started, Arrived, and Closed Work Pending status. Clicking on this icon opens the Tickets window.	
m	<b>Scheduled Preventative Maintenance</b> . Provides a quick view of how many maintenance tasks have been Assigned, are In Progress, and are Past Due. Clicking on this icon opens the Scheduled Preventative Maintenance Checklists.	
	Alerts (Information, Warning, Critical): Displays the number of alerts.	
	The number in each circle shows the count of current alerts for that type (in this example, six alerts are shown). If there are no alerts of a specific type, no number is shown in the corresponding circle, and the circle is dark.	
	When there are unacknowledged alerts, and after all of the alerts of a specific type have been acknowledged, that indicator stops blinking. Informational alerts are considered to be acknowledged on receipt, so the Informational indicator does not blink. To manually stop an indicator from blinking, right-click it.	
	To see details about the alerts, click the alert status bar to open the Alert List. For more information, refer to <i>Using the Alert List</i> on page 4-22.	

### Centracs UserVoice:

From this window, you can submit your idea to improve the Centracs experience or vote on ideas submitted by others.

From the main menu, click the **Feedback**  $\prod$  icon; the Centracs UserVoice window opens.



### To vote or add a comment to a previously submitted idea:

- 1 Click on a previously submitted idea or comment.
- 2 Click **Vote** on the left side of the message.
- 3 Enter you email address, your name, and agree to the terms of service.
- 4 Click 1 vote, 2 votes, or 3 votes (you have 10 total votes).
- 5 You can also add a comment in the "comments" field and then click **Post comment**.

#### To enter your idea or suggestion:

- 1 Scroll down and click I suggest you ... to open the suggestion field.
- 2 Enter your idea in the "I suggest you..." field.
- 3 Select a Category from the pull down menu and describe your idea.
- 4 Click **Post idea** to submit your suggestion.
- 5 To go back to the main window, click Your Idea, Your Vote under General (top left).

Glossary of Terms

I

# **Glossary of Terms**

The table below identifies some of the transportation terms, Centracs-specific terms, and acronyms used in this manual.

Term	Meaning	
ACT	Advanced Computing Technologies, Inc.	
ATMS	Advanced Traffic Management System.	
BIU	Bus Interface Unit.	
BlueTOAD	Bluetooth™ Travel-time Origination And Destination.	
C2C	Center-to-Center. For more information, refer to <i>Center-to-Center</i> Interface Module on page 1-18.	
CAD	Computer-Aided Design.	
CCTV	Closed-Circuit TeleVision. A video camera monitoring system that broadcasts a signal to one or more specific monitors (as opposed to a public broadcast). For more information, refer to <b>Using CCTV Displays on</b> <b>page 8-1</b> .	
DCMS	Data Collection Management System.	
DMS	Dynamic Message Sign. For more information, refer to Using Dynamic Message Signs (DMS) on page 9-1.	
DOW	Day of Week.	
ECPI	Econolite Control Products, Inc.	
EDI	Eberle Design, Inc.	
Entity	A device or other object that is managed by Centracs (for example, a CCTV camera or a Signal), or a collection of devices managed by Centracs (for example, a System or Group).	
	An entity may be a device, a collection of devices, a collection of collections, or a link to a website or program.	
Entity Tree	A hierarchical tree view of all the entities defined in the Centracs system. For more information, refer to <b>Using the Entity Tree on page 3-1</b> .	
GIS	Geographical Information System. This integrates hardware, software, and data used to capture, manage, analyze, and show all types of geographically-referenced information.	
GUI	Graphical User Interface.	
HAR	Highway Advisory Radio.	

Glossary of Terms •

Term	Meaning	
INTID	Intersection ID or controller number.	
IP	Internet Protocol.	
ITS	Intelligent Transportation System.	
LAN	Local Area Network.	
LE	The Local Edition of the Centracs software. For more information, refer to <i>Exchanging Data with 'Local Edition'</i> on page 16-1.	
LOS	Level of Service.	
MMS	Maintenance Management System.	
MMU	Malfunction Management Unit.	
MOE	Measure of Effectiveness.	
MPH	Miles Per Hour.	
MSG	Main Street Green. For more information, refer to <i>Using the Status</i> <i>Display for Sections/Subsections</i> on page 6-10.	
MULTI	Mark-Up Language for Transportation Information (used with Dynamic Message Signs).	
NTCIP	National Transportation Communications for ITS Protocol.	
ODBC	Open Data Base Connectivity.	
OID	Object IDentification.	
OSM	Oasis On-Street Master.	
PM	Preventive Maintenance.	
PMPP	Point-to-Multi-Point Protocol.	
РОР	Post Office Protocol.	
PTZ	Pan/Tilt/Zoom feature on CCTV cameras.	
RTMS	Remote Traffic Microwave Sensor.	
RWIS	Road Weather Information System.	
S2S	Server-to-Server. For more information, refer to <i>Server-to-Server</i> Interface Module on page 1-19.	
SDK	Software Development Kit.	

Glossary of Terms

Term	Meaning	
SMS	Short Message Service. Popularly known as "text messages" to and from mobile phones and other mobile devices.	
SMTP	Simple Mail Transfer Protocol.	
ТВС	Time-Based Coordination.	
ТСР	Transmission Control Protocol.	
TOD	Time Of Day (refers to the time-based schedule configured locally on a controller).	
TR	Traffic Responsive.	
TSA	Time Space Analysis. For more information, refer to <i>Using the Time Space Analysis</i> on page 6-33.	
UDP	User Datagram Protocol.	
URL	Uniform Resource Locator; the unique address for a website or file that is accessible on the Internet.	
UTDF	Universal Traffic Data Format.	
VOS	Volume/Occupancy/Speed.	
WMS	Web Map Services.	
XML	eXtensible Markup Language.	

\* Some entries are adapted from the U.S. Department of Transportation Federal Highway Administration definitions.

# Logging In

I

### To log in to the Centracs application:

1 Launch the Centracs program (from the shortcut in your Microsoft Windows<sup>®</sup> Start menu or on your Windows Desktop).

Recti CCTV         BlueTOAD™         C2C Plugin	Centracs
C2C Plugin	
Centracs Adaptive	User Name:
Centracs MMS	Password:
👼 Cohu CCTV	Pasawolu.
Data Collection Station	
Dynamic Message Sign	
Eagle EPAC	
Eos Support	

The Log In screen opens.

- 2 Enter the User Name and Password you received from your Centracs administrator. Passwords are case-sensitive; user names are not.
- 3 If you want to connect to a different server, click **Advanced** O to show the Core field:



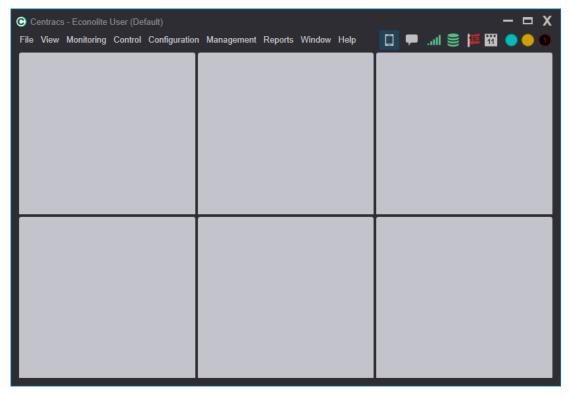
Click **Discover**. This finds all Core servers available on the network. From the dropdown list, select the appropriate server, or enter a different one.

4 Click Log In.

Logging In

If you entered the user name and password correctly, a series of messages is shown as you are authenticated and logged on.

If this is your first time to log in to the application, the first screen you see will be similar to the screen shown below.



The title bar of the window shows the first and last name of the user who is logged in, followed by the preference set that is in use (refer to *Using Preference Sets* on page 2-19).

**Note** • The system automatically logs you out after a period of inactivity in the interface (as set by your system administrator).

# **Logging Out**

**Note** • When you log out of the application, the system saves your display settings. Centracs uses these settings again the next time you log in.

#### To log out and close the application:

■ Click File ► Exit.

Or

Click the in the upper-right corner of the interface.

#### To log out and log back in:

Click File > Logout. This logs out the current user and opens the Log In window so that you can log in to a different account. Or you can click Close on the Log In window to close the application entirely.

## **Changing Your Password**

The first time you log in to the application, change your password.

**Note** • If you are an administrator, you can reset the password for another user, in the event that they have forgotten their password. Refer to *Defining Users* on page 20-24.

#### To change your password:

1 From the main menu, select Management ▶ Change Password...

The Change Password window opens.

C Change Password			
Old Password	•••••		
New Password			
Verify Password			
	OK	Cancel	

- 2 Enter your current password in the "Old Password" field, and enter your new password in both the "New Password" and "Verify Password" fields.
- 3 Click OK.

The minimum password requirements (for example, password length, and whether uppercase characters are required) are configured by your system administrator. If the new password you entered does not satisfy these requirements, the system shows an error message with details about why the new password is invalid, and you are asked to enter a stronger password. I

• Using the Online Help

# Using the Online Help

The online help system is accessible from the Centracs application via the Help menu or the **F1** key.

#### To browse or search the online help:

1 From the Centracs main menu, select **Help ► Help Topics**.

The online help system opens in a new window.

2 Use the Contents tab in the left pane of the window to navigate to a specific topic, or use the Search tab to find topics that contain one or more specific keywords.

To use the Contents tab, click a book to expand its contents, then click a topic to open it in the right pane of the window.

#### To show context-sensitive help for a specific window:

While the window is open in Centracs, press the **F1** key. A help topic specific to that window opens.

# **Technical Support**

For more information or for assistance, please contact Econolite Technical Support, or browse our website:

Phone: 1-800-225-6480 Email: <u>support@econolite.com</u> Web: <u>www.econolite.com</u>

From the Econolite website, you can click **SUPPORT** for links to Econolite's support website and product training resources. You can also scan this QR code to quickly access our Technical Support site, the EGI Learning Center, Product Datasheets, and more:



**Note** • You must register in order to use the support site; after you have registered, you can access the site directly at <u>techsupport.econolite.com</u>.

# **Give Feedback**

Do you have an idea for improving your workflow in Centracs, or for enhancing the overall Centracs experience? If so, submit your idea on the Centracs UserVoice website to share it with the Centracs community. You can also vote for ideas submitted by others, add comments, view comments from Econolite's product steering group, and view the status of each submitted idea (approved, declined, under review, etc.). To participate in Centracs UserVoice, go to econolite.uservoice.com, or click the mathematical idea is the contract of the centracy status bar.

# **Customizing the User Interface**

# **Overview of Containers**

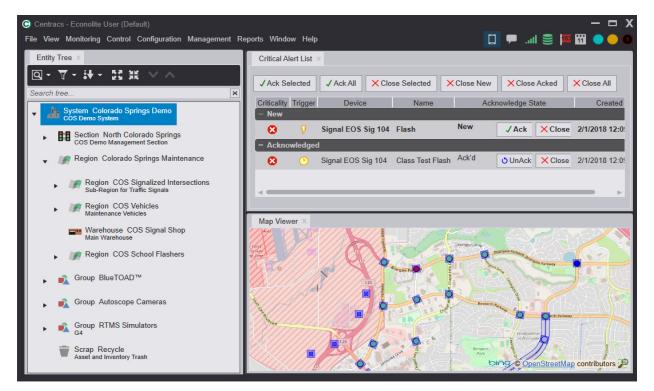
With the versatile screen layout of Centracs, you can make your own arrangement of windows. When the application is launched for the first time, the main window shows a set of empty boxes, as shown below. Each of these boxes is a *container* for a window. To quickly and easily make your own customized view of Centracs, you can open the windows you use most, and drag and drop them into these containers. When you exit the application, your container layout is kept in the database, and is recalled the next time you log in.

Centracs - Econolite User (Default) - C X					
File View Monitoring Control Configuratio	n Management Reports Window Help	■ 🗧 🖼 🖬 💶			

Selecting a Container Layout

# **Selecting a Container Layout**

Centracs has a flexible screen organization feature called *containers*. You can arrange the main window container layout and windows into your own customized display. You decide which windows to show, and in what arrangement. For example, if you use the Entity Tree, Map, and Alerts windows most frequently, you can set up your containers like this:



Centracs offers various pre-defined container layouts, and also offers you the ability to make your own layout.

#### To select a pre-defined container layout:

**IMPORTANT** • When you select a new container layout, all windows that are currently docked in your existing containers will be closed before the main window is replaced with your new container layout.

**1** From the main menu, select **Window** ▶ **Main Container Window**.

A graphical list of your layout choices is shown:



Selecting a Container Layout

For example, there is only one container in the first pre-defined layout; the second layout has two containers shown side-by-side; another layout has four square containers of the same size; and so on.

- Centracs Econolite User (Default)

  File View Monitoring Control Configuration Management Reports Window Help

  Image: Image:
- 2 Select a layout. For example, if you choose the sixth layout, you see this main window:

### To add a custom container layout:

**IMPORTANT** • When you select a new container layout, all windows currently docked in your existing containers will be closed before the main window is replaced with your new container layout.

1 From the main menu, select **Window** ▶ **Main Container Window**. A graphical list of the layout choices is shown.

	2	

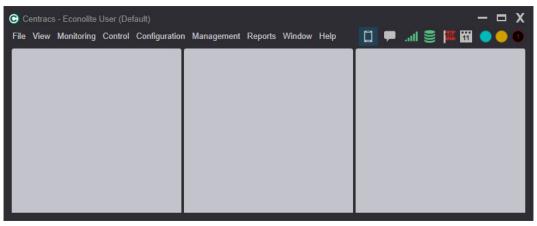
• Selecting a Container Layout

I

**2** Select the last layout, identified by a question mark. The Custom Container Grid window opens.

C	Main Contain		x	
	Dimensions			
	Rows	Colu X 3	imns	
		ОК	Cancel	

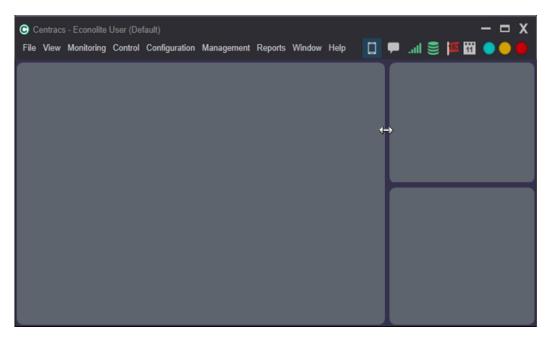
- **3** Enter the dimensions for your custom layout. You must specify the number of rows and columns of containers (between 1 and 10). For example:
  - 1 row and 3 columns = three containers
  - 2 rows and 2 columns = four containers
- 4 Click **OK**. The empty container window is changed to show the requested layout of containers.



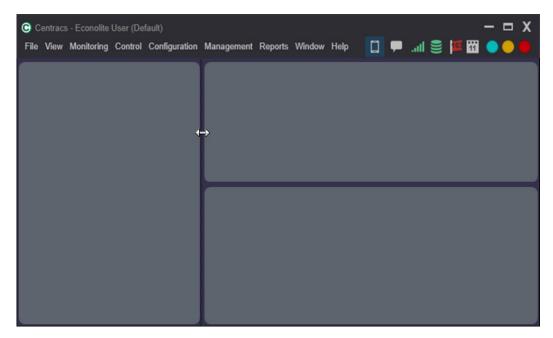
Selecting a Container Layout

#### To resize a row or column of containers:

1 Move your mouse pointer over the container border until the pointer changes to a double-sided arrow, as shown below.



2 Left-click, drag, and drop the border to the new size.



• Moving Windows Into and Out of Containers

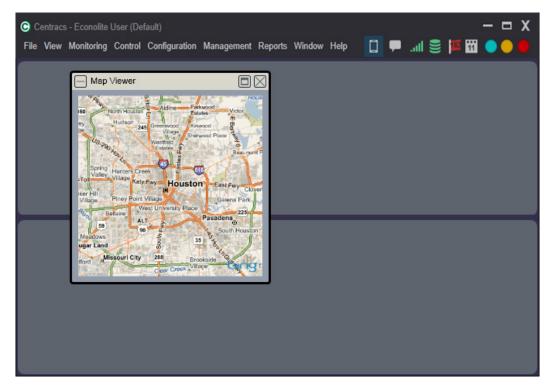
# **Moving Windows Into and Out of Containers**

After you have chosen or designed a container layout for your main window, you can populate the containers with the windows you will use the most.

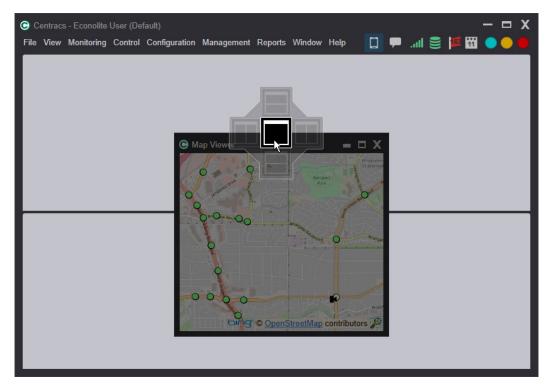
You can move and resize Centracs windows in the same way as any window in Microsoft Windows<sup>®</sup>. To move a window, click the title bar, then drag and drop it. To resize a window, click the window border and stretch or shrink it to a new size.

#### To dock a window in a container:

Open any window from one of the menus. For example, to open the map, select
 View ▶ Map. The Map window opens as a floating window.

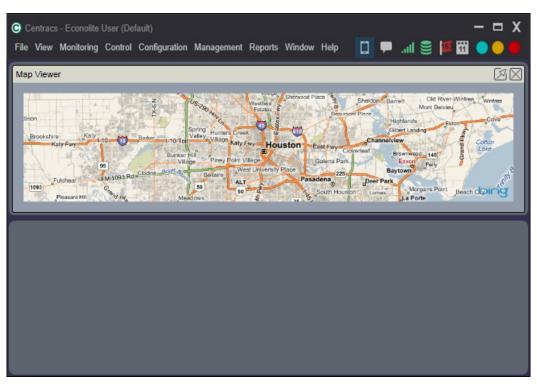


2 Click the title bar of the floating window and drag it to the center of the container. The floating window becomes transparent, and as you move it over each container, a drop target is shown in the center.



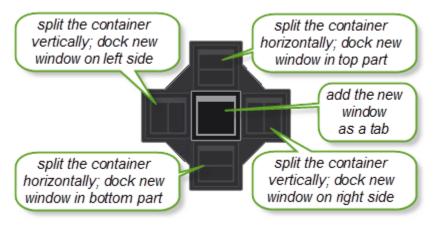
3 When your mouse is over the drop target (and the target lights up), release the mouse button to drop the window into the container. Centracs automatically resizes and moves the window to fit the container.

• Moving Windows Into and Out of Containers



In this example, you could then open a second window and dock it in the bottom container.

If you dock the window in a container that already has a window docked in it, the drop target gives you five options:



These options allow you to nest windows inside the containers, in any configuration you wish.

**Note** • To open and dock the status window for a specific entity, you can drag the entity directly from the Entity Tree (page 3-1) or from the Favorites window (page 3-16) into a container.

Moving Windows Into and Out of Containers •

### To un-dock a window from a container:

Right-click the title bar and click Float..

Or

L

Pull the window out of the container (i.e., click the title bar then drag and drop it).
 The window pops out of the container and becomes a floating window again.

### To re-dock a window into its previous container:

Click the title bar of the floating window and drag it to the center of the container.
 The window pops back into its original container and is resized to fit.

Using Tabbed Containers

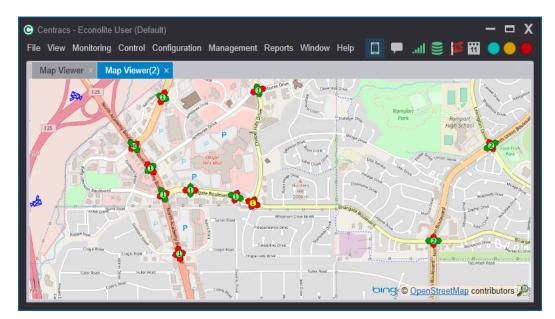
# **Using Tabbed Containers**

Each container in Centracs can contain more than one window. For example, if you have multiple Signal Status display windows open, you can add them all to the same container.

#### To add a tabbed container:

Drag multiple windows into the same container and drop them on the drop target, one at a time.

The example below shows a one-container layout with two tabs:



Container tabs permit you to put any number of windows in a container, and then click the tabs to quickly switch between them. For example, you can use this feature of Centracs to have multiple maps open, each with a different zoom level and/or pan. (To learn how to give your multi-tabbed windows useful names, refer to *Renaming Windows* on page 2-13.)

#### **Tips:**

- To pull a tab out of the container into its own floating window, left-click the tab and drag it out or right-click the tab and click **Float**.
- To close a tab, click the X beside the tab name.

# **Using Hidden Containers**

If it is necessary to have multiple windows open, but you do not want to clutter your container window, you can use hidden containers. With this feature you can hide some of your windows, but still keep them easily accessible via a tab on the left, right, or bottom of the main container window.



#### To configure a hidden container:

- **1** From the main menu, select **Window** ▶ New Auto-Hide Container.
- 2 Specify whether to hide the new container on the left edge, right edge, or bottom edge of the main container window. A new tab is added in the location specified.
- 3 To populate the hidden containers, use the procedure in *Moving Windows Into and Out of Containers* on page 2-6. The only difference is that when you drag the window to be docked, drag it over the tab name first, then drag it onto the drop target of the hidden container.
- 4 To rename the hidden container, right-click the tab name and click **Rename**. Type the new name over the old name and click **OK**.

If desired, you can have multiple tabs on each edge (left, right, and bottom) of the main container window.

**IMPORTANT** • If you change the main window layout, all hidden container tabs close.

• Using Hidden Containers

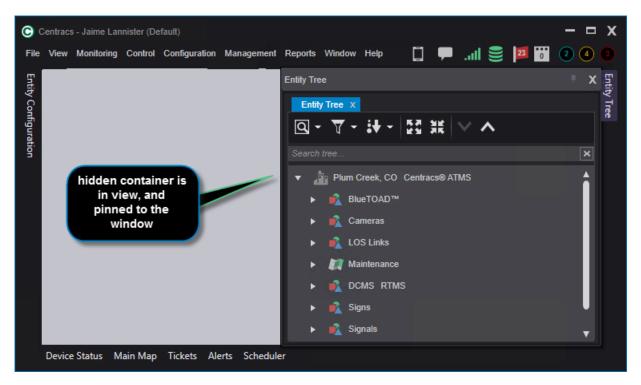
I

I

I

#### To use your hidden containers:

- To view a hidden container, click the tab, and the hidden container slides into view. Click the tab again to hide the container.
- To move a hidden container, right-click the tab and select one of the Move options.
- To temporarily "pin" a hidden container so that it remains in view while you do your work, or so that you can view multiple hidden containers at the same time, click the licon.
- To permanently close a hidden container tab, right-click the tab name and select Close, or click the M.



## **Renaming Windows**

When you have multiple windows of the same type open, they are given generic names by default, such as Map Viewer and Map Viewer(2). But these can easily be given more meaningful names.

**Note** • Not all windows can be renamed.

#### To rename a window:

- 1 If the window is docked in a container with other windows, you must first pull it out of the container. You can either drag and drop the window outside of the container, or you can right-click the tab and select Float.
- 2 Right-click the window name in the title bar and select Edit Title.
- **3** Type the new name over the old name and click **OK**.

If the "Save Preference Set on Logout" setting is set to true, then as long as you do not close the renamed window before you log off, your custom window name will be saved when you log back into Centracs. But if you close the window, or if you select a new container layout, the custom name is discarded. For information about preference sets, refer to *Using Preference Sets* on page 2-19.

# **Using Multiple Monitors**

If you have multiple monitors on your client workstation, you can open multiple container windows to make Centracs even more powerful and efficient for your operations.

#### To open multiple container windows to be shown on more than one monitor:

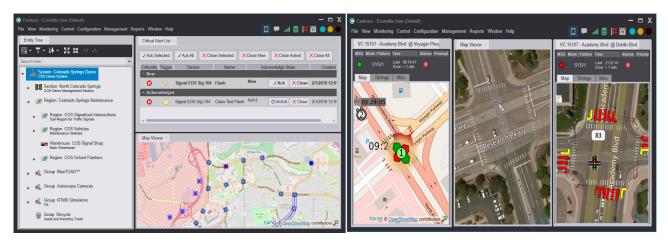
1 From the main menu, select **Window** ▶ New Container Window.

A graphical list of your layout choices is shown:



- 2 Select a layout, or make a custom layout. For details, refer to Selecting a Container Layout on page 2-2.
- 3 Drag and drop windows into the new containers. For details, refer to *Moving Windows Into and Out of Containers* on page 2-6.

• Adding Shortcuts to the Tools Menu



4 Drag the new container window to your second monitor and maximize it.

Now you have a full multi-monitor view of your Centracs operations. Centracs permits you to open as many windows on as many monitors as Windows<sup>®</sup> and your workstation hardware can support.

# Adding Shortcuts to the Tools Menu

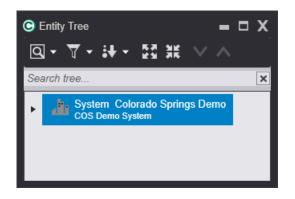
Optionally, you can configure a "Tools" menu on the client interface, where you can add shortcuts to frequently used applications, links, and files (such as a conflict monitor application, a calculator application, Notepad, an MS-DOS command prompt, log files, or any third-party application you use in your transportation management operations).

By default, shortcuts added to the Tools menu are available to all users system-wide (unless you only permit access to those users who are assigned to a specific Jurisdiction). You can also add shortcuts as icons on the Map Viewer.

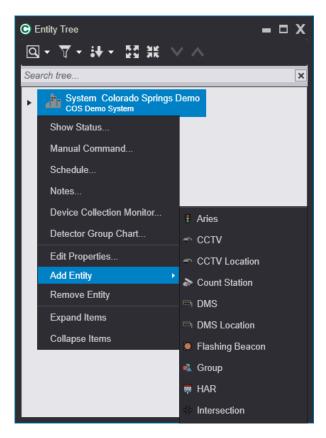
**Note** • When Centracs is first installed, it does not show the Tools menu. You can see this menu after the first shortcut is configured (refer to the procedure below).

### To add a Tools shortcut:

1 From the main menu, select View ▶ Entity Tree.



- Adding Shortcuts to the Tools Menu •
- 2 Right-click the name of the parent entity (such as a System) and select Add Entity ► URL, as shown below:



The Entity Configuration window opens.

- 3 Enter a name and description to identify the new shortcut.
- 4 In the **Mode** field:
  - For an executable application (like Calculator, Notepad, Internet Explorer, etc.), select "Exe".

Or

- For a link to an address on the web, select URL.
- 5 If you selected "Exe", the Executable and Arguments fields are shown:
  - For Executable, enter the path and executable name. (For standard Windows<sup>®</sup> tools like Calculator, it is not necessary to enter the path.) Refer to the examples below.
  - For Arguments, enter any optional arguments to pass to the application. Refer to the examples below.
- 6 If you selected "Url", enter the internet address of the website. Refer to the examples below.
- 7 Enable the **Show in Tools Menu** checkbox.

- Adding Shortcuts to the Tools Menu
  - 8 Optionally, change the Jurisdiction for this shortcut so that only specified users have access to it. For more information, refer to *Defining Jurisdictions* on page 20-12.
  - **9** Optionally, to add notes for this shortcut, click to the right of the Notes field. For more information, refer to *Adding Notes to Entities* on page 3-14.
  - **10** Click **OK**. The new shortcut is added to the Entity Tree and to the Tools menu.

### Examples:

<ul> <li>Entity Configuration</li> </ul>	1		
Name/Identifier	Notepad		
Description	Shortcut to Notepad application		
Mode	Exe	•	
Executable	Notepad.exe		
Arguments			
Show in Tools Menu	<b>V</b>		
Jurisdiction	General	•	
Notes	0 notes		
	Entity Configuration Name/Identifier Description Mode URL Show in Tools Menu Jurisdiction Notes	Url http://www.s	Cams orings Traffic Cam Website pringsgov.com/trafficeng
		ОК	Cancel Apply

Adding Shortcuts to the Tools Menu •

Add a shortcut to	Mode	Executable / Arguments / URL
open a log file in Notepad	Exe	Executable: Notepad.exe
		<pre>Arguments: filepath\filename (such as C:\log.txt)</pre>
print a log file via Notepad	Exe	Executable: Notepad.exe
		<pre>Arguments: /P filepath\filename (such as /P C:\log.txt)</pre>
launch the calculator	Exe	Executable: Calc.exe
launch a third-party tool	Exe	<pre>Executable: varies (such as C:\ThirdPartyTool\XYZ.exe)</pre>
launch a website	Url	<pre>URL: varies (such as http://techsupport.econolite.com/)</pre>

### Sample Tool Configurations

For more information about the Entity Tree, refer to Using the Entity Tree on page 3-1.

For fast and easy access to your new URL entity, you can also add it to the map. To do so, select **View** > **Map** or **View** > **Preset Map** from the main menu and zoom in on the location for the URL. Drag and drop it from the Entity Tree onto the desired position on the map. The Map Editor opens so that you can define and configure how the URL will be shown on the map. You can choose one of three generic URL icons:



The computer icon is available in these three colors so that you can distinguish one URL entity on the map from another.

You can also choose one of two CCTV icons if your shortcut is to a web-based camera feed:



• Changing the Color Theme

Or you can use the Static Text option in the Map Editor to label the URL entity with text and/or numbers (either on its own, or paired with a computer icon or CCTV icon):



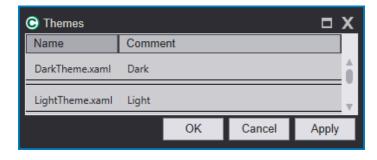
For details about how to use the Map Editor, refer to *Editing the Map View* on page 5-18.

# **Changing the Color Theme**

Optionally, you can change the color settings for the Centracs user interface. The application comes loaded with two pre-defined color themes: Dark and Light.

### To select a different theme:

1 From the main menu, select View ▶ Themes.



2 Click a theme, then click **Apply** or **OK**. (**Apply** saves your changes and keeps the window open; **OK** saves your changes and closes the window.)

# **Adding Your Own Color Theme**

**Note** • This procedure requires administrative rights to the computer/file system.

### To customize the Centracs color theme:

- 1 In the Centracs Skins folder (for example, C:\Program Files (x86)\Econolite\Centracs\CentracsClient\Skins), make a copy of a theme file and give it a descriptive name (such as GreenTheme.xaml).
- 2 Use a text editor or xaml editor to make your changes. Also change the Comment line to describe the new theme (such as <sys:String xmlns:sys="clrnamespace:System;assembly=mscorlib" x:Key="Comment">Green Theme.<// sys:String>). Save your changes.
- **3** From the main menu, go to **View** ▶ **Themes**.
- 4 Select the new theme you added and click **OK**.

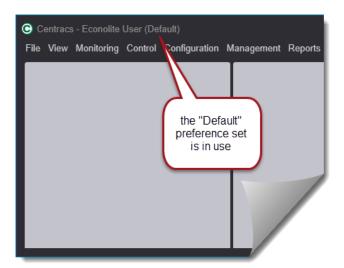
# **Using Preference Sets**

By default, when you log out of Centracs, your current display settings are automatically saved to the database, so that the next time you log in, your containers and windows are re-opened exactly as you set them — even if you log in on a different workstation. Optionally, this behavior can be changed, as described below. You can also save specific display settings to a "preference set" to be used later or by another user.

Permanently saving your display preferences in a named preference set allows you to:

- change your view temporarily but go back to your current view afterwards
- save different views for different tasks you do during the day
- save different views for different jurisdictions you manage
- save different views for different workstations you use
- share your view with another user

While you are logged in, the title bar at the top of the Centracs window shows the name of the preference set currently being used:



These settings are saved in preference sets:

- The main container window size, layout, and contents
- Any other container windows or undocked floating windows that are open (unless you have the "SaveFloatingWindows" Local Setting set to "false"; refer to page 20-53)
- Any hidden container tabs and their contents
- The sort order and view style of your Entity Tree (if it is open)
- Custom titles of windows (refer to page 2-13)
- The pan and zoom levels on any maps that are open

Using Preference Sets

Setting Name	Description
Save Floating Windows	Controls whether any undocked floating windows are saved to your current preference set when you log out.
Save Preference Set On Logout	Controls whether Centracs automatically saves changes to the current preference set when you log out:
	<ul> <li>If set to true, any changes you make to your display preferences during your session are automatically saved when you log out. The next time you log in, Centracs will look the same as the last time you logged <i>out</i>.</li> </ul>
	<ul> <li>If set to false, any changes you make to your display preferences during your session are discarded when you log out. The next time you log in, Centracs will look the same as the last time you logged <i>in</i>.</li> </ul>
	For example, suppose:
	<ol> <li>Your default preference set is called Pref Set 1, and it shows two maps and two CCTV feeds.</li> </ol>
	2 You log in and select Pref Set 2 instead, which shows three maps and three CCTV feeds.
	<b>3</b> You open one more map and CCTV feed.
	4 You log out.
	In this case, if the setting is set to true, the next time you log in, Centracs will use Pref Set 2, which now shows four maps and four CCTV feeds. On the other hand, if the setting is set to false, the next time you log in, Centracs will use Pref Set 1, which still shows only two maps and two CCTV feeds.
	The default is true.
	Note • If this setting is set to true, and if you are using a preference set owned by another user, Centracs tries to save changes to the preference set, but cannot because you are not the owner. Therefore, Centracs asks whether you want to save the view to a new preference set. To avoid seeing this message every time you log out, either choose another view that you own, save the view to a new preference set, or change "Save Preference Set On Logout" to false.

There are three Global Settings/Local Settings that affect the behavior of preference sets:

Using Preference Sets •

Setting Name	Description
Login With Local Preference Sets	Allows you to use different preference sets for different workstations:
	<ul> <li>If set to true, you can configure Centracs to use a different preference set for each workstation you use. For example, if you sometimes use Centracs on a desktop computer with a widescreen monitor, and sometimes on a laptop with a small screen, you can use a preference set that shows multiple maps, CCTV feeds, and status displays when you log in to the desktop computer, but use a streamlined preference set that shows only a few important screens when you log in to the laptop.</li> <li>If set to false, Centracs uses the same preference set when you log in, regardless of the workstation being used.</li> </ul>

**Note** • These settings are included in both Global Settings *and* Local Settings. If both are set, the Local Setting overrides the Global Setting.

If preference sets are not behaving as you expect, it is likely due to the settings your system administrator chose for these two Global Settings. You can override the Global Settings on your own workstation by configuring these two settings in your Local Settings. For more information, refer to *Configuring Local and Global Settings* on page 20-53.

#### To save your current view to a preference set:

- C Preference Sets Default Name Owner Default Econolite Δ EconoliteUser Default Default eessien Default fpooran Default gnunez Save Current Save As Open Save
- **1** From the main menu, select **View ▶ Preference Sets...**

The window shows all the preference sets currently defined in the database.

- Using Preference Sets
  - 2 Do one of these:
    - To replace the preference set currently in use, click **Save Current**.

Or

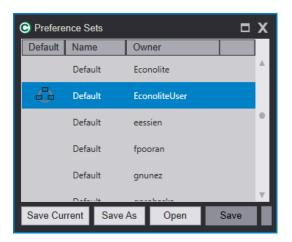
• To create a new preference set and leave the current one intact, click **Save As**. Enter a name for the preference set and click **OK**.

Preference Sets				
Default	Name	Owner		
	Default	Econolite	<b>A</b>	
- 63	Default			
	Defa 🖸 Sav	ve Preference Set 🛛 🗖	x	
		r a name for the prefere	nc	
	Defa	e CCTV Video wall OK Cancel		
_	D-4-			
Save Cu	rrent Save	As Open Sa	ve	

The preference set is saved to the database, and any user on any workstation can access it. (Other users can *use* your saved preference set(s), but only you or an administrator can *rename* or *delete* them.)

### To use a saved preference set:

1 From the main menu, select View ▶ Preference Sets...



The window shows all the preference sets currently defined in the database.

2 Click a preference set (it is not necessary to be the owner of the set) and click **Open**, or double-click the preference set.

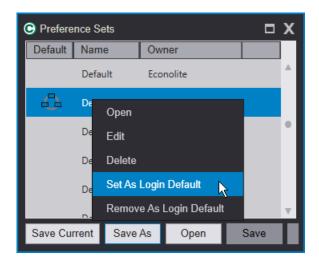
The containers, tabs, windows, maps, and colors saved to that preference set are loaded into your view.

Using Preference Sets •

### To set a preference set as your default:

**Note** • If you use Centracs on multiple workstations, and if the "Login With Local Preference Sets" Global Setting or Local Setting is set to "true", you can set a different default preference set for each workstation you use.

- **1** From the main menu, select **View** ▶ **Preference Sets...**
- 2 Right-click a preference set:



### 3 Click Set As Login Default. The Default column shows that this set is now the default:

This icon is shown when the "Login With Local Preference Sets" setting is set to "true":

- Prefer	rence Sets			
Default	Name	Owner		
	Default	Econolite		
	Default	es		
	Default	jaj		
	Default	jj		
	Default	kam		
	K Mac's	kam		
	Default	lj		
	Default	55		
	desktop PC - North side	SS		
	desktop PC - South side	SS		
	laptop - CCTVs	SS		
	laptop - maps	SS		
	laptop - status displays	SS		
	Default	System		
	Default	WS		
Save C	Save Current Save As Open Save Cancel			

This icon is shown when the "Login With Local Preference Sets" setting is set to "false":

Prefer	ence Sets		
Default	Name	Owner	
	Default	Econolite	
	Default	es	
	Default	jaj	
	Default	ü	
	Default	kam	
	K Mac's	kam	
	Default	lj	
$\mathbf{O}$	Default	SS	
	desktop PC - North side	SS	
	desktop PC - South side	55	
	laptop - CCTVs	SS	
	laptop - maps	55	
	laptop - status displays	55	
	Default	System	
	Default	WS	
Save Current Save As Open Save Cancel			

#### Using Preference Sets

In the example on the left, this preference set will be used when you log into Centracs on the same workstation; you can then log into another workstation and select a different default preference set for that workstation. In the example on the right, this preference set will *always* be used, regardless of the workstation you log into.

#### 4 Click Save.

From now on, each time you log in, Centracs automatically opens this preference set.

**Note** • If the "Save Preference Set On Logout" Global Setting or Local Setting is set to "true", and if you open a different preference set after setting the default, the new preference set becomes the default when you log out.

### To rename a saved preference set:

**Note** • If you do not have sufficient permissions, you can only rename preference sets owned by you.

1 From the main menu, select View ▶ Preference Sets...

The window shows all the preference sets currently defined in the database.

- 2 Right-click the preference set and click **Edit** to rename it:
- 3 In the Name field, type the new name over the old name.
- 4 Click OK.
- 5 Click Save.
- To delete a saved preference set:

**Note** • If you do not have sufficient permissions, you can only delete preference sets owned by you.

1 From the main menu, select View ▶ Preference Sets...

The window shows all the preference sets currently defined in the database.

2 Click the preference set to remove and press the **Delete** key on your keyboard.

Or

Right-click the preference set to remove, then click **Delete**:

3 Click Save.

The preference set is removed from the database.

# Sorting and Rearranging Table Data

Most screens that show data in a grid format permit you to reorder the data by any of the columns in the table, and to rearrange the columns.

#### To rearrange columns in a table:

• Drag and drop each column header to the preferred location in the table.

#### To change the sort order of the data in a table:

Click the column header for the data item to sort by. The column header will change colors when you roll your cursor over it, as shown below.

C Alerts and Events				<b>□ X</b>
Triggers Alert Escalations	Events			
Search events	×	 		
Event Name	<u> </u>	Enabled	Log	
S Adaptive	43			Â
Adaptive Any Off		 •	•	
Adaptive Any On		 ✓	•	
Adaptive Cycle Changed		 •	•	
Adaptive Cycle Off		 •	•	
Adaptive Cycle On		 •	•	
Adaptive Offset Changed		 •	•	
Adaptive Offset Off		 <b>v</b>	•	
Adaptive Offset On		 •	•	
Adaptive Split 1 Changed		 •	•	
Adaptive Split 10 Changed		 •	•	
Adaptive Split 11 Changed		 •	•	
Adaptive Split 12 Changed		 •	•	
Adaptive Split 13 Changed		 •	•	v

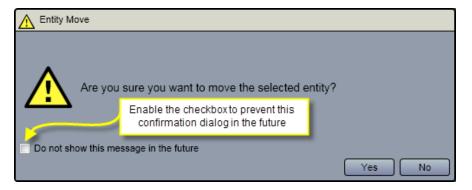
#### To sort the data in the opposite order:

Click the column header a second time.

Turning Confirmation Dialogs On/Off

# **Turning Confirmation Dialogs On/Off**

Some actions in Centracs require confirmation, such as moving an entity within the Entity Tree. When you do one of these actions, Centracs shows a confirmation dialog that asks whether you are sure you want to continue. For example:



Optionally, you can turn off some or all of these confirmation dialogs. When Centracs shows a confirmation dialog that you do not want to see again, click the "Do not show this message in the future" box before you click **Yes** or **No**.

You can also manage your on/off preferences for *all* confirmation dialogs at one time via the Settings option. To do so, follow the procedure below.

**Note** • The confirmation dialog preferences you choose have no effect on confirmation dialogs for any other user of the system.

### To see or change your confirmation dialog preferences:

- 1 From the main menu, select File ▶ Settings...
- 2 Click the Confirmation Dialogs tab on the left side of the window.

C Settings				x
Organization Information	Select the	e confirmation dialogs th	at should NOT be displayed when performing operations:	
Active Directory Settings	Display /	All Hide All		
Licensing SMTP Servers	Hidden	Dialog Key	Caption	
ECPI Tile Server	Thuten	ActionSetDelete	Delete Action Set?	
Autoscope Settings		ActionSetDelete	Delete Action Set:	11
Password Strength		AlertSchemeDelete	Delete Alert Escalation?	18
Confirmation Dialogs				
Action Priorities		ApplicationRolesDelete	Delete Application Role?	
Preempts				
Detector Settings		AssetTypeDelete	Delete Asset Type?	
BlueTOAD™		AssetTypeFieldDelete	Delete Asset Type Field?	
Offline Alert Format Controller Editor Printouts		Assertyperieldbelete	Delete Asset Type field.	
MMS Settings		BingCredentialsDelete	Delete Key?	
Default Comm Parameters				
Doldar Commit and Motore		CentracsClosing	Centracs Closing	1
			Close	

- **3** For each action, check the checkbox if you do not want Centracs to show a confirmation dialog; uncheck the checkbox if you want Centracs to prompt you to confirm the action. To sort this table by the action type, click the Caption header.
- 4 To save your changes, click **Save**.

**IMPORTANT** • Econolite does not recommend that you turn off *all* confirmation dialogs. Some actions justify requiring a confirmation, such as the deletion of an entity. Before you turn off confirmation dialogs for an action, carefully consider the possible ramifications if that action is done accidentally.

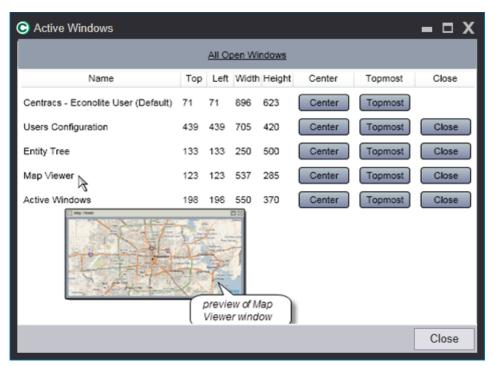
Viewing Active Windows

# **Viewing Active Windows**

To handle all the complexities of transportation management, you can operate the system with many different windows open at the same time and distributed between multiple monitors. To stay organized and avoid confusion, you can use the Active Windows screen to manage your open windows. This screen shows a list of all open windows along with their dimensions (width and height in pixels) and screen coordinate locations. It also gives you options to reorganize them. You can see a small graphical preview of each window for easy identification.

### To access the Active Windows screen:

From the main menu, select Window > Active Windows... The Active Windows screen opens.



- To see a preview of one of the windows (as shown above), roll your mouse cursor over the window name.
- To move a window to the front, click **Topmost** for that window.
- To center a window in relation to the main container window, click **Center**.
- To close a window, click **Close** for that window.

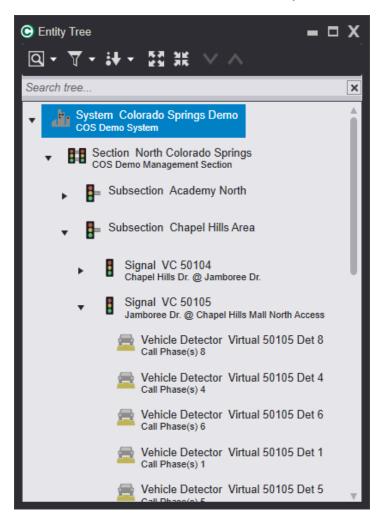
**Note** • Another way to keep your windows organized is to dock them in window containers. For more information about containers, refer to *Selecting a Container Layout* on page 2-2 and *Moving Windows Into and Out of Containers* on page 2-6. If a window is docked in a container, it is not shown on the Active Windows screen as a separate window.

# **Using the Entity Tree**

An entity is any device or other object that is managed by Centracs (such as a CCTV camera or a Signal), or a collection of devices managed by Centracs (such as a System or Group). You can add, change, and monitor entities via the Entity Tree, which is a hierarchical view of all the entities defined in the Centracs system.

### To open the Entity Tree:

From the main menu, select View Frotity Tree.



Entity Types

An entity may be:

- A device
- A collection of devices
- A collection of collections
- A link to a website or program
- An MMS location, manufacturer, vehicle, etc.

#### To navigate the Entity Tree:

Use your mouse to point and click, and use the mouse wheel to scroll up and down in the tree. Right-click to see a menu of available actions.

#### Or

Use the up/down/left/right arrow keys on your keyboard to scroll through the entities in the tree. Note that the down arrow selects the next visible entity, and the right arrow expands the selected grouping to show child entities.

# **Entity Types**

**Note** • Not all of these entity types may be available to you, depending on which Centracs modules are licensed for your system.

### **Basic Entities**

The basic entity types in Centracs are:

- Signal a controller that manages traffic at one intersection.
- Vehicle Detector a device that detects the presence of a vehicle, such as a loop detector.
- CCTV a Closed-Circuit Television video monitoring system that broadcasts to one or more specific monitors.
- **DMS** a Dynamic Message Sign which can display messages to motorists.
- DCS an Autoscope camera, an RTMS device, or a BlueTOAD<sup>™</sup> Data Collection Station used to detect vehicles; it compiles data to calculate current speeds and other relevant measurements for sections of road.
- Link Pair (Travel Time) a section of road between two BlueTOAD Data Collection Stations.

### **Entity Collections**

To better organize and control entities that are logically related, you can group them together. There are several types of entity collections in Centracs:

- **System** the highest level of entity collection; you must define at least one System.
- Section a sub-level of entity collection, usually used for a string of consecutive signals (and their associated devices) along a traffic corridor.
- **Subsection** a subset of the signals/devices included in the parent Section.
- Group a sub-grouping of entities below the System level or Region level; groups are separate from the Section/Subsection hierarchy.
- Link (LOS) a collection of vehicle detectors (often loop detectors) that are associated with consecutive intersections; a Link offers a convenient way to monitor and analyze the data for these detectors collectively.
- Region a collection of MMS Locations; see MMS Entities on page 3-4.

You can send actions such as "Set Time" and "Time Broadcast" to all entities in a System, Section, Subsystem, or Group at the same time.

### Shortcut Entities

Two types of entities offer convenient shortcuts to other applications directly from the Entity Tree:

- Aries a shortcut to launch the *Aries* executable.
- URL a shortcut to an internet address or to an executable program; for more information about URL entities, refer to *Adding Shortcuts to the Tools Menu* on page 2-14.

#### • MMS Entities

### **MMS** Entities

If your system is licensed for Centracs MMS (Maintenance Management System) for asset management, these entity types are also available:

- CCTV Location
- Count Station
- DMS Location
- Flashing Beacon
- HAR (Highway Advisory Radio)
- Intersection
- Lighted Crosswalk
- Location (generic)
- Manufacturer
- Ramp Meter
- Region
- Repair Depot
- RWIS (Road Weather Information System)
- Signalized Intersection
- Vehicle
- Warehouse

For more information about MMS, refer to Chapter 19, *Managing Assets Using MMS*.

### **Entity Relationships**

The table below shows the hierarchical rules that are obeyed when you add entities to the tree. The entity types are shown in alphabetical order:

lcon	Entity Name	Parent	Children
\$	Aries	System, Group, Section, Subsection, or Signal	n/a
Ĵ	CCTV	System, Region, or Group	n/a
	CCTV Location (MMS)	Region, Group, Section, Subsection, System	CCTV, URL

Entity Relationships •

lcon	Entity Name	Parent	Children
S.	Count Station (MMS)	Region, Group, Section, Subsection, System	CCTV, URL
8	DCS (Autoscope)	System or Group (see Note below)	Vehicle Detector
<del>ڳ</del> و	DCS (BlueTOAD)	Group (see Note below)	n/a
1	DCS (RTMS)	System, Group, Section, or Subsection	Vehicle Detector
	DMS	System, Region, or Group	n/a
	DMS Location (MMS)	Region, Group, Section, Subsection, System	DMS, URL
	Flashing Beacon (MMS)	Region, Group, Section, Subsection, System	URL
<b>*</b>	Group	System, Region, or Group	Aries, CCTV, CCTV Location, Count Station, DCS, DMS, DMS Location, Flashing Beacon, Group, HAR, Intersection, Level of Service Link, Link Pair, Lighted Crosswalk, Manufacturer, Ramp Meter, Repair Depot, RTMS, RWIS, Section, Signal, Signalized Intersection, URL, Vehicle, Vehicle Detector, Warehouse
1	HAR (MMS)	Region, Group, Section, Subsection, System	URL
-	Intersection (MMS)	Region, Group, Section, Subsection, System	CCTV, DMS, Signal, URL
	Lighted Crosswalk (MMS)	Region, Group, Section, Subsection, System	URL
<b>R</b>	Link Pair	Group (see Note below)	n/a
	Location (MMS)	Region, Group, Section, Subsection, System	URL

### Using the Entity Tree

Entity Relationships

lcon	Entity Name	Parent	Children
<b>N</b>	LOS Link	System, Section, Subsection, or Group	n/a
Ě	Manufacturer (MMS)	Region, Group, Section, Subsection, System	URL
5	Ramp Meter (MMS)	Region, Group, Section, Subsection, System	URL
	Region (MMS)	System or Region	CCTV, CCTV Location, Count Station, DMS, DMS Location, Flashing Beacon, Group, HAR, Intersection, Lighted Crosswalk, Manufacturer, Ramp Meter, Region, Repair Depot, RWIS, Signal, Signalized Intersection, Vehicle, Warehouse, URL
	Repair Depot (MMS)	Region, Group, Section, Subsection, System	URL
S.	Route (BlueTOAD)	Group (see Note below)	n/a
- 	RWIS (MMS)	Region, Group, Section, Subsection, System	URL
	Section	System or Group	Aries, CCTV Location, Count Station, DMS Location, Flashing Beacon, HAR, Intersection, Level of Service Link, Lighted Crosswalk, Ramp Meter, RTMS, RWIS, Signal, Subsection, Signalized Intersection, URL, Vehicle Detector
3	Signal	System, Section, Subsection, Region, or Group	Vehicle Detector, Aries
#	Signalized Intersection (MMS)	Region, Group, Section, Subsection, System	CCTV, DMS, Signal, URL
	Subsection	Section	Aries, CCTV Location, Count Station, DMS Location, Flashing Beacon, HAR, Intersection, Level of Service Link, Lighted Crosswalk, Ramp Meter, RTMS, RWIS, Signal, Signalized Intersection, URL, Vehicle Detector

Entity Relationships •

lcon	Entity Name	Parent	Children
	System	n/a	Aries, CCTV, CCTV Location, Count Station, DMS, DMS Location, Flashing Beacon, Group, HAR, Intersection, Level of Service Link, Lighted Crosswalk, Manufacturer, Ramp Meter, Region, Repair Depot, RTMS, RWIS, Section, Signal, Signalized Intersection, URL, Vehicle, Warehouse
	URL	System, Section, Subsection, Group, or any MMS Location type	n/a
4	Vehicle (MMS)	Region, Group, Section, Subsection, System	URL
2	Vehicle Detector	System, Section, Subsection, Group, or Signal (see Note below)	n/a
	Warehouse (MMS)	Region, Group, Section, Subsection, System	URL

**Note** • Vehicle Detectors, DCS entities, Routes, and Link Pairs are not added to the tree in the same way as other entity types. For details, refer to *Entity Configuration - Vehicle Detectors* on page 3-48, *Configuring & Deleting Autoscope Entities* on page 17-14, and *Configuring BlueTOAD Entities* on page 14-9.

Adding Entities via the Entity Tree

# Adding Entities via the Entity Tree

Centracs has a predefined hierarchy for entities in the tree, best described as a set of parent and child nodes. When you add new entities, there are hierarchical rules that dictate which entity types are permitted to be parents or children to which other entity types. The top level of the hierarchy is the System; you must define all other entity types under a System (either directly, or in Groups, Sections, or Subsections).

If necessary, you can have multiple trunks in the Entity Tree; that is, you can have multiple Systems at the top level of the tree. For most installations, one System is sufficient; but multiple Systems may be useful in some instances, such as for a contracted company that manages systems for multiple agencies.

For instructions on how to add entities to the Entity Tree, refer to the appropriate page:

Entity Type	Refer to instructions on
System	page 3-21
Section or Subsection	page 3-22
Group	page 3-23
DMS	page 3-27
Signal	page 3-36
Vehicle Detector	page 3-48
Link	page 3-54
BlueTOAD Data Collection Station (DCS)	page 14-9
BlueTOAD Link Pair	page 14-9
Autoscope Data Collection Station (DCMS module)	page 17-14
RTMS device (DCMS module)	page 17-9
CCTV	page 3-65
URL	page 3-69
Aries	page 3-70
MMS entities (Region, CCTV Location, Count Station, DMS Location, Flashing Beacon, HAR, Intersection, Lighted Crosswalk, Location, Manufacturer, Ramp Meter, Repair Depot, RWIS, Signalized Intersection, Vehicle, Warehouse)	page 19-41

For more information about each of these types, refer to *Entity Types* on page 3-2.

# **Copying an Entity to Multiple Groups**

If it is necessary to put an entity in more than one Group or Region, you can add a virtual copy of it in the Entity Tree. In this case, Centracs does not actually add a second instance of the entity — rather, there is one instance of the entity with multiple references to it.

### To add a virtual copy of an entity in a different Group:

• While you hold the **Ctrl** key, drag and drop the entity onto the new Group.

Any entity that is shown in the Entity Tree with the 🗷 symbol is a copy. For example:

<b>••••</b> ]	
Original entity	Entity copy

Any future changes made to either copy will also change the other.

If you subsequently remove an entity that has multiple copies in the tree, you are given an option to remove only the copy you selected, or to remove the original instance of the entity *and* all virtual copies of it.

# **Editing Entity Properties**

After an entity has been added, you can easily change many of its properties at any time.

### To edit the properties of an existing entity:

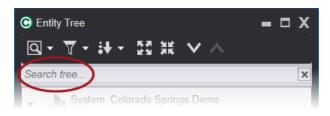
- 1 From the Entity Tree, right-click the entity to change and select **Edit Properties**. The Entity Configuration window opens. The fields shown on this window depend on the type of entity you are editing. For details about how to configure each entity type, refer to *Adding Entities via the Entity Tree* on page 3-8.
- 2 Make your modifications.
- 3 When all changes have been made, click **Apply** or **OK** on the Entity Configuration window. (**Apply** saves your changes and keeps the window open; **OK** saves your changes and closes the window.)

**Note** • To see or change the properties for more than one entity, it is not necessary to open and close the Entity Properties window for each entity — with the window open, simply click a different entity in the tree to populate the window with the properties for that entity. (If you make changes to the properties for an entity, you must first save or discard the changes before you can switch to a different entity.)

• Searching the Entity Tree

# Searching the Entity Tree

If you have a large number of entities in your system, you can use the "Search tree" option to quickly find a specific entity or set of entities.



### To search the Entity Tree:

- 1 Put your cursor in the "Search tree" box near the top of the Entity Tree.
- 2 Type one or more characters of the name, description, or type of the entity to find. It is not case-sensitive. For example, to show only CCTV entities in the tree, type "cctv". To show only signals, type "signal" or the type of signal, such as "W4". As you type, the system filters out any entities whose name, description, and type do not contain the characters you entered.

### Entity Search Tips

Wildcards

- To perform a single character wildcard search, use the ? symbol.
- To perform a multiple character wildcard search, use the \* symbol.

#### Examples:

- to search for text or test, you can use the search term: te?t
- to search for test, tests, or tester, you can use the search term: test\*

### **Boolean Operators**

Multiple terms can be combined together with Boolean operators (AND, OR, NOT) to form a more complex query. The operator must be entered in upper case.

- The AND operator finds items containing both terms.
   Example: University AND Park (finds items containing both words)
- The NOT operator excludes items containing the term after NOT.
   Example: University NOT Park (finds items containing University but not Park)
- The OR operator finds items containing either of the terms. (If an operator is not specified, OR is the default operator.)
   Example: University OR Park (finds items containing either word)

Customizing the Entity Tree View •

**Quoted Phrases** 

A phrase is a group of words surrounded by double quotes.

Example: "Westbound Lane"

#### **Special Characters**

When using any of the following special characters as part of the search criteria, enter  $\$  before the character:

+ - & | ! ( ) { } [ ] ^ " ~ \* ? : \

**Example**: to find (1+1):2, use the query: (1+1) : 2

**Fuzzy Searches** 

Use the tilde (~) symbol at the end of a single word.

**Example**: to search for a term similar in spelling to *roam*, you can use the fuzzy search roam~

This finds terms like *foam* and *roams*.

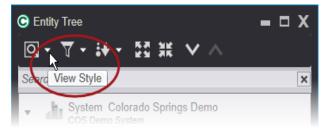
# **Customizing the Entity Tree View**

You can use the icons in the toolbar at the top of the Entity Tree window to customize your view of the Entity Tree.

**Note** • If the current width of your Entity Tree window is too narrow, some of the toolbar icons may be hidden from view. To show the hidden icons, stretch the window or click the small white down arrow on the right end of the toolbar.

### To change the view style of the Entity Tree:

1 To see your choices of how entities can be shown in the tree, click the white down arrow to the right of the View Style icon.



2 Click a view style, such as Large, Large–name only, Large with Status, Single Line, Single Line with Status, or Single Line–name only. The "with Status" styles show a colored indicator for each device to show the current status of the device (for the meaning of each color, hold the mouse pointer over a colored indicator).

• Customizing the Entity Tree View

The tree is immediately changed to use the selected view style (in this case, Single Line with Status):

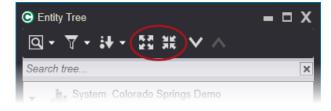
C Entity Tree 🗖 🗖	x
√- ∺- ⊠ ж ∨ ∧	
Search tree	×
Colorado Springs	
<ul> <li>Woodmen Woodmen Rd</li> </ul>	
▼ 👔 Woodmen-East	
🔻 🚦 Woodmen @ N Union 🔘	
📑 WB Woodmen @ N Union 1 Westbound 1	
EB Woodmen @ N Union 1 Eastbound 1	
2 WB Woodmen @ N Union 2 Westbound 2	
📑 EB Woodmen @ N Union 2 Eastbound 2	
🕨 🚦 Woodmen @ N Academy Woodmen Rd @ N Academy Blvd 🔾	
Woodmen @ IH25 W West frontage of I-25 O	
🚦 Woodmen @ Rangewood 🔘	
🚦 Woodmen @ Austin Bluffs Woodmen Rd @ Austin Bluffs Pkwy 🔴	
Woodmen-East-EB	
▼ 🚦 Woodmen-West	
🕨 🚦 Woodmen @ Chapel Woodmen Rd @ Chapel Ln 🔘	
Woodmen @ Rockrimmon	
Woodmen @ Powers N Powers Blvd O	
Woodmen-East-WB	
V M Brianata Brianata Blvd	

### To expand or collapse the Entity Tree:

Click the Expand All icon to show all entities in all levels of the tree.

Or

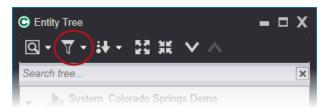
 Click the Collapse All icon to hide all child entities under their parent entities in the tree.



Customizing the Entity Tree View •

#### To filter the Entity Tree:

**1** Click the funnel icon:

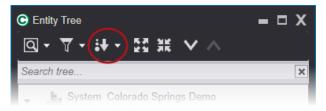


A dropdown list shows you the entity types you can filter (System, CCTV, DMS, etc.).

2 Select the types that you want to show in the Entity Tree view, and leave all others unchecked. To show all entity types, leave all types unchecked.

### To sort the Entity Tree:

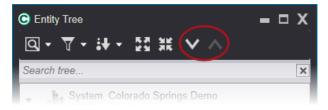
1 Click the white down arrow to the right of the Sorting/Ordering icon to see your choices of how entities can be ordered in the tree.



- User-positioned Sort the entities manually.
- Name Sort the entities alphabetically by their user-specified names.
- **Description** Sort the entities alphabetically by their user-specified descriptions.
- **Type** Sort the entities by their type (signal, CCTV, URL, etc.).

If you selected "Name", "Description", or "Type", the system immediately reorders the entities for you.

2 If you selected "User-positioned", click an entity and use the up or down arrow to move the entity to the a new position in the tree, one position at a time. Repeat for other entities as necessary.



Printing the Entity Tree

# **Printing the Entity Tree**

### To print the Entity Tree:

- 1 From the main menu, select **Reports** ▶ Entity Hierarchy. This report depicts the relationships between all entities in the Entity Tree.
- 2 When the report opens, click the  $\blacksquare$  boxes to expand the groupings.
- 3 To see how the report will look when printed, click the Print Layout icon.
- 4 If necessary, click the Page Setup icon to change the report margins, orientation, or paper size.
- **5** To select a printer and print the report, click the Print icon.

For more information, refer to *Generating Reports* on page 10-1.

# **Adding Notes to Entities**

You can add notes of any type to your entities.

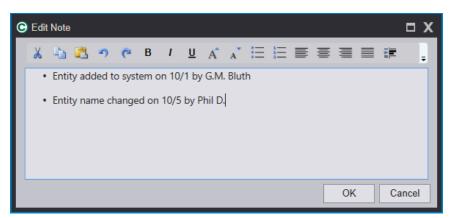
#### To add a note to an entity:

- 1 To access the Notes window, use any of these methods:
  - From the main menu, select View > Notes.
  - Right-click an entity in the Entity Tree and select the **Notes** option.
  - Click 🔲 to the right of the Notes field on the Entity Configuration window.
  - Right-click an entity on the map and select the **Notes** option.
  - Right-click an entity in the Favorites window and select the **Notes** option.
- 2 If the entity is not already selected in the dropdown list, click the black down arrow to expand the dropdown list and select the correct entity.

O Notes	= ¤ X
View and add notes to entities	
Entity 24746 North Union × + Add Edit × Delete	
Timestamp User Note click ellipse to select entity	

Adding Notes to Entities

3 Click Add... The Edit Note window opens.

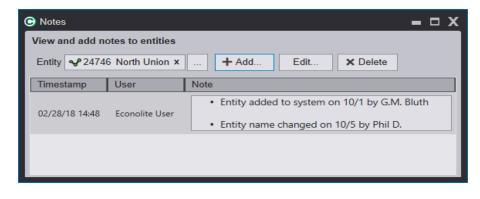


4 Use the available white space on the Edit Note window to enter the content of your note. Standard formatting tools are available in the toolbar to set the style, type size, alignment, and indentation of your note.

The built-in spellchecker will show a red underline below any words it does not understand. You can right-click the word to see recommended corrections for the word, or to tell the spellchecker to ignore the word.

**5** To save the note, click **OK**.

Your new note is shown in the Notes window, along with your user name (as the creator of the note) and the date and time the note was added. You can edit or delete the note at any time.



**Note** • To edit or delete an existing note, click the note, then click Edit or Delete. Any user can edit or delete an existing note, regardless of who added it. When edited, notes keep the timestamp from when they were originally added, and the user name of their original creator.

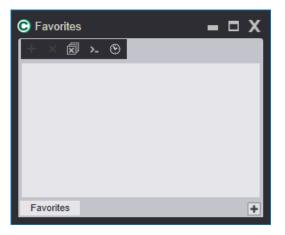
Bookmarking Your Favorite Entities

# **Bookmarking Your Favorite Entities**

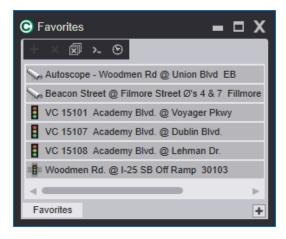
For fast and easy access to the Systems, Groups, Sections, Signals, DMS devices, etc. that you use most frequently, you can use Favorites to bookmark them. You can create multiple Favorites lists, based on any grouping criteria you choose. For example, you can add a Favorites list for signals, another for DMS devices, and another for CCTV devices.

#### To add entities to your Favorites window:

1 From the main menu, select **View ▶ Favorites**.



- 2 Click the 🖶 option in the toolbar. The Entity Selection window opens.
- 3 Select the entity or entities to add to your Favorites and click OK. For details, refer to Using the Entity Selection Window on page 3-18.



**Note** • As a shortcut, you can also drag and drop entities from the Entity Tree.

Bookmarking Your Favorite Entities •

#### To perform actions on your Favorite entities:

- 1 From the main menu, select **View** ▶ **Favorites**.
- 2 To perform an action on one entity, click an entity; to perform an action on multiple entities at the same time, hold the **Ctrl** or **Shift** key while you select the entities.
- 3 Click:
  - the control option in the toolbar to add a manual command for that entity. For more information, refer to *Issuing Manual Commands* on page 7-8.

Or

 the Solution of the toolbar to schedule one or more actions on that entity. For more information, refer to Using the Scheduler on page 7-11.

**Note** • If these two options are not shown in the toolbar, they are not valid options for the selected entity. For example, you cannot add commands for a URL entity.

Also, most of the options that are available to you when you right-click an entity in the Entity Tree (for example, Show Status, Zoom to Parent, and Notes) are also available to you when you right-click an entity in the Favorites window.

#### To add more Favorites tabs:

1 Click in the bottom-right corner of the window.

The application adds a new tab with a name of "Favorites".

- 2 Right-click the tab name.
- 3 Click Rename.
- 4 Enter a meaningful name for the new tab and click **U**.

### To delete one or more entities from your Favorites:

Click the entity to remove (or to select multiple entities, hold down the Ctrl key while you click), then click the option.

Or

• To delete all entities from the Favorites list, click the 🔳 option.

**Note** • This does *not* delete the entities from the database — it only removes them from your Favorites list.

### To delete a tab from the Favorites window:

On the tab to remove, click

• Using the Entity Selection Window

# **Using the Entity Selection Window**

There are many situations in Centracs when you must specify one or more entities (for example, when you bookmark your "favorite" entities, or add a manual command or schedule entry). To do so, you use the Entity Selection window:

C Entity Selection		<b>□ X</b>
Use the search and filter options to narrow the list of available entities. Search Expand All Entities Select Expanded Entities * Select and highlight an entity before using Select Expanded Entities * Colorado Springs Demo	Types     Sub-Types       ✓     Autoscope       ✓     BlueTOAD       ✓     DMS Location       ✓     Flashing Beacon       Entity Name     Entity Description	Å 0 V
<ul> <li>Autoscope Cameras</li> <li>Blue TOAD<sup>TM</sup></li> <li>Colorado Springs Maintenance</li> <li>COS School Flashers</li> <li>COS Signal Shop</li> <li>COS Signalized Intersections</li> <li>COS Vehicles</li> <li>GB 1</li> <li>North Colorado Springs</li> <li>Recycle</li> <li>RTMS Simulators</li> </ul>	Autoscope - Woodm EB	
		OK Cancel

The left side of the window shows a list of defined entities. Because the list of entities can be very large, you can use the search and filter options at the top to narrow down the list. For example, if the entity you want is a Signal, you can change the Types checkboxes so that only the Signal checkbox is enabled (*as shown below*). You can also use the Search field to enter the first few characters of the entity name, description, street name, type, or subtype (*as shown below*). The list of available entities is immediately limited to those that match the criteria you specified.

**Note** • For more details on how to use the Search field, including information about wildcards, fuzzy searches, Boolean operators, and more, refer to *Entity Search Tips* on page 3-10.

C Entity Selection		<b>□ X</b>
Use the search and filter options to narrow the list of available entities.          Search       Academy       Expand All Entities         Select       Expanded Entities         * Select and highlight an entity before using Select Expanded Entities	Types     Sub-Types       Scrap     ✓ ASC/2 NTCIP       Section     ✓ ASC/3       ✓ Signal     ✓ Cobalt       Signalized Intersection     ✓ Eanle FPAC       Entity Name     Entity Description	A 0
North Colorado Springs     Academy North     VC 15108     VC 15107	Colorado Springs De COS Demo System	
		OK Cancel

Under Types, if a device checkbox (such as Signal, DMS, or Autoscope) is checked, you can also select one or more device sub-types from the Sub-Types list. For all other entity types, the Sub-Types list is empty.

After you find the entity, move it to the "Selected Entities" side of the window (refer to *Selecting and Moving Entities within the Window* on page 3-20). Depending on the function you are performing, you may be able to move more than one entity to the "Selected Entities" list; for example, when you select entities for the Favorites window, there is no limit to the number of entities you can move to the "Selected Entities" list, but when you create a manual command to send a new message to a DMS sign, you can select one DMS entity only.

The sample window below finds all entities of any type that have a Description that begins with "Academy". In this example, one of the matching entities has been moved to the "Selected Entities" list.

C Entity Selection		<b>□ X</b>
Use the search and filter options to narrow the list of available entities. Search Academy Expand All Entities Select Expanded Entities * Select and highlight an entity before using Select Expanded Entities * Colorado Springs Demo	Types       Sub-Types         Scrap       Image: ASC/2 NTCIP         Section       Image: ASC/3         Signal       Image: Cobalt         Signalized Intersection       Image: Cobalt         Entity Name       Entity Description         Academy North       VC 15108         VC 15107       Academy Blvd. @ Lehman Dr.         VC 15107       Academy Blvd. @ Dublin Blvd.	
	ОК	Cancel

**Note** • Entities are selected from a tree just like the Entity Tree Viewer. As shown above, multiple entries can be selected using the Ctrl and Shift keys and the selected entries appear on the right side of the window.

Selecting and Moving Entities within the Window

## Selecting and Moving Entities within the Window

To move a single selected entity from one list to the other:

double-click it

Or

press the Space bar

### To move multiple selected entities:

press the Space bar

Or

press the Insert key (moves entities from left to right)

Or

press the **Delete** key (moves entities from right to left)

Or

press the Backspace key (moves entities from right to left)

### To remove all entities from the "Selected Entities" list:

click the Clear button at the bottom of the window

### To select all entities in a list:

press Ctrl-A

### To select a consecutive group of entities:

click the first entity you want, press and hold the Shift key, then click the last entity you want

### To select a non-consecutive group of entities:

> press and hold the **Ctrl** key, then click each entity you want to select

# **Entity Configuration**

## Entity Configuration - Systems

### To add a new system to the Entity Tree:

- **1** Right-click anywhere in the Entity Tree.
- 2 Select Add new System. The Entity Configuration window opens.

C Entity Config	uration 🔳	⊐ x
Name/Identifier	Houston	
Description		
Jurisdiction	General	-
Notes	0 notes	
	OK Cancel Ap	ply

**Note** • Because the fields on the Entity Configuration window are configurable, your screen may look different than the sample shown here. For details, refer to *Using the Type and Field Definitions Window* on page 19-5.

- 3 Enter a unique name for the System, and optionally, a description. (You can enter any text or numbers for the Name/Identifier and Description fields, and you can change them at any time.)
- 4 Select the Jurisdiction to which the new System will belong. For more information, refer to *Defining Jurisdictions* on page 20-12.
- **5** Optionally, to add notes for this entity, click to the right of the Notes field. For more information, refer to *Adding Notes to Entities* on page **3-14**.
- 6 Click OK.

The new System is shown in the Entity Tree. You can now add other entities to the new System.

Entity Configuration - Sections and Subsections

## Entity Configuration - Sections and Subsections

#### To add a new Section or Subsection:

- 1 Determine the parent for the new entity to be added. The parent of a Section must be a System or Group; the parent of a Subsection must be a Section.
- 2 Right-click the parent entity in the tree.
- 3 From the pop-up menu, select Add Entity ▶ Section or Add Entity ▶ Subsection. The Entity Configuration window opens.

Entity Configuration	$\Box \boxtimes$
Name/Identifier	Woodmen West
Description	Woodmen Rd W of I-25
Signal Coord Monitoring	Woodmen 🗸 🛄
Jurisdiction	General 🔹
Notes	0 notes
	OK Cancel Apply

**Note** • Because the fields on the Entity Configuration window are configurable, your screen may look different than the sample shown here. For details, refer to *Using the Type and Field Definitions Window* on page 19-5.

- 4 Enter a name for the new entity, and optionally, a description. (You can enter any text or numbers for the Name/Identifier and Description fields, and you can change them at any time.)
- In the Signal Coord Monitoring field, select an option from the dropdown list, or click
   to add a new one. For more information, refer to *Signal Collection Coordination Monitoring* on page 3-24.
- 6 Select the Jurisdiction to which the new entity will belong. For more information, refer to *Defining Jurisdictions* on page 20-12.
- 7 Optionally, to add notes for this entity, click to the right of the Notes field. For more information, refer to *Adding Notes to Entities* on page 3-14.
- 8 Click **OK**. The new entity is shown in the Entity Tree.

You can use your mouse to drag and drop child entities (signals, etc.) into the new entity you added (drop them directly on the Section/Subsection name in the tree), or you can right-click the Section/Subsection name and add a new entity.

**Note** • To move an entity out of a Section/Subsection, drag and drop it onto a different parent entity (such as another Section or Subsection).

Entity Configuration - Groups

## Entity Configuration - Groups

### To add a new Group:

- 1 Determine the parent (i.e., a System or another Group) for the new Group to be added.
- 2 Right-click the parent entity in the tree.
- 3 From the pop-up menu, select Add Entity ▶ Group. The Entity Configuration window opens.

Entity Configuration	
Name/Identifier	Convention Center Signals
Description	signals in front of convention center
Signal Coord Monitoring	Special Event Settings 🔹 🗸
Jurisdiction	General 🔹
Notes	0 notes
	OK Cancel Apply

**Note** • Because the fields on the Entity Configuration window are configurable, your screen may look different than the sample shown here. For details, refer to *Using the Type and Field Definitions Window* on page 19-5.

- 4 Enter a name for the Group, and optionally, a description. (You can enter any text or numbers for the Name/Identifier and Description fields, and you can change them at any time.)
- In the Signal Coord Monitoring field, select an option from the dropdown list, or click
   to add a new one. For more information, refer to *Signal Collection Coordination Monitoring* on page 3-24.
- 6 Select the Jurisdiction to which the new Group will belong. For more information, refer to *Defining Jurisdictions* on page 20-12.
- 7 Optionally, to add notes for this entity, click to the right of the Notes field. For more information, refer to *Adding Notes to Entities* on page 3-14.
- 8 Click OK.

The new Group is shown in the Entity Tree.

You can use your mouse to drag and drop child entities (Signals, etc.) into the new group you added (drop them directly on the Group name in the tree), or you can rightclick the Group name and add a new entity.

**Note** • To move an entity out of a Group, drag and drop it onto a different parent entity (such as another Group or a System).

Signal Collection Coordination Monitoring

## Signal Collection Coordination Monitoring

After you schedule a collection of signals to run a specific pattern at a given time, it is assumed without verification that the signals are continuing to run the correct coordination plan, but this may not always be the case. To solve this problem, you can use the Signal Collection Coordination Monitor as a verification tool to make sure that the signals are running the correct coordination plan (or if Traffic Responsive is enabled, the TR-based coordination plan). If one or more of the signals in a Group, Section, or Subsection is not running the correct coordination plan, the Signal Coordination Monitor can notify you immediately, and optionally, send a new pattern.

**Note** • For the sake of brevity, the term "collection" is used herein to refer to a Section, Subsection, or Group.

### Configuring Signal Coordination Monitoring

### To configure the Signal Collection Coordination Monitor:

1 On the Entity Configuration window for a collection, click to the right of the Signal Coord Monitoring field. The Signal Collection Coordination Monitoring Settings window opens.

Signal Collection Coordination Monitoring Settings	
Named settings that can be shared among all signal collections (e.g. Sections)	
Time to Warning (mins) Number of minutes before raising a warning event.	
Time to Error (mins) Number of minutes, relative to when the problem occurred, before a failure error is registered.	
Set Pattern on Error Once an error state is reached, command the section to run a different pattern or local TOD.	
O Pattern Offset Free Flash Local	
C	lose

- 2 Click **New...** and enter a name for this group of settings, then click **OK**.
- 3 For when a pattern mismatch is found, set the "Time to Warning" field to the number of minutes that Centracs will wait before it writes a warning event to the event log for the collection (or leave it blank if you do not want to write warning events to the log). (You can run the System Events report to see these logged events.)
- 4 For when a pattern mismatch is found, set the "Time to Error" field to the number of minutes that Centracs will wait before it writes an error event to the event log for the collection (or leave it blank if you do not want to write error events to the log). (You can run the System Events report to see these logged events.)

5 To cause Centracs to send a different pattern when the "Time to Error" time is reached, turn on the "Set Pattern on Error" checkbox. Enter the pattern number to send, or specify that the signals should Flash, run Free, or run the Local TOD (time-of-day) schedule configured on the controller. Note that when an error occurs, Centracs sends the new pattern to the entire collection of signals; even if the mismatched signal does not respond, the rest of the collection is commanded to the new pattern.

E	Signal Collection Coordination Monitoring Settings	$\mathbb{N}$		
	Special Event Settings   New   New  Named settings that can be shared among all signal collections (e.g. Sections)			
	Time to Warning (mins) 4 Number of minutes before raising a warning event.			
	Time to Error (mins) 7 Number of minutes, relative to when the problem occurred, before a failure error is registered.			
	Set Pattern on Error Once an error state is reached, command the section to run a different pattern or local TOD.			
	O Pattern O Free O Flash O Local			
	Clos	e		

### 6 Click Save.

This named group of settings can now be assigned to any collection (on the Entity Configuration window).

**Note** • You can also use the Signal Collection Coordination Monitoring Settings window to rename and delete saved groups of settings.

### To configure alerts (optional):

- 1 On the Events tab, verify that the events below are enabled and/or logged. For details, refer to *Events* on page 4-2.
  - Collection Pattern Monitor Error ON
  - Collection Pattern Monitor Error OFF
  - Collection Pattern Monitor Recovered
  - Collection Pattern Monitor Warning
- 2 Add triggers for one or more of these events. For details, refer to *Using Triggers* on page 4-25. In the triggers, select the collection (Section/Subsection/Group) as the entity, not the signals themselves.

### How the Signal Coordination Monitor Works

Note that the Signal Collection Coordination Monitor does not verify that all signals in the collection are running the *same* pattern; rather, it verifies that all signals are running the *correct* pattern. For example, if you have commanded a Section to run Pattern 1, the Coordination Monitor will continuously verify that all the signals in that Section are still

Signal Collection Coordination Monitoring

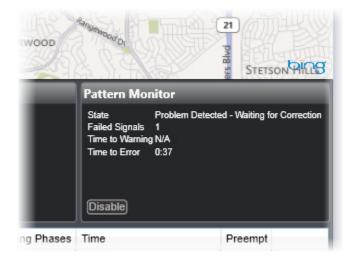
running Pattern 1; but if you later command one signal in that Section to run Pattern 2, the Coordination Monitor will now continuously verify that the one signal is running Pattern 2 and that all other signals in that Section are still running Pattern 1.

Using the sample Coordination Monitoring Settings shown above, if a signal in the collection is not running the correct pattern:

- Centracs waits 4 minutes for the problem to correct itself. If, after 4 minutes, the signal is still not running the correct pattern, Centracs writes the "Collection Pattern Monitor Warning" event to the event log.
- 2 If the signal changes to the correct pattern at this point, Centracs writes the "Collection Pattern Monitor Recovered" event to the event log.
- **3** If, after another 3 minutes have passed, the signal is still not running the correct pattern, Centracs writes the "Collection Pattern Monitor Error ON" event to the event log.
- 4 Once the signal is running the correct pattern as the other signals in the collection (e.g., either because Centracs automatically sent a new pattern, or because a technician corrected the problem), Centracs writes the "Collection Pattern Monitor Error - OFF" and "Collection Pattern Monitor Recovered" events to the event log.

If you configured triggers for these events (described above), Centracs issues alerts. Without any triggers, you can still see details about these events in the System Events report (page 10-51).

You can also look at the Pattern Monitor section of the Status display (page 6-10) for more details:



This example indicates that one signal in the collection is not running the correct pattern. When each of the "Time to Warning" and "Time to Error" timers counts down to zero, Centracs writes the appropriate event to the log. In this example, the "Time to Warning" timer has already reached zero, and Centracs has already written the Warning event. If the problem is not corrected within the next 37 seconds, Centracs will write the Error event. You can see these events in the System Events report (page 10-51).

To disable or enable pattern monitoring for a collection, click the Disable/Enable toggle button on the Status display.

## Entity Configuration - DMS

Use the Entity Configuration window to add or change the parameters necessary to deploy and operate dynamic message signs (DMS) in Centracs.

### To add a new DMS:

- 1 Determine the parent (a System or a Group) for the new DMS to be added.
- 2 Right-click the parent entity in the Entity Tree.
- 3 From the pop-up menu, select Add Entity ► DMS. The Entity Configuration window opens.

Entity Configuration		
Name/Identifier	1	
Description		_
Sign Type	Variable Message Sign	
Communications	Undefined	
SNMP Community	administrator	✓ Use Default
Mode	Online	•
Primary Street		
Secondary Street		
Coordinates		
Jurisdiction	General	
Notes	0 notes	
Notes		····
Sign Specifications	Auto Configure	
Matrix Type	No Data	
Sign Specs	No Data	
MULTI Configuration	No Data	
Messages	Load Messages	
Permanent Messages	Messages: 0	]
Changeable Messages	Messages: 0	
	OK Cano	el Apply

**Note** • Because the fields on the Entity Configuration window are configurable, your screen may look different than the sample shown here. For details, refer to *Using the Type and Field Definitions Window* on page 19-5.

- 4 Enter a unique name for the DMS, and optionally, a description. (You can enter any text or numbers for the Name/Identifier and Description fields, and you can change them at any time.)
- 5 Click to the right of the Communications field. The Device Communication Configuration window opens.

Device Communication 0		
Comm Channel	IP - NTCIP on Device Manager NTCIP	
Destination IP	127.0.0.1	
Destination Port	161	
Serial Drop Address	0	
Primary Poll Rate (msec)	30000	Use Default
Priority Poll Rate (msec)	10000	Use Default
Retries	3	🔽 Use Default
Poll Retries	0	🔽 Use Default
	ОК	Cancel

Use this window to tell Centracs how to communicate with this DMS device. For details about this window, refer to page 3-44.

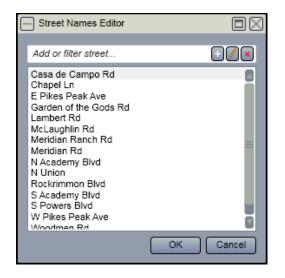
- 6 To override the default access name used in SNMP communications between Centracs and this device, uncheck the Use Default checkbox and enter the SNMP Community name. (The default name is defined in the "DMS SNMP Community Name" Global Setting.)
- 7 In the Mode dropdown, select Online (for full comms), Standby (for comms but no polling), or Offline (for no comms).

In Standby mode, you can send messages and commands to the sign, but because Centracs does not poll the sign for current status information, the DMS Status display will not show the current message or any existing sign-related errors. The Poll button on the DMS Status display is disabled, and the last known status information is displayed.

In Offline mode, all buttons on the DMS Status display are disabled. No commands or messages can be sent to the sign.

8 Optionally, to select the nearest cross-streets for this sign, click to the right of the Primary Street and Secondary Street fields.

The Street Names Editor opens.



If the street for this sign is not in the list, you can add it. For details about how to search the list of streets and add new streets, refer to *Using the Street Names Editor* on page 20-88.

Once you select the cross-streets, the street names are automatically copied to the Description field on the Entity Configuration window (unless you already entered a Description).

To go back to the Entity Configuration window, click **OK**.

- 9 Optionally, to manually enter the latitude and longitude coordinates for the geographical location of this sign, click to the right of the Coordinates field. Or, you can simply drag and drop it onto the map (for more details, refer to step 20). For details about how to use the Coordinates window, refer to page 3-71.
- 10 Select the Jurisdiction to which the new DMS will belong. For more information, refer to *Defining Jurisdictions* on page 20-12.
- **11** Click **Apply**. The new DMS is shown in the Entity Tree.
- 12 Optionally, to add notes for this entity, click to the right of the Notes field. For more information, refer to *Adding Notes to Entities* on page 3-14.
- **13** Click **Auto Configure** to get configuration details (i.e., Sign Type, Matrix type, Sign Specs, and MULTI Configuration) from the sign. This button is enabled only after you have defined the Communications settings (above). A progress bar is shown, then closes when the upload is done.

#### Centracs populates these fields automatically:

Field	Description	
Sign Type	<ul> <li>Variable – With Variable Message Signs (VMS), you can write new messages in Centracs and download them to the temporary memory on the sign.</li> </ul>	
	<ul> <li>Changeable – With Changeable Message Signs (CMS), messages are pre-defined on the sign; you cannot download new messages from Centracs.</li> </ul>	
Matrix Type	The box for this field shows various characteristics for the matrix (such as line height and number of lines), depending on the matrix type for the sign:	
	<ul> <li>Full matrix – The entire display area of the sign is divided into pixels. There are no fixed lines or characters. You can change each pixel independently.</li> </ul>	
	<ul> <li>Line matrix – The display area of the sign is divided into a fixed number of lines. Each line is divided into pixels.</li> <li>There are no fixed characters.</li> </ul>	
	<ul> <li>Character matrix – The display area of the sign is divided into a fixed number of lines and characters. The spacing between characters and the spacing between lines are fixed.</li> </ul>	
	<ul> <li>None – Examples: drum sign, blank-out sign, etc. (not currently supported)</li> </ul>	
Sign Specs	Characteristics of the sign, such as width, height, and beacon type.	
MULTI Configuration	Message characteristics, such as the supported MULTI tags, the default font, and the default justification for messages.	

- 14 If the matrix characteristics (such as line height and number of lines) that were uploaded from the sign are not valid, a \_\_\_\_\_ button is shown to the right of the Matrix Type field. Click the button to open the Matrix Configuration window and correct the invalid value(s) manually. For details about this window, refer to *DMS Matrix Configuration* on page 3-33. (If the \_\_\_\_ button is not shown, Centracs considers all uploaded values to be valid, and you do not need to change them.)
- **15** To see the specifications that were uploaded from the sign or to change the beacon type, click to the right of the Sign Specs field. (The button is enabled only after you have run the Auto Configure process.) The Sign Specifications window opens. For details about this window, refer to *DMS Sign Specifications* on page 3-32.

- 16 To define the default display settings and the supported MULTI tags for the sign, click to the right of the MULTI Configuration field. (The button is enabled only after you have run the Auto Configure process.) The Sign MULTI Configuration window opens. For details about this window, refer to DMS MULTI Configuration on page 3-34.
- 17 To load the messages that are defined on the sign, click Load Messages. Centracs copies the Permanent messages and the Changeable messages from the sign into the Centracs database. A progress bar is shown while Centracs loads the messages. The Entity Configuration window then shows the number of Permanent and/or Changeable messages that have been loaded from the sign. You can load a maximum of 100 Changeable messages and 50 Permanent messages from the sign.
- 18 To see the messages, click to the right of the Permanent Messages and/or Changeable Messages fields. (The button is enabled only after you have run the Load Messages process.) The DMS Messages window opens. For details about this window, refer to *Configuring DMS Messages* on page 9-4.

Entity Configuration	
Name/Identifier	Sign @ Eastwood Transit Center
Description	Eastwood @ Tuffnel
Sign Type	Variable Message Sign
Communications	IP - NTCIP @ 127.0.0.1:161
SNMP Community	administrator 🔽 Use Default
Mode	Online •
Primary Street	Eastwood
Secondary Street	Tuffnel
Coordinates	38.8409331200772, -104.83023657
Jurisdiction	General 🔹
Notes	0 notes
Sign Specifications	Auto Configure
Full Matrix	105 × 27 pixels
Sign Specs	LED, Access: Front, Two beacons
MULTI Configuratio	Default Font: Std, Page Time: 20
Messages	Load Messages
Permanent Messag	es Messages: 13
Changeable Messa	ges Messages: 10
	OK Cancel Apply

- **19** Click **OK**.
- 20 If you did not manually enter the latitude/longitude coordinates for the DMS (described above), then from the main menu, select View ➤ Map or View ➤ Preset Map and zoom in on the location for the device.

Drag and drop the DMS from the Entity Tree onto the appropriate position on the map.

The Map Editor opens so that you can define and configure the map visuals for this device. For details about how to use the Map Editor, refer to *Editing the Map View* on page 5-18.

**To edit the configuration for a DMS:** Refer to *Editing Entity Properties* on page 3-9.

### DMS Sign Specifications

When you configure a DMS entity, if you click in to the right of the Sign Specs field, the Sign Specifications window opens:

Sign Specification	S	
Sign Width (mm) Sign Height (mm)	0	
Display Technology	Other JLED Shuttered Bulb	Flip Disk Fiber Optics
Sign Access	Front	Ψ.
Beacon Type	Two beacons, opposing flashing	· · · · · · · · · · · · · · · · · · ·
		OK Cancel

It contains details about the sign, such as the dimensions of the outer frame of the sign (in millimeters), the type of technology used by the sign, and the beacon type (if any). To get these details from the sign, click **Auto Configure** to the right of the Sign Specifications field on the Entity Configuration window.

Sign Access shows the method to access the interior of the sign:

- Front access
- Rear access
- Walk-in access
- Other

Beacon Type shows the type of beacons on the sign, such as:

- None
- One beacon, strobe light
- Four beacons, synchronized flashing

This window is read-only. Click **OK** or **Cancel** to go back to the Entity Configuration window.

### DMS Matrix Configuration

If the configuration specs that Centracs received from the sign (when you click **Auto Configure** on the Entity Configuration window) are not valid, Centracs gives you the ability to change them manually.

On the Entity Configuration window, if you click to the right of the Matrix Type field, the Matrix Configuration window opens. (The button is shown only if Centracs found an invalid value in the configuration information, such as a sign width greater than 1000 pixels.)

The window shows various characteristics for the matrix, depending on the matrix type for the sign:

Matrix Configuration		$\square$	Matrix Configuration	on 🔲 🖂
Matrix TypeCCharacters per Line2Number of Lines3Character Width (pixels)5Line Height (pixels)9	haracter 1 Matrix Configuration Matrix Type Fi	N L	Matrix Type Matrix Width (pixels) Number of Lines Line Height (pixels)	Line 105 3 9 OK Cancel
Character Matrix Type	Matrix Width (pixels) 10 Matrix Height (pixels) 27	-	Cancel	ine Matrix Type.
	Full Matrix Type		Cancel	

Make changes as needed, then click **OK** to save your changes and go back to the Entity Configuration window.

### DMS MULTI Configuration

When you configure a DMS entity, if you click in the right of the MULTI Configuration field, the Sign MULTI Configuration window opens:

Sign MULTI Configuration		$\Box \boxtimes$
Supported MULTI Tags		
Font	Local Time (24 hour)	Date of Month
Justification Line	Ambient Temperature (°C)	Month of Year
Justification Page	Ambient Temperature (°F)	Year (2 digits)
New Line	Speed (km/h)	Year (4 digits)
New Page	Speed (mi/h)	Local Time (12 hour) + AM/PM
Local Time (12 hour)	Day of Week	Local Time (12 hour) + am/pm
Font	1 Std	rs 96
Quick Message Location	1	
Blank Message Location	Permanent	•
Line Justification	Center •	
Page Justification	Center •	
Page-ON Duration	20 Timings a	are in Tenths
Page-OFF Duration	0 of a Seco	
		OK Cancel

Sign messages are constructed in MULTI (Mark-Up Language for Transportation Information) format. A MULTI string controls which text shows in which area of the sign.

The Supported MULTI Tags section shows the tags supported by the sign. Centracs gets this information from the sign when you click **Auto Configure** on the Entity Configuration window; you cannot change these fields. For details about MULTI tags and syntax, refer to the NTCIP 1203 standard, "Object Definitions for Dynamic Message Signs (DMS)".

On this window, you can configure these settings:

- Quick Message Location Select the position of the "quick" message in the Changeable library, usually 1. This position in the library is used to store a custom message that is created "on the fly" using the Quick Message function.
- Blank Message Location Select the location of the "blank" message. If you choose Permanent or Changeable to indicate that the blank message is in the Permanent library or the Changeable library, use the second dropdown list to select the blank message from that library. If you choose Blank, the second dropdown list is not shown.

These settings are not configurable at this time:

- Font The dropdown list contains the fonts available on the sign. Select the default font. After you select a font, the Characters field to the right shows the number of characters in that font set.
- Line Justification The default horizontal justification for messages: Left, Right, or Center.
- Page Justification The default vertical justification for messages: Top, Bottom, or Center.
- Page-ON Duration The default amount of time to show each page of the message, in tenths of a second.
- Page-OFF Duration The default amount of time to blank the sign between pages of the message, in tenths of a second.

For example, if Page-ON is 50 and Page-OFF is 20, the first page of the message is shown for 5 seconds, then the sign is blank for 2 seconds, then the second page of the message is shown for 5 seconds, then the sign is blank for 2 seconds, and so on.

**Note** • The Default settings are used only in the absence of MULTI tags in the message (for example, a [jpx] tag in the message overrides the default Page Justification setting).

Click **OK** or **Cancel** to go back to the Entity Configuration window.

• Entity Configuration - Signals

## **Entity Configuration - Signals**

Use the Entity Configuration window to add or change the parameters necessary to deploy and operate signals in Centracs.

#### To add a new signal:

- 1 Determine the parent (i.e., a System, Section, Subsection, or Group) for the new signal to be added.
- 2 Right-click the parent entity in the Entity Tree.
- 3 From the pop-up menu, select Add Entity ► Signal. The Entity Configuration window opens.

Entity Configuration		$\Box \boxtimes$
Name/Identifier	1	
Description		
Signal Type	ASC/3	•
Communications	Undefined	
Mode	Online	•
Primary Street		
Secondary Street		
Coordinates		
Primary Poll		•
Secondary Poll		•
Tertiary Poll		•
Main Street Phases		
Side Street Phases		
Detectors	0 system detectors of 0 loaded	
Jurisdiction	General	•
Notes	0 notes	
Enable MOE Logging		_
Preempt Descriptions	0 preemptor descriptions	
Enable Simulation		
	OK Cancel A	pply

**Note** • Because the fields on the Entity Configuration window are configurable, your screen may look different than the sample shown here. For details, refer to *Using the Type and Field Definitions Window* on page 19-5.

- 4 Enter a unique name for the signal, and optionally, a description. (You can enter any text or numbers for the Name/Identifier and Description fields, and you can change them at any time.)
- 5 From the Signal Type dropdown, select the type of the controller.

Entity Configuration - Signals •

6 Click ... to the right of the Communications field to specify the properties for the controller associated with this signal. The Device Communication Configuration window opens.

Device Communication Configuration		
Centracs Local Edit	ion 1 Local Edition 2	
Comm Channel	IP - NTCIP on Device Manage	er NTCIP
Destination IP	127.0.0.1	
Destination Port	501	
Serial Drop Address	0	
Primary Poll Rate (msec)	1000	Use Default
Secondary Poll Rate (msec	30000	Use Default
Tertiary Poll Rate (msec)	0	🔽 Use Default
Priority Poll Rate (msec)	1000	🔽 Use Default
Retries	3	🔽 Use Default
Poll Retries	0	🔽 Use Default
FTP Username:	econolite	Use Default
FTP Password:	*****	Use Default
FTP Password Verify:	administrator	Use Default
SNMP Community Name:	auministrator	
		OK Cancel

Use this window to tell Centracs how to communicate with this controller. For details about this window, refer to page 3-44.

**Note** • For more detailed controller configuration, use the Database Editor or the front panel of the field controller.

- 7 In the Mode dropdown, select Online (for full comms), Standby (for comms but no polling), or Offline (for no comms).
- 8 Optionally, to select the streets controlled by this signal, click lot the right of the Primary Street and Secondary Street fields.

The Street Names Editor opens.

E	Street Names Editor	
	Add or filter street	+
	Casa de Campo Rd Chapel Ln E Pikes Peak Ave Garden of the Gods Rd	0
	Lambert Rd McLaughlin Rd Meridian Ranch Rd Meridian Rd N Academy Blvd	
	N Union Rockrimmon Blvd S Academy Blvd S Powers Blvd W Pikes Peak Ave	
	Woodmen Rd	OK Cancel

If the street for this intersection is not in the list, you can add it. For details about how to search the list of streets and add new streets, refer to *Using the Street Names Editor* on page 20-88.

Once you select the cross-streets, the street names are automatically copied to the Description field on the Entity Configuration window (unless you already entered a Description).

To go back to the Entity Configuration window, click **OK**.

- 9 Optionally, to manually enter the latitude and longitude coordinates for the geographical location of this signal, click to the right of the Coordinates field. Or, you can simply drag and drop it onto the map (for more details, refer to step 18). For details about how to use the Coordinates window, refer to page 3-71.
- **10** From the Primary Poll, Secondary Poll, and Tertiary Poll dropdowns, select the types of polling packets to request from this controller. The items in these lists are defined via the Polling Packet Editor (refer to page 20-50). The Primary Poll field is required. Secondary polling is optional, and is usually used to get volume/occupancy/speed data from the vehicle detectors. Tertiary polling is rarely used.
- 11 Optionally, to select the phase numbers and overlaps associated with each street in this intersection, click in the right of the Main Street Phases and Side Street Phases fields. The Phase Selection window opens.

Phase Selection	
Available Phases	16
Available Overlaps	P
OK Car	icel

Entity Configuration - Signals •

click the phase numbers and overlap letters to select them, then click **OK**. (To deselect one, click it again.)

- 12 To load the vehicle detectors from the controller, click into the right of the Detectors field. The Detector Configuration window opens. For details on how to use this window, refer to *Entity Configuration Vehicle Detectors* on page 3-48.
- **13** Select the Jurisdiction to which the new signal will belong. For more information, refer to *Defining Jurisdictions* on page **20-12**.

**Note** • If the "ECcomPath" Global Setting is enabled, a field called "ECCOMM Monitoring" is shown (below the Notes field). With the combination of these two settings, you can launch the EDI Malfunction Management Unit (MMU) Conflict Monitor program from Centracs. The "ECcomPath" setting specifies the path to the executable; the "ECCOMM Monitoring" field specifies the IP address. After these two items have been configured, to launch the program, you can click the EDI option on the Signal Status display (page 6-1), or you can right-click a signal in the Entity Tree or Map Viewer and select Launch ECcom Monitoring...

- 14 To collect data for the MOE (Measure of Effectiveness) reports, turn on the Enable MOE Logging checkbox. This activates the MOE logging on the controller. For more information about the MOE reports, refer to Using the MOE Reports on page 11-1.
- 15 To attach files to this signal configuration (such as timing sheets, intersection diagrams, or digital images of the intersection/equipment), click to the right of the Files field. The Attach Files window opens. For instructions on how to attach, open, update, or delete files, refer to page 19-38. These attached files will be accessible to users from the Signal Status display window (page 6-1).

- Entity Configuration Signals
  - 16 To save your entries, click Apply or OK. (Apply saves your changes and keeps the window open so that you can add notes or change preemptor descriptions for this signal; OK saves your changes and closes the window.)

Entity Configuration	
Name/Identifier	Woodmen @ Rockrimmon
Description	ASC/3
Signal Type	ASC/3
Communications	IP - NTCIP @ 172.20.96.11:501
Mode	Online 🔹
Primary Street	Woodmen Rd
Secondary Street	Rockrimmon Blvd
Coordinates	38.9305822351557, -104.82036492
Primary Poll	ASC/3 Primary Poll
Secondary Poll	ASC/3 Secondary Poll
Tertiary Poll	•
Main Street Phases	2,6
Side Street Phases	4,8
Detectors	12 system detectors of 64 loaded
Jurisdiction	12 system detectors of 64 loaded       Colorado Springs
Notes	0 notes
Enable MOE Logging	✓
Preempt Descriptions	6 preemptor descriptions
Enable Simulation	
	OK Cancel Apply

The new signal is added to the Entity Tree.

- 17 Optionally, after the new signal has been saved, you can add notes for this entity. You can also override the system-wide default preemptor descriptions for this signal. (If you clicked OK to save and close the signal, right-click the new signal in the Entity Tree and select Edit Properties to return to the Entity Configuration window.) To add notes, click is to the right of the Notes field. For more details, refer to Adding Notes to Entities on page 3-14. To change the preemptor descriptions, click is to the right of the Preempt Descriptions field. For more details, refer to Customizing the Preemptor Descriptions field. For more details, refer to Customizing the Preemptor Descriptions for a Signal on page 3-42.
- 18 If you did not manually enter the latitude/longitude coordinates for the signal (described above), then from the main menu, select View ▶ Map or View ▶ Preset Map and zoom in on the location for the signal.

Drag and drop the signal from the Entity Tree onto the appropriate position on the map.

Entity Configuration - Signals

The Map Editor opens so that you can define and configure the map visuals for this signal. For details about how to use the Map Editor, refer to *Editing the Map View* on page 5-18.

**Note** • The "Enable Simulation" field on the Entity Configuration window is only for demonstrations and tests, and must be left unchecked for normal day-to-day operations.

**To edit the configuration for a signal:** Refer to *Editing Entity Properties* on page 3-9. • Entity Configuration - Signals

Customizing the Preemptor Descriptions for a Signal

Although the Preempts tab of the Settings window (page 20-5) sets the default preemptor descriptions for the system, you can use the procedure below to override those descriptions for specific signals

### To customize the preemptor descriptions for a signal:

- 1 From the Entity Tree, right-click the signal and select **Edit Properties**. The Entity Configuration window opens.
- 2 Click lie to the right of the Preempt Descriptions field. The Preemptor Descriptions window opens.

- F	Preemptor D	Descriptions		
Ov	erride def	ault preemptor de	scriptions for this	signal
Er	mergenc	<u>y Vehicle</u>		
1	Use Default:	Emergency Vehicle 1		
2				
3	Use Default:	Emergency Vehicle 2	_	
4	Use Default:	Emergency Vehicle 3		
4	Use Default:	Emergency Vehicle 4		
5	Use Default:	Emergency Vehicle 5	_	
6	Use Default:	Emergency Vehicle 6		
7				
8	Use Default:	Emergency Vehicle 7	_	
9	Use Default:	Emergency Vehicle 8		
3	Use Default:	Emergency Vehicle 9		
10	Use Default:	Emergency Vehicle 10	_	
11	Use Default:	Emergency Vehicle 11		
12				
Ra	Use Default: ailroad	Emergency Vehicle 12		
1				
2	Use Default:	Railroad 1	_	
3	Use Default:	Railroad 2		
	Use Default:	Railroad 3		
4	Use Default:	Railroad 4		
<u>Ot</u>	<u>ther</u>			
1	Use Default:	Other Preemnt 1	_	
			ок с	ancel

- **3** Enter your new descriptions for the various preemptors. The current default description for each preemptor is shown below each entry field. If you leave an entry blank, Centracs uses the default description.
- 4 To save your changes, click **OK**.

The Preempt Descriptions field on the Entity Configuration window now shows the number of preemptor description overrides you added for this signal. The new labels you configured will now be shown in the Preempt dropdown when you add a manual command, schedule entry, or action set to send the Preempt action to this signal.

**5** To exit the window, click **Close**.

Device Communication Configuration

## Device Communication Configuration

Use the Device Communication Configuration window to set the communication properties for a signal controller, Autoscope/RTMS detector, or DMS device.

The Device Communication Configuration window opens when you click in the right of the Communications field on the Entity Configuration window for a signal, Autoscope detector, RTMS detector, or DMS.

Signal:

E	Device Communication	Con	figura	tion								
	Centracs Local E	lition	1	Lo	cal E	Editio	n 2	]				
	Comm Channel		IP - N	ITCI	P or	n Dev	ice N	lana	ger NT	CIP		•
l	Destination IP		127.0	0.0.1								
l	Destination Port		501									
l	Serial Drop Address		0									
l	Primary Poll Rate (msec)		1000				_				Use D	efault
l	Secondary Poll Rate (msec) Tertiary Poll Rate (msec)		3000	0							Use D	efault
l			0								Use D	efault
l	Priority Poll Rate (msec)		1000		_	_		_			Use D	efault
l	Retries		3	_		_					Use D	efault
l	Poll Retries		0	_	_	_	_	_			Use D	efault
	FTP Username:	ec	onolit	е						V	Use De	efault
	FTP Password:	0.0								<b>.</b>	Use De	efault
	FTP Password Verify:											
	SNMP Community Name	ad	Iminis	trato	r	-	-	-	_	~	Use De	erault
									0	K	Ca	incel

### Autoscope Detector:

6	Device Communication C		
	Device Manager	Device Manager 1	· · · · · · · · · · · · · · · · · · ·
	Destination IP	192.168.3.4	
	Destination Port	501	
	Primary Poll Rate (sec)	120	Use Default
	Secondary Poll Rate (sec)	1800	🔲 Use Default
			OK Cancel

Device Communication Configuration •

### RTMS:

[	Device Communication Configuration			
	Comm Channel	TCP on Device Manager 1	•	
	Destination IP	172.20.97.201		
	Destination Port	2000		
	RTMS Id	1		
	Device Poll Rate (sec)	1	🔽 Use Default	
			OK Cancel	

### DMS:

[	Device Communication C	Configuration	
	Comm Channel	IP - NTCIP on Device Manager NTCIP	
	Destination IP	127.0.0.1	
	Destination Port	161	
	Serial Drop Address	0	
	Primary Poll Rate (msec)	30000	Use Default
	Priority Poll Rate (msec)	10000	Use Default
	Retries	3	🔽 Use Default
	Poll Retries	0	Use Default
		ОК	Cancel

For a signal, three different connection profiles can be defined — one for Centracs and two for Local Edition. At the top of the window, click the tab for the profile you want to configure. (You can merge the Local Edition profiles to/from other systems; you cannot merge the "Centracs" profile. For information about the merge function, refer to *Merging Entity Data* on page 16-1.)

The fields differ depending on the type of device being configured. The possible fields are described below, in alphabetical order:

Field	Description
Comm Channel	Select the communication channel for this device. The items shown in the Comm Channel dropdown list are defined on the Servers/Comms Configuration window. For more information, refer to <i>Setting Up Communications</i> on page 20-32.
Destination IP	For IP channels, enter the IP address for the device.
Destination Port	For IP channels, enter the UDP port through which the device will reply to requests. Communications sent to any other port are ignored.

### Using the Entity Tree

Device Communication Configuration

Field	Description
FTP Username and FTP Password	For ASC/3 and Cobalt signals only. To override the default username and password used for FTP-based communications between Centracs and this signal, uncheck the Use Default checkbox and enter the new values. (The default values are defined on the Default Comm Parameters window. For details, refer to page 20-10.) FTP-based communications include MOE uploads and downloads/uploads in the Signal Editor. The FTP username and password must match the values set on the signal controller.
Poll Retries	To override the default number of Poll Retries for polling communication attempts), uncheck the Use Default checkbox and enter the new number of poll retries. (The default value is defined on the Servers/Comms Configuration for this channel. For details, refer to page 20-36.)
Primary Poll Rate (for Autoscope detectors)	For an Autoscope detector, use this field to override the default rate at which Centracs attempts to communicate with Autoscope devices to make sure the devices are still "alive" and that comms are good, in seconds. The value entered here will be applied to <i>this</i> device only. (The default value is defined on the Autoscope Settings window. For details, refer to page 20-2.)
Primary Poll Rate (for DMS)	To override the default Primary Poll Rate for the communication channel, uncheck the Use Default checkbox and enter the new poll rate, in milliseconds. (The default value is defined on the Servers/Comms Configuration for this channel. For details, refer to page 20-36.) A value of zero disables polling. Note that the primary polling rate for a DMS device is usually slower than the primary polling rate for a signal controller. For example, if you poll the signal every 1 second, you might choose to poll the DMS every 10 seconds (10000 milliseconds). The appropriate polling rate for your sign depends on the type and speed of communications between Centracs and the sign. The values entered here will be applied to <i>this</i> device only. There is no secondary or tertiary polling for a DMS.

Device Communication Configuration

Field	Description
Primary/Secondary/ Tertiary Poll Rate (for signals)	To override the default Primary Poll Rate, Secondary Poll Rate, and/or Tertiary Poll Rate for the communication channel, uncheck the Use Default checkbox and enter the new poll rates, in milliseconds. (The default values are defined on the Servers/ Comms Configuration for this channel. For details, refer to page 20-36.) These values determine the frequency of polling for the packets specified in the Primary Poll, Secondary Poll, and Tertiary Poll fields on the Entity Configuration window (page 3-36). A value of zero disables polling. The values entered here will be applied to <i>this</i> device only.
Priority Poll Rate	To override the default Priority Poll Rate for the communication channel, uncheck the Use Default checkbox and enter the new poll rate, in milliseconds. (The default value is defined on the Servers/Comms Configuration for this channel. For details, refer to page 20-36.) A value of zero disables priority polling. The value entered here will be applied to <i>this</i> device only.
Retries	To override the default number of Retries for non-polling communication attempts, uncheck the Use Default checkbox and enter the new number of retries. (The default value is defined on the Servers/Comms Configuration for this channel. For details, refer to page 20-36.)
RTMS Id	Must match the sensor ID (from 1 to 65534) that is configured in the ISS configuration utility.
Secondary Poll Rate (for Autoscope detectors)	For an Autoscope detector, use this field to override the default rate at which Centracs polls Autoscope devices for a current snapshot, in seconds. The value entered here will be applied to <i>this</i> device only. (The default value is defined on the Autoscope Settings window. For details, refer to page 20-2.)
Serial Drop Address	For serial channels, enter the numeric drop address for this device on the channel. This is necessary to differentiate it from other devices on the same channel. For IP communications, leave this field set to 0.
SNMP Community Name	For ASC/3, ASC/2, Cobalt, and Eagle signals only. To override the default access name used in SNMP communications between <i>Centracs</i> and this signal, uncheck the Use Default checkbox and enter the SNMP Community name. (The default name is defined on the Default Comm Parameters window. For details, refer to page 20-10.)

To save the settings, click **OK**.

Entity Configuration - Vehicle Detectors

## Entity Configuration - Vehicle Detectors

In general, vehicle detectors are configured in Centracs automatically by uploading detector information from the signal controllers. A few steps are necessary to allow this automatic configuration.

**Note** • This feature is not supported for Tek-Chile controllers.

### To allow automatic vehicle detector configuration for a signal controller:

1 If not already done, configure one or more detectors as "System detectors" to collect volume and/or occupancy data. You can do this in the Signal Editor then download to the controller, or on the controller itself then upload to the Signal Editor. (For information about the Signal Editor, refer to *Changing the Controller Settings* on page 15-1.) A detector is defined as a "System detector" in the controller using the fields below:

Controller Type	Field(s)
ASC/3 and Cobalt	The "NTCIP Occupancy" field or "NTCIP Volume" field (or both) must be enabled on the Vehicle Detector Setup screen (MM-6-2).
ASC/2	The "System" flag must be enabled on the Vehicle Detector Setup screen.
Oasis	The "Enable Logging" field must be enabled on the Vehicle Detector Assignments screen (7-1).
W4	The "Detector Count On" function must be enabled as a TOD/ DOW event.
Eagle	The "Occupy" field or "Volume" field (or both) must be enabled on the Detector Config Data screen.

- 2 From the Signal Editor, save the changes made in step 1 to the Centracs database.
- 3 There are two ways to confirm that the detector configuration succeeded:
  - In the Entity Tree, right-click the signal and select **Edit Properties**. On the Entity Configuration window, the Detectors field shows the total number of detectors that were successfully loaded into Centracs for this signal.
  - In the Entity Tree, click beside the signal. The newly loaded detectors are shown as entities under the signal.

### To add additional information for a vehicle detector:

**Note** • The Coordinates and Notes fields are informational only; they do not affect the operation of the system or the detector.

1 From the Entity Tree, right-click a detector and select **Edit Properties**. The Entity Configuration window opens. The fields vary, depending on the detector type.

Entity Configuration	Ø 🗖 🛛	Entity Configuration		
Name/Identifier	Willoughby Ln @ Wasabi Way Det 5	Name/Identifier	Forest Edge 1 det 102	
Description	- Westbound -	Description	Lane One	
Coordinates		Loop Length		
Controller	🚦 Willoughby Ln @ Wasabi Way 🔻	Distance from Stop Bar		
Controller Reference	5	Jurisdiction	General	Υ.
Extended Phases	1, 6	Notes	0 notes	
Call Phases	1, 6			
Loop Length	60 Feet			
Distance from Stop Bar	5 Feet			
Jurisdiction	Colorado Springs 👻			
Notes	0 notes			
	Close			Close

System detector

Autoscope/RTMS detector (DCMS)

- 2 For system detectors, to manually enter the latitude and longitude coordinates for the geographical location of this detector, click is to the right of the Coordinates field. For details on how to use the Coordinates window, refer to *Setting Entity Coordinates* on page 3-71. Note that the Coordinates field for system detectors is informational only; you cannot add system detectors to the map in Centracs.
- **3** To add notes for this detector, click to the right of the Notes field. For more information, refer to *Adding Notes to Entities* on page 3-14.
- 4 To save your entries, click **Apply** or **OK** on the Entity Configuration window. (**Apply** saves your changes and keeps the window open; **OK** saves your changes and closes the window.)

**Note** • For system detectors, to edit the Loop Length, Distance from Stop Bar, Name, or Description, refer to the next section. For Autoscope/RTMS detectors, refer to page 17-27.

Entity Configuration - Vehicle Detectors

### To edit other detector properties:

1 From the Entity Tree, right-click the parent signal for the detector and select **Edit Properties**. The Entity Configuration window opens.

Entity Configuration	
NI (11 - 177	Willowshickey La O Wasshi Way
Name/Identifier	Willoughyby Ln @ Wasabi Way
Description	(512)
Signal Type	ASC/3
Communications	IP - NTCIP @ 127.0.0.1:512
Mode	Online •
Primary Street	Willoughby Ln
Secondary Street	Wasabi Way
Coordinates	38.8392575404776, -104.840242936569
Primary Poll	ASC/3 Primary Poll
Secondary Poll	ASC/3 Secondary Poll
Tertiary Poll	
Main Street Phases	2,6
Side Street Phases	4,8
Detectors	8 system detectors of 64 loaded
Jurisdiction	Colorado Springs 🔹
Notes	0 notes
Enable MOE Logging	
Preempts	0 preemptor descriptions
	Close

**Note** • Because the fields on the Entity Configuration window are configurable, your screen may look different than the sample shown here. For details, refer to *Using the Type and Field Definitions Window* on page 19-5.

2 Click \_ to the right of the Detectors field.

Entity Configuration - Vehicle Detectors •

The Detector Configuration window shows the settings for all the detectors defined for this signal:

Detector Configuration for Willoughby Ln @ Wasabi Way							
System Detector	Detector Number	Call Phases	Extended Phases	Length	Distance from Stop Bar	Name	Description
	1	2, 5	2, 5	8 Feet	5 Feet	Willoughby @ Wasabi Det 1	- Eastbound - 🛽 🖉
	2	2, 5		8 Feet	5 Feet	Willoughby @ Wasabi Det 2	- Eastbound -
<	3		3, 8	60 Feet	16 Feet	Willoughby @ Wasabi Det 3	- Southbound -
	4	3, 8		8 Feet	5 Feet	Willoughby @ Wasabi Det 4	- Southbound -
<	5	1, 6	1, 6	60 Feet	16 Feet	Willoughby @ Wasabi Det 5	- Westbound -
<	6	1, 6		8 Feet	5 Feet	Willoughby @ Wasabi Det 6	- Westbound -
	7		4, 7	60 Feet	16 Feet	Willoughby @ Wasabi Det 7	- Northbound -
	8	4, 7		8 Feet	5 Feet	Willoughby @ Wasabi Det 8	- Northbound -
	9	9	9	60 Feet	16 Feet	Willoughby @ Wasabi Det 9	
	4.0	10	10	60 F - 1		UPI 11 1 & UP 1100	
Reload Save Close							

**Note** • If this window is blank, you must populate it using information from the controller. To do so, refer to page 3-48.

The fields on this window are:

**System Detector** – If the detector is configured in the controller as a "System detector" to collect volume and/or occupancy data, a checkbox is shown in this column. If the checkbox is checked, Centracs logs the volume and occupancy data collected by the controller, and the detector is shown in the Entity Tree under its parent signal; if unchecked, Centracs ignores the data collected by the controller and the detector is not shown in the Tree.

A detector is defined as a "System detector" in the controller using the fields below:

Controller Type	Field(s)
ASC/3 and Cobalt	The "NTCIP Occupancy" field or "NTCIP Volume" field (or both) must be enabled on the Vehicle Detector Setup screen (MM-6-2).
ASC/2	The "System" flag must be enabled on the Vehicle Detector Setup screen.
Oasis	The "Enable Logging" field must be enabled on the Vehicle Detector Assignments screen (7-1).
W4	The "Detector Count On" function must be enabled as a TOD/ DOW event.
Eagle	The "Occupy" field or "Volume" field (or both) must be enabled on the Detector Config Data screen.

#### Entity Configuration - Vehicle Detectors

**Vehicle Detector Number** – The number of the detector, as defined on the controller. You cannot change this value.

**Call Phases / Extended Phases** – These fields show the assigned phases and call phases specified in the controller for each detector. If the detector is defined in the controller as a call detector, the phases are shown in the Call Phases column. If the detector is defined in the controller as an extension detector, the phases are shown in the Extended Phases column. If the detector is defined as both, the phases are shown in both columns. To change these values, you must change them on the controller and reload them into Centracs using the Signal Editor.

**Length** – The length of the loop detector or detection zone. Centracs uses this value for speed calculations in the MOE reports, VOS reports, Links, Traffic Responsive, and Centracs Adaptive. When detector configurations are uploaded from the controller for the first time, Centracs assigns the default length specified on the Default Detector Settings window (refer to page 20-8). If the detector is configured in the controller as a call detector (or as a call+extend detector), Centracs assigns the default "Call Length" value; if the detector is configured as an extension detector, Centracs assigns the default "Extended Length" value. To change the value, double-click it and type the new value. One of these units must be included: feet or ft, miles or mi, meters or m, kilometers or km. For example, "6 ft" or "1.8 m". To copy the same length to all rows, right-click the length and select **Set all to {***length***}**.

**Average Vehicle Length** – Centracs uses this value for speed calculations in the MOE reports, VOS reports, Links, Traffic Responsive, and Centracs Adaptive. When detector configurations are uploaded from the controller for the first time, Centracs assigns the default length specified on the Default Detector Settings window (refer to page 20-8). To change the value, double-click it and type the new value. One of these units must be included: feet or ft, miles or mi, meters or m, kilometers or km. For example, "15 ft" or "4.5 m". To copy the same length to all rows, right-click the length and select **Set all to** *{length}*.

**Distance from Stop Bar** – The distance of the detector from the stop bar at the intersection. When detector configurations are uploaded from the controller for the first time, Centracs assigns the default distance specified on the Default Detector Settings window (refer to page 20-8). If the detector is configured in the controller as a call detector (or as a call+extend detector), Centracs assigns the default "Call Distance From Stop Bar" value; if the detector is configured as an extension detector, Centracs assigns the default "Extended Distance From Stop Bar" value. To change the value, double-click it and type the new value. One of these units must be included: feet or ft, miles or mi, meters or m, kilometers or km. For example, "6 ft" or "1.8 m". To copy the same distance to all rows, right-click the distance and select **Set all to** {*distance*}.

**Name** – A unique name for the detector. When detector configurations are uploaded from the controller for the first time, Centracs assigns a name to each detector in the format:

{parent signal name} Det {nn}

where  $\{nn\}$  is a unique number. To change the name, double-click it and type the new name.

**Description** – Any relevant details about the detector. When detector configurations are uploaded from the controller for the first time, Centracs assigns a description to each detector that lists the assigned phase and call phase(s) for the detector. To change the description, double-click it and type over it. To copy the same description to all rows, right-click the description and select **Set all to** {*description*}.

- 3 Click or double-click in the fields and make your changes. Optionally, for some fields, if you right-click one of these fields, you have the option to copy the same value to all of the detectors for the signal.
- 4 To save your changes, click **Save**.
- **5** To return to the Entity Configuration window, click **Close**.

**Note** • To refresh the Call Phases and Extended Phases values (for example, if these values have just been changed on the controller or in the Signal Editor), click Reload.

• Entity Configuration - Links

## Entity Configuration - Links

Centracs has two types of Link entities:

- Level of Service Link a collection of vehicle detectors (often loop detectors) that are associated with consecutive intersections on a section of road. A Level of Service link offers a convenient way to monitor and analyze the volume, speed, and occupancy data for these detectors collectively.
- BlueTOAD<sup>™</sup> Link Pairing a section of road between two BlueTOAD Data Collection Stations. BlueTOAD Data Collection Stations gather data from passing vehicles that have Bluetooth<sup>™</sup>-enabled devices onboard. The data is used to calculate the current speed and travel time for the section of road.

Both types of links can be shown on the map, and they use color-coding to indicate current traffic conditions. Also, historical link data can be viewed in reports for further analysis.

Use the procedure below to add a new Level of Service link; for BlueTOAD links, refer to *Configuring BlueTOAD Entities* on page 14-9.

### To add a new Level of Service Link:

- 1 Determine the parent (i.e., a System, Section, Subsection, or Group) for the new Link to be added.
- 2 Right-click the parent entity in the Entity Tree.
- 3 From the pop-up menu, select Add Entity ► Link. The Entity Configuration window opens.

<ul> <li>Entity Configuration</li> </ul>	$\boxtimes \Box \boxtimes$
Name/Identifier	1
Description	
Link Type	Level of Service
Coordinates	
Settings	System Settings 🔹 🛄
Max Volume	0
Max V+kO	0
Max Speed	0 mph
Occ Scaling Factor (k)	0
Detectors	0 Configured
Enable Logging	Off 🔹
Jurisdiction	General 🔹
Notes	0 notes
	OK Cancel Apply

**Note** • Because the fields on the Entity Configuration window are configurable, your screen may look different than the sample shown here. For details, refer to *Using the Type and Field Definitions Window* on page 19-5.

Entity Configuration - Links •

4 Enter a unique name for the Link, and optionally, a description. (You can enter any text or numbers for the Name/Identifier and Description fields, and you can change them at any time.)

**Note** • The Link Type is automatically populated by the system and cannot be changed.

5 Optionally, to manually enter the latitude and longitude coordinates for the geographical location of this Link, click to the right of the Coordinates field. Or, you can simply drag and drop the Link onto the map (for more details, refer to step 16 on page 3-59). For details about how to use the Coordinates window, refer to page 3-71.

**Note** • For information about the Settings field, refer to *Link Settings* on page 3-59.

6 In the Max Volume field, enter the number of vehicles considered to be the maximum for the computational period. Centracs uses this number to determine whether the Link has exceeded any of the Volume thresholds specified on the Link Settings window (page 3-59). The calculation is:

```
detected volume / Max Volume = Volume %
```

7 In the Max V+kO field, enter the weighted volume-plus-occupancy value considered to be the maximum for the computational period. Centracs uses this number to determine whether the Link has exceeded any of the V+kO thresholds specified on the Link Settings window (page 3-59). The calculation is:

calculated V+k0 / Max V+k0 = V+k0 %

8 In the **Max Speed** field, enter the speed considered to be the maximum or "free flow" speed (usually a number slightly higher than the speed limit for that stretch of roadway). Centracs uses this number to determine whether the Link has exceeded any of the Speed thresholds specified on the Link Settings window (page 3-59). The calculation is:

```
average detected speed / Max Speed = Speed %
```

**Note** • Because the maximum occupancy is always considered to be 100%, there is not a field for you to configure this value.

**9** In the **Occ Scaling Factor** field, enter the value to use for k in all V+kO calculations for this Link. Enter any whole number from 0 to 2147483647.

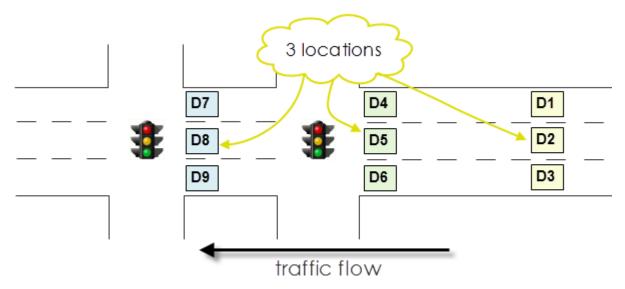
- Entity Configuration Links
  - 10 Click to the right of the Detectors field to specify the vehicle detectors to be included in this Link. (The detectors must already be defined in the Entity Tree.) The Link Detector Settings window opens.

<ul> <li>Link Detector</li> </ul>	Settings					
Detectors						
		ion intersects all I	anes and is perpe	ectors are capturing indicular to the road Occupancy and spe	lway.	
S Location	11					+
Lane #	Detector	Volume Scaling	3 % Occupancy S	caling % Speed Sca	aling %	
1		100	100	100	•	
					ОК	Cancel

Configure the locations and lanes for all detectors included in this Link, and click **OK**. A location may include one lane or multiple lanes, each with its own detector.

- To assign a detector to a lane, click in the Detector column and select the detector from the Entity Selection window (page 3-18).
- To add a lane to a location, click to the right of a lane. The new lane is added directly below the lane you clicked.
- To delete a lane, click 🛛 to the right of the lane.
- To add a location, click 🗄 to the right of the location name. The new location is added directly below the location you clicked.
- To delete a location, click 🛛 to the right of the location name.
- To "weight" the data from some detectors less than others, you can change the Volume, Occupancy, and Speed Scaling values to be less than 100%.

Entity Configuration - Links •



For example, suppose the Link includes a total of 9 detectors, numbered D1 thru 9:

In this case, you would specify a total of three locations, each with three lanes:

- Location 1 = detectors 1, 2, and 3
- Location 2 = detectors 4, 5, and 6
- Location 3 = detectors 7, 8, and 9

For Link calculations that include only one location, the volumes for each detector are added together, the occupancy values are averaged, and the speed values are averaged.

For Link calculations that include multiple locations, the total volumes for each *location* are averaged together, the occupancy values for *all detectors* are averaged together, and the speed values for *all detectors* are averaged together.

Or more simply:

*Link Volume = (sum of all detector volumes) ÷ (total # of locations)* 

*Link Occupancy* = (sum of all detector occupancies) ÷ (total # of detectors for all locations)

*Link Speed = (sum of all detector speeds) ÷ (total # of detectors for all locations)* 

For example, in the drawing shown above:

Link Volume =  $((D1 + D2 + D3) + (D4 + D5 + D6) + (D7 + D8 + D9)) \div 3$ 

Link Occupancy = (D1 + D2 + D3 + D4 + D5 + D6 + D7 + D8 + D9) ÷ 9

Link Speed =  $(D1 + D2 + D3 + D4 + D5 + D6 + D7 + D8 + D9) \div 9$ 

• Entity Configuration - Links

Link Detec	Link Detector Settings							
Add locations and lanes to specify where detectors are capturing counts. A location intersects all lanes and is perpendicular to the roadway. Volume counts for each lane at a location are summed. Occupancy and speed are averaged.								
🙆 Locat	tion 1			+ 🗙				
Lane #	Detector	Volume Scaling % Occupancy Scalin	ng % Speed Scaling %					
1	🥂 WB Woodmen @ N Union 1 🛛 🛄	100 100	100	$\pm$ ×				
2	🧮 WB Woodmen @ N Union 2 🛛 🛄	100 100	100	$+ \times$				
3	📴 WB Woodmen @ N Union 3 🛛 🛄	100 100	100	$\pm \times$				
🕢 Locat	tion 2			+ 🗙				
Lane #	Detector	Volume Scaling % Occupancy Scalir	ng % Speed Scaling %					
1	🧝 WB Woodmen @ N Union 4 🛛 🛄	100 100	100	$+ \times$				
2	🧮 WB Woodmen @ N Union 5 🛛 🛄	100 100	100	$+ \times$				
3	📴 WB Woodmen @ N Union 6 🛛 🛄	100 100	100	$\pm$				
🙆 Locat	tion 3			+ 🗙				
Lane #	Detector	Volume Scaling % Occupancy Scal	ing % Speed Scaling %					
1	<sub>尾</sub> WB Woodmen @ Academy 7 🛛 🔙	100 100	100	+ 🗙				
2	ᄙ WB Woodmen @ Academy 8 🛛 🔙	100 100	100	+ 🗙 📗				
3	📴 WB Woodmen @ Academy 9 🛛 🔙	100 100	100	+ 🗙				
			Ok	Cancel				

- **11** After you have added all the necessary detectors, click **OK** to save the settings and go back to the Entity Configuration window.
- 12 From the Enable Logging dropdown, select Off, Use Link Settings, or On. To use the logging value from the Link Settings window (page 3-59), select the Use Link Settings option. To override the logging value from the Link Settings window for this Link only, select the On or Off option.
- **13** Select the Jurisdiction to which the new Link will belong. For more information, refer to *Defining Jurisdictions* on page **20-12**.
- 14 Optionally, to add notes for this entity, click to the right of the Notes field. For more information, refer to *Adding Notes to Entities* on page 3-14.

Entity Configuration - Links

Entity Configuration	ØOX
Name/Identifier	LINK - East Woodmen - WB
Description	Westbound
Link Type	Level of Service
Coordinates	
Settings	System Settings 🔹 🛄
Max Volume	400
Max V+kO	400
Max Speed	45 mph
Occ Scaling Factor (k)	0
Detectors	9 Configured
Enable Logging	Use Link Settings 🔹
Jurisdiction	Colorado Springs 🔹
Notes	0 notes
	OK Cancel Apply

**15** To save your entries, click **Apply** or **OK**. (**Apply** saves your changes and keeps the window open; **OK** saves your changes and closes the window.)

The new Link is shown in the Entity Tree.

16 If you did not manually enter the latitude/longitude coordinates for the Link (described above), then from the main menu, select View ➤ Map or View ➤ Preset Map and zoom in on the location for the Link.

Drag and drop the Link from the Entity Tree onto the appropriate position on the map.

The Map Editor opens so that you can define and configure the map visuals for this Link. For details about how to use the Map Editor, refer to *Editing the Map View* on page 5-18.

## To edit the configuration for an individual Link:

Refer to Editing Entity Properties on page 3-9.

#### Link Settings

Use the Link Settings window to specify global properties for all Links defined in the system.

#### To change the computational settings for *all* Links:

1 From the Entity Configuration window for any Link, click into the right of the Settings field. Depending on the type of Link you chose, the appropriate Link Settings window opens:

Entity Configuration - Links

## Level of Service Links:

📃 Lii	nk Settings	;								
Sett	ings									
Whava	Desired computational frequency(sec) 60 Min Good Detectors(%) 90 When detector data for all detectors is available, the calculations will be performed at this rate.									
The	e maximum ti	tional frequency(se me the link will wait for fore performing	- 300	Enable Loggi	ng 🗸					
Leve	els									
#	Symbol	Volume %	V+kO %	Occupancy %	Speed %	Color				
1	А	0% to 20 %	0% to 20 %	0% to 20 %	100% to 80 %		+ 🗙 🛐			
2	В	21% to 40 %	21% to 40 %	21% to 40 %	79% to 60 %		+ 🗙 😏			
3	С	41% to 60 %	41% to 60 %	41% to 60 %	59% to 40 %		+ 🗙 😏 📗			
4	D	61% to 100%	61% to 100%	61% to 100%	39% to 0%		<b>9</b>			
							OK Cancel			

## **BlueTOAD Links:**

📃 Li	ink	Settings	;								
Sett	tin	gs									
Wh	nen aila	detector dable, the ca	utational frequency lata for all detectors is loulations will be perfor		60	Mi	n Good Dete	ectors(%)	90		
The	e n tec	naximum ti	tional frequency(see me the link will wait for fore performing	<sup>c)</sup> 300		Er	able Loggin	g 🗸			
Lev	els	3									
#	ŧ	Symbol	Speed %	Color							
1		А	100% to 80 %		+(	× ۶					
2	2	В	79% to 60 %		+(	× 💡					
3	;	С	59% to 40 %		+(	× ۶					
4	ļ	D	39% to 0%		<b>9</b>						
										ОК	Cancel



The fields are:

- Desired computational frequency (for Level of Service Links only) The interval at which the system will gather detector data, make calculations, and update the Realtime Link Status display (in seconds).
- Max computational frequency (for Level of Service Links only) The maximum time the system will wait for data from a detector before it considers it invalid (in seconds). If a detector has not reported any data by the end of this interval, the Link will use the data it has from the other detectors to make calculations.
- Min Good Detectors (for Level of Service Links only) The percentage of detectors in a Link which must collect valid data in order for Centracs to make Link calculations. To always make calculations, enter 0.
- Enable Logging if this option is turned on, Centracs saves Link data to the database as it is calculated, and you can view this data on the Links report for a specific date/ time range; if this option is turned off, you can only see Link data on the Real-time Link Status window (these calculations are *not* saved).
- Levels You can set up to ten thresholds, or Levels of Service, each with its own color. Centracs uses these colors on the Map Viewer to indicate the current Level of Service of the Link. Level of Service is a numeric indicator of the efficiency with which the roadway is serving traffic over time. Low levels indicate free-flowing traffic or no traffic; high levels indicate traffic congestion. You can see the results of the Level of Service calculations in multiple places in Centracs:
  - the Links shown on the Map Viewer change to the appropriate color when traffic reaches the configured Level of Service
  - you can add triggers for the "Link Threshold" events to alert operators when a Link reaches a specific Level of Service (refer to Using Triggers on page 4-25)
  - for Level of Service Links, the Link Status window shows a graph of the current Level of Service calculations as they occur (refer to *Real-Time Link Status* on page 6-45)
  - for Level of Service Links, the Links report shows a graph of the Level of Service calculations for a specific time period in the past (refer to *Level of Service Links Report* on page 10-28)

For example, with the sample settings shown above, a BlueTOAD Link on the Map Viewer will be green as long as the speed is greater than or equal to 80% of the Max Speed specified on the Entity Configuration window. (Percentage volume, occupancy, and V+kO *increase* as traffic flow increases; percentage speed *decreases* as traffic flow increases — this is why the sample speed values shown above start high and get lower for each level, while the other values start low and get higher for each level.)

- To change a color, click the color box and select a color (for details, refer to Using the Color Selector Window on page 3-64).
- To delete a level, click the 🗵.

- Entity Configuration Links
  - To add a level, click the 🗄.
  - To add a trigger to send an alert or do some other action when the threshold is reached, click the (for details, refer to Using Triggers on page 4-25).

Because some agencies use numbers to indicate the Level of Service for a Link (like Centracs does) and others use letters, the Symbol column allows you to select the characters to use in your system. In the example above, letters A through D are used instead of numbers. You can enter letters, symbols, numbers, or a combination of these. The characters you enter will appear on the Level of Service graph on the Real-Time Link Status display (page 6-45). (The Level of Service Link report always shows numbers.)

**Note** • For Level of Service Links, you must also configure the LinkLOSSource Global Setting. This setting specifies whether to base the Level of Service calculations for the Map Viewer on Volume, V+kO, Occupancy, or Speed data. The default is Volume. For instructions, refer to *Viewing and Editing Global and Local Settings* on page 20-61. (For BlueTOAD links, Level of Service calculations are always based on speed data.)

2 Make the necessary changes, then click **OK**. The changes are applied to *all* Links.

Note • You may need to restart the Centracs services for your changes to take effect.

Examples for Level of Service Links

#### Example 1

IF the Computational Frequency is set to 300 seconds...

and

IF LinkLOSSource is set to Volume...

and

IF the link levels are configured as shown in the "Level of Service Links" sample screen above...

and

IF the volume detected in 300 seconds divided by the Max Volume is 30%...

THEN the Link icon on the Map Viewer turns yellow.

Entity Configuration - Links

#### Example 2

IF the Computational Frequency is set to 300 seconds...

and

IF LinkLOSSource is set to Speed...

and

IF the link levels are configured as shown in the "Level of Service Links" sample screen above...

and

If the average detected speed in 300 seconds divided by the Max Speed is 30%...

THEN the Link icon on the Map Viewer turns black.

## Example 3

IF LinkLOSSource is set to V+kO...

and

IF the link levels are configured as shown in the "Level of Service Links" sample screen above...

and

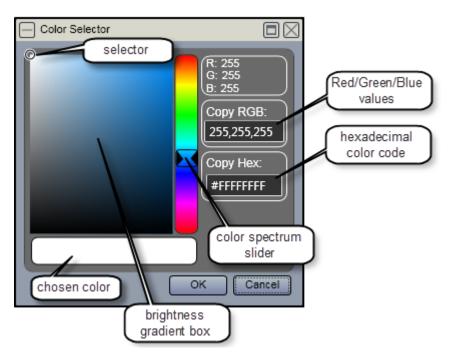
If the calculated V+kO divided by the Max V+kO is 50%...

THEN the Link icon on the Map Viewer turns red.

Entity Configuration - Links

## Using the Color Selector Window

To specify a background or foreground color for User Text icons in the Map Editor (page 5-18), or to specify Link Level colors (page 3-59), click is to the right of the field to open the Color Selector window.



You can specify a color by any of these methods:

- Enter Red/Green/Blue values in the "Copy RGB" field.
- Enter a hexadecimal color code in the "Copy Hex" field.
- Move the color spectrum slider up or down to choose a color, then click in the brightness gradient box (or drag and drop the selector circle).

The sample box near the bottom changes color to reflect your choice. When you are satisfied with the color, click **OK**.

Entity Configuration - CCTVs

# Entity Configuration - CCTVs

## To add a new CCTV entity:

- 1 Determine the parent (i.e., a System or a Group) for the new CCTV entity to be added.
- 2 Right-click the parent entity in the tree.
- 3 From the pop-up menu, select Add Entity ► CCTV. The Entity Configuration window opens.

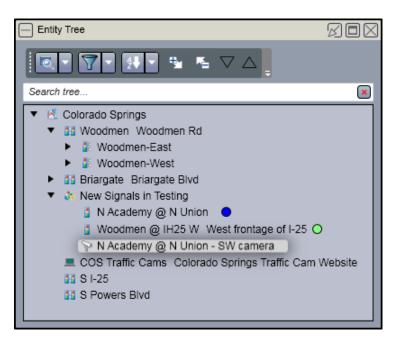
Entity Configurat	ion 🗖 🖂
Name/Identifier	Axis PTZ COS NE
Description	Axis PTZ Camera
Jurisdiction	General 🗸
Source Type	Axis 👻
Source IP	10.1.70.174
Source Port	80
Source Channel	
Source Username	root
Source Password	••••
Media Type	Motion JPEG 🔹
Camera Res.	4CIF (640 x 480) 👻
PTZ	<b>v</b>
PTZ IP	10.1.70.174
PTZ Port	80
PTZ Type	Axis
PTZ Mode	Scan 👻
PTZ Speed	0
Notes	0 notes
	OK Cancel Apply

**Note** • Because the fields on the Entity Configuration window are configurable, your screen may look different than the sample shown here. For details, refer to *Using the Type and Field Definitions Window* on page 19-5.

- 4 Complete the fields as appropriate. The fields you see may be different depending on the type of camera you select in the Source Type field. For details about each field, refer to *Field Descriptions* on page 3-66.
- 5 Click OK.

The new CCTV is shown in the Entity Tree.

Entity Configuration - CCTVs



6 To add the CCTV to the map, from the main menu, select View ▶ Map or View ▶ Preset Map and zoom in on the location for the CCTV.

Drag and drop the CCTV from the Entity Tree onto the appropriate position on the map.

The Map Editor opens so that you can define and configure the map visuals for this CCTV. For details about how to use the Map Editor, refer to *Editing the Map View* on page 5-18.

**Note** • You must install the redistributables for your camera type on the client machine before you can see the video feed from the camera you added.

## **Field Descriptions**

The fields you see may be different depending on the type of camera you select in the Source Type field. All fields are defined below, in alphabetical order:

Field Name	Description
Advanced CCTV	If shown, click to the right of the Advanced CCTV field. The Advanced CCTV Cameras window opens, and shows a list of all the cameras that have been defined in the Genetec software. Select the camera device to be associated with this entity.
Camera Res.	Smaller format resolutions decrease the bandwidth that is necessary, but lower video quality.
Jurisdiction	Select the Jurisdiction to which the new CCTV will belong. For more information, refer to <i>Defining Jurisdictions</i> on page 20-12.

Field Name	Description
Media Type	From the dropdown list, select Motion JPEG or MPEG-4 video compression. Motion JPEG uses higher bandwidth, but makes higher quality images; MPEG-4 decreases the image quality, but a lower bandwidth is sufficient. The CCTV source must be compatible with the compression algorithm that you select.
Name/Identifier and Description	Enter a unique name for the CCTV, and optionally, a description. You can enter any text or numbers for these fields, and you can change them at any time.
Notes	Optionally, to add notes for this entity, click to the right of the Notes field. For more information, refer to <i>Adding Notes to Entities</i> <b>on page 3-14</b> .
PTZ	If the camera supports Pan/Tilt/Zoom capabilities, check this box to enable the pan, tilt, and zoom functions and open the PTZ parameter fields.
PTZ IP	Enter the IP address used to send PTZ commands to the camera.
PTZ Mode	From the dropdown list, select Scan or Snap for the movement mode of the CCTV. The Scan function shows a continuous view as the camera sweeps across the field of view; you can click and hold the mouse button to scan the entire field of view. The Snap function snaps to a specific location that you indicate with the mouse pointer; you must make multiple successive mouse-clicks to scan the entire field of view.
PTZ Port	Enter the TCP/IP port used to send PTZ commands to the camera.
PTZ Speed	Enter the speed at which the CCTV moves when PTZ commands are sent. For the recommended speed value, refer to the user manual for the camera.
PTZ Type	From the dropdown list, select the type of PTZ communications to use for PTZ commands to the camera.
Source Channel	Multi-channel video encoders can send up to four video streams over the same IP Address and TCP/IP port. Select one of the available channels or set to Quad to bring back all four channels in the same CCTV entity.
Source IP	In the Source IP field, enter the IP address of the CCTV device.
Source Password	Enter the password that is set in the CCTV device. This is necessary in order to stream video from the device.
Source Port	In the Source Port field, enter the TCP/IP port through which the CCTV device sends video streams.

Entity Configuration - CCTVs

Field Name	Description
Source Type	Expand the Source Type dropdown list and select the camera type.
	<b>Note •</b> For Source Types of Generic or Autoscope Terra, the PTZ (Pan/Tilt/Zoom) functions are not available.
	<b>Note</b> • For Source Types of Axis, Generic, or Autoscope Terra, CCTV presets and tours are not supported. To use the preset and tour features with an Axis camera, set the Source Type to Advanced CCTV.
Source Username	Enter the username that is set in the CCTV device. This is necessary in order to stream video from the device.

Entity Configuration - URLs •

# Entity Configuration - URLs

## To add a new URL:

Refer to Adding Shortcuts to the Tools Menu on page 2-14.

## Examples:

<ul> <li>Entity Configuration</li> </ul>	n		
Name/Identifier	Notepad		
Description	Shortcut to Notepad application		
Mode	Exe	•	
Executable	Notepad.exe		
Arguments			
Show in Tools Menu	✓		
Jurisdiction	General	•	
Notes	0 notes		
	Entity Configuration		
	Name/Identifier	COS Traffic O	ams
	Description		ings Traffic Cam Website
	Mode	Url	•
	URL	http://www.sp	ringsgov.com/trafficeng
	Show in Tools Menu	✓	
	Jurisdiction	General	•
	Notes	0 notes	
			_
		ОК	Cancel Apply

**Note** • Because the fields on the Entity Configuration window are configurable, your screen may look different than the sample shown here. For details, refer to *Using the Type and Field Definitions Window* on page 19-5.

Entity Configuration - Aries

## **Entity Configuration - Aries**

For convenience, you can configure the *Aries* executable to be launched directly from the Entity Tree.

#### To configure this feature:

- 1 Determine the parent (i.e., a System, Section, Subsection, Group, or Signal) for the new *Aries* entity to be added.
- 2 Right-click the parent entity in the Entity Tree.
- 3 From the pop-up menu, select Add Entity ► Aries. The Entity Configuration window opens.

<ul> <li>Entity Configurat</li> </ul>	ion	
Name/Identifier	1	
Description		
Zone ID	0	
Intersection ID	0	
Jurisdiction	General	•
Notes	0 notes	
	OK Cancel	Apply

**Note** • Because the fields on the Entity Configuration window are configurable, your screen may look different than the sample shown here. For details, refer to *Using the Type and Field Definitions Window* on page 19-5.

- 4 Enter a unique name for the *Aries* link, and optionally, a description. (You can enter any text or numbers for the Name/Identifier and Description fields, and you can change them at any time.)
- 5 Enter the IDs for the Zone and Intersection to access in Aries via this link.
- 6 Select the Jurisdiction to which the new entity will belong. For more information, refer to *Defining Jurisdictions* on page 20-12.
- 7 Optionally, to add notes for this entity, click to the right of the Notes field. For more information, refer to *Adding Notes to Entities* on page 3-14.
- 8 To save your entries, click **Apply** or **OK**. (**Apply** saves your changes and keeps the window open; **OK** saves your changes and closes the window.)
- 9 The new Aries link is shown in the Entity Tree.
- 10 In the Global Settings, add the AriesExePath setting (from the "Centracs" component list) and enter the path to the Aries executable file. (It is only necessary to do this one time, even if you configure multiple Aries entities in the tree.) For instructions, refer to Viewing and Editing Global and Local Settings on page 20-61.

Setting Entity Coordinates •

## Setting Entity Coordinates

When you manually set the latitude and longitude coordinates for an entity, you can enter the values in decimal degrees or in degrees, minutes, and seconds. For examples, refer to the two sample screens below.

Ξ	Coordinates									
	Coordinates Conversion Enter coordinates as degrees, degrees-minutes, or degrees-minutes-seconds									
		Degrees	>Minutes	>Seconds						
	>Latitude	38.220768								
	>Longitude	-107.534695								
				ОК	Cancel					

**Coordinates entered in decimal degrees** 

Ε	-) Coordinates								
ſ	Coordinates Conversion Enter coordinates as degrees, degrees-minutes, or degrees-minutes-seconds								
		Degrees	>Minutes	>Seconds					
	>Latitude	38	13	14.7642					
	>Longitude	-107	32	4.9014					
				ок	Cancel				

Coordinates entered in degrees, minutes, and seconds

If you enter the values in degrees, minutes, and seconds, the system changes the values to decimal degrees when you click **OK**.

**Note** • For many entity types (such as Signals and CCTVs), it is not necessary to enter the coordinates manually — rather, you can simply drag and drop the entity from the Entity Tree onto the Map Viewer.

**Note** • To remove an entity's coordinates from the database, remove all values from the Coordinates window and click OK. Then on the Entity Configuration window, click Apply.

## Using the Entity Tree

Setting Entity Coordinates

# **Configuring Events, Alerts, and Triggers**

Centracs receives notification of various "events" from field devices and other points in the system. You can choose which events will be logged, which events will generate alerts, which events will trigger other actions, and which events will be ignored. For example, you may choose for Centracs to write a log entry each time a signal changes patterns, but to alert you if a signal goes into flash.

An alert is a notification to one or more users that an event has occurred and may require their attention. If an event is configured to generate an alert, Centracs can show the alert on the screen for one or more users who are logged in; Centracs can also send the alert automatically to one or more offline recipients. Online users are notified by a pop-up window accompanied by an optional audible alert; offline recipients are notified by email or SMS (Short Message Service) text message. Each alert is categorized as Informational, Warning, or Critical.

For cases in which the alert is not acknowledged or closed within a reasonable period of time, you can configure the Alert Escalation feature of Centracs to automatically send the alert to a different recipient or set of recipients. You can configure multiple levels of escalation, such that an alert continues to escalate until someone acknowledges or closes it.

Just as you can configure events to generate alerts, you can also configure them to trigger one or more actions. For example, you can configure Centracs such that each time a signal goes into flash, an alert is generated, a CCTV preset is activated, and a report is generated.

## Events

# **Events**

In Centracs you can specify which system events are important (and will therefore be logged and/or trigger an alert), and which events to ignore. For example, a comm failure is obviously important, but you may make the decision that some other events are trivial enough to ignore.

Changing Event Settings

Changing System-wide Event Settings

To see or change the Event settings:

- 1 From the main menu, select **Configuration >** Alerts and Events.
- 2 Click the Events tab at the top of the window. The Alerts and Events window opens.

Alerts and Events		□ X
Triggers Alert Escalations Events		
Search events		
Event Name	Enabled Log	
» Adaptive		- 6
» Alarm State		- 11
» BlueTOAD™		- 11
Comms to Device		- 11
Communication Bad - OFF		
Communication Bad - ON	<b>v</b>	
Communication Good - OFF		
Communication Good - ON	<b>v</b>	
Communication Marginal - OFF		
Communication Marginal - ON	<b>v</b>	
» Coord/Cycle		
» Detector Diagnostics		
» Dynamic Message Sign		
» Emergency Route Preemption		
» Flash		T

Changing Event Settings •

The events are divided into logical groups. To expand a group, click the > symbol to the left of the group name.

To sort the events within each grouping, click a column header (Event Name, Enabled, or Log).

To quickly find specific events, use the "Search events" box near the top of the window — as you type, the system filters out any events (from all groups) that do not contain the characters you entered.

3 Check or uncheck the various Enabled and Log checkboxes. The setting combinations below are valid:

Enabled	Log	Meaning
•	•	The event can be configured to generate alerts, the event will be logged, and the event will be included in the reports.
•		The event can be configured to generate alerts, but the event will not be logged or included in reports unless it triggers an alert.
		The event is ignored by Centracs.

4 Click  $\boxtimes$  to close the window.

**Note** • To generate alerts, it is not sufficient to enable the event; you must also use the Trigger Editor to configure alerts for the event. Refer to *Using Triggers* on page 4-25.

## **Changing Event Names**

## To rename an event:

- 1 From the Events tab of the Alerts and Events window, click \_\_\_\_ to the right of the event to rename.
- 2 Type the new name over the old name.

**Note** • If, at a later time, it is necessary to go back to the original name, you can click Default. If you have a version of Centracs that is not in English, be aware that the Default option causes the event name to revert to its original English name.

3 Click Save.

The new name you assigned to the event will now be reflected everywhere that event names are shown (such as in alerts and reports).

# Event Types

Selected Centracs events are identified below, in alphabetical order.

Event Name	Meaning
Adaptive	
Adaptive Any Off	Not used at this time.
Adaptive Any On	Not used at this time.
Adaptive Cycle Changed	Not used at this time.
Adaptive Cycle Off	Not used at this time.
Adaptive Cycle On	Not used at this time.
Adaptive Offset Changed	The offset was adjusted on the controller by Centracs Adaptive.
Adaptive Offset Off	Not used at this time.
Adaptive Offset On	Not used at this time.
Adaptive Split <i>nn</i> Changed	The split for phase <i>nn</i> was adjusted on the controller by Centracs Adaptive.
Adaptive Split Off	Not used at this time.
Adaptive Split On	Not used at this time.
Alarm State	
Alarm State <i>nn</i> - ON	The specified alarm input is active on the controller, where <i>nn</i> is a number from 01 to 16.
	For ACT controllers, Alarm 05 always corresponds to the Cabinet Door Open alarm, and Alarm 06 corresponds to the Police Switch alarm; Alarms 01 through 04 can be customized.
	For NEMA controllers, Alarms 01 through 10 can be customized.
	Alarms 11 through 16 are not used at this time.
	For details on how to assign meaningful names to the Alarm State events (for example, to change "Alarm State 05 - ON" to "Cabinet Door Open Alarm - ON"), refer to <i>Changing Event Names</i> on page 4-3.
Alarm State <i>nn</i> - OFF	The specified alarm input is no longer active on the controller, where <i>nn</i> is a number from 01 to 16.

Event Name	Meaning
BlueTOAD™	
BlueTOAD Server Connected	Centracs is communicating successfully with the BlueTOAD web server.
BlueTOAD Server Disconnected	Centracs is no longer communicating with the BlueTOAD web server, either because the BlueTOAD feature in Centracs was disabled, the BlueTOAD web server is down, or there is a comm problem.
Comm to Device	
Communication Bad - ON	The percentage of successful polls to a specific controller is lower than the value set in the FilteredCommBad Global Setting. By default, this value is set to 75, meaning that if less than 75% of the polls from Centracs to a controller are successful, communications to that controller are considered to be "bad". This event occurs at the same time as the "Communication Marginal - OFF" event.
Communication Bad - OFF	The percentage of successful polls to a specific controller is higher than the value set in the FilteredCommBad Global Setting. By default, this value is set to 75, meaning that if more than 75% of the polls from Centracs to a controller are successful, communications to that controller are no longer considered to be "bad". This event occurs at the same time as the "Communication Marginal - ON" event.
Communication Good - ON	The percentage of successful polls to a specific controller is higher than the value set in the FilteredCommMarginal Global Setting. This event occurs at the same time as the "Communication Marginal - OFF" event.
Communication Good - OFF	The percentage of successful polls to a specific controller is lower than the value set in the FilteredCommMarginal Global Setting. This event occurs at the same time as the "Communication Marginal - ON" event.
Communication Marginal - ON	The percentage of successful polls to a specific controller is lower than the value set in the FilteredCommMarginal Global Setting and higher than the value set in the FilteredCommBad Global Setting. By default, these values are set to FilteredCommMarginal=95 and FilteredCommBad=75, meaning that if 75% to 95% of the polls from Centracs to a controller are successful, communications to that controller are considered to be "marginal". This event occurs at the same time as the "Communication Good - OFF" event or the "Communication Bad - OFF" event.

Event Name	Meaning
Communication Marginal - OFF	The percentage of successful polls to a specific controller is higher than the value set in the FilteredCommMarginal Global Setting or lower than the value set in the FilteredCommBad Global Setting. By default, these values are set to FilteredCommMarginal=95 and FilteredCommBad=75, meaning that if less than 75% or more than 95% of the polls from Centracs to a controller are successful, communications to that controller are no longer considered to be "marginal". This event occurs at the same time as the "Communication Good - ON" event or the "Communication Bad - ON" event.
Coord/Cycle	
Coordination Failure - ON	A cycle fault has occurred again within two cycles after a coordination fault.
Coordination Failure - OFF	The coordination failure alarm is no longer active.
Coordination Fault - ON	The serviceable call was serviced within two cycles after the cycle fault (coordination is retried at this point).
Coordination Fault - OFF	The coordination fault alarm is no longer active.
Current Coordination Pattern	This event occurs each time a signal changes patterns.
Cycle Failure - ON	The controller is <i>not</i> running in coordination, and there is a serviceable call that has not been serviced for two cycles.
Cycle Failure - OFF	The cycle failure has been resolved.
Cycle Fault - ON	The controller is running in coordination, and there is a serviceable call that has not been serviced for two cycles.
Cycle Fault - OFF	The cycle fault has been resolved.
Local Zero	The local coordination cycle timer on the controller has reached zero for a signal running in coordination.
Transition - ON	The controller is changing to a coordinated pattern (for example, from Free to coordinated pattern 1, or from coordinated pattern 1 to coordinated pattern 3).
Transition - OFF	The controller is no longer in transition to a coordinated pattern.
Detector Diagnostics (NTCIP controllers only)	
Detector Communication Fault - ON	There is a communication problem between the controller and the detector BIU.

Event Name	Meaning
Detector Communication Fault - OFF	The communication problem between the controller and the detector BIU has been resolved.
Detector Configuration Fault - ON	<i>(Eagle controllers only)</i> The detector is enabled in the controller but there is no detector BIU at that location in the cabinet.
Detector Configuration Fault - OFF	<i>(Eagle controllers only)</i> The detector is enabled in the controller but there is no detector BIU at that location in the cabinet.
Detector Erratic Output Fault - ON	The detector is not operating; the cause is unexpected/excessive counts.
Detector Erratic Output Fault - OFF	The Erratic Output fault on the detector has been resolved.
Detector Excessive Change Fault - ON	The detector is not operating; the cause is an inductance change that was larger than the maximum expected inductance value.
Detector Excessive Change Fault - OFF	The Excessive Change fault on the detector has been resolved.
Detector Max Presence Fault - ON	The detector is not operating; the cause is a presence indicator that exceeded the maximum expected length of time.
Detector Max Presence Fault - OFF	The Max Presence fault on the detector has been resolved.
Detector No Activity Fault - ON	The detector is not operating; the cause is lower-than-expected activity.
Detector No Activity Fault - OFF	The No Activity fault on the detector has been resolved.
Detector Open Loop Fault - ON	The detector is not operating; the cause is an open loop (broken wire).
Detector Open Loop Fault - OFF	The Open Loop fault on the detector has been resolved.
Detector Other Fault - ON	The detector is not operating; the cause is NOT max presence, no activity, communication, configuration, shorted loop, watchdog, or erratic output.
Detector Other Fault - OFF	The 'Other' fault on the detector has been resolved.
Detector Shorted Loop Fault - ON	The detector is not operating; the cause is a shorted loop wire.

Event Name	Meaning
Detector Shorted Loop Fault - OFF	The Shorted Loop fault on the detector has been resolved.
Detector Watchdog Fault - ON	The detector is not operating; the cause is a watchdog error.
Detector Watchdog Fault - OFF	The Watchdog fault on the detector has been resolved.
Dynamic Message Sigr	n
Attached Device Error - ON	An error related to an external device (i.e., one that is connected to the DMS and enabled, such as a gate or external environmental sensor) is active on the DMS.
Attached Device Error - OFF	The Attached Device Error is no longer active on the DMS.
Beacon - ON	Based on the message currently shown on the sign, Centracs has determined that the beacons are flashing.
Beacon - OFF	Based on the message currently shown on the sign, Centracs has determined that the beacons are no longer flashing.
Blank Sign - ON	The "blank" message (i.e., the message specified in the Blank Message Location field on the Sign MULTI Configuration window) is active on the DMS.
Blank Sign - OFF	The "blank" message is no longer active on the DMS.
Climate Control System Error - ON	One or more of the climate control systems (for example, fans, heaters, dehumidifiers, A/C) attached to the DMS is in a failed state.
Climate Control System Error - OFF	The Climate Control System Error is no longer active on the DMS.
Control Mode Changed	The source of control of the sign changed. The Control Modes are Local, Central, and Central Override. For more information, refer to <i>Using the DMS Status Display</i> on page 9-7.
Controller Error - ON	An error related to the controller (for example, a RAM error or program/ processor error) is active on the DMS.
Controller Error - OFF	The Controller Error is no longer active on the DMS.
Critical Temperature Error - ON	A temperature sensor in the sign housing or the controller cabinet has reported that the temperature is higher than the 'high critical temperature' threshold or lower than the 'low critical temperature' threshold configured on the sign.
Critical Temperature Error - OFF	The Critical Temperature Error is no longer active on the DMS.

Event Name	Meaning
Door Open Warning - ON	The specified door to a DMS field component (cabinet or housing) is open.
Door Open Warning - OFF	The specified Open Door Warning is no longer active on the DMS.
Humidity Warning - ON	A humidity sensor in the sign housing or the controller cabinet has reported that the percent relative humidity is approaching the limits of the DMS equipment.
Humidity Warning - OFF	The Humidity Warning is no longer active on the DMS.
Lamp Error - ON	According to a lamp test, one or more lamps (such as on a fiber optic sign or front-illuminated reflective sign) is stuck on or stuck off. (This error does not apply to lamps or fluorescent lights that illuminate the housing or cabinet.)
Lamp Error - OFF	The Lamp Error is no longer active on the DMS.
Light Sensor Error - ON	One or more of the light sensors attached to the DMS is in a failed state.
Light Sensor Error - OFF	The Light Sensor Error is no longer active on the DMS.
Message Activated	The message shown on the sign has been changed to a different message.
Message Error - ON	An error related to showing a new message is active on the DMS. Examples of Message Errors are:
	<ul> <li>the priority of the new message is less than the priority of the current message</li> </ul>
	the message memory type is not supported by the device
	the message ID is invalid or not defined in the device
	the MULTI syntax is invalid
	the message is too long the message upper submitted levelly, but the sign is under control of the
	<ul> <li>the message was submitted locally, but the sign is under control of the central system</li> </ul>
	<ul> <li>the message was submitted from the central system, but the sign is under local control</li> </ul>
Message Error - OFF	The Message Error is no longer active on the DMS.
Pixel Error - ON	According to a pixel test, one or more pixels in the sign display has an illumination error (i.e., is stuck on or stuck off) or has a color error.
Pixel Error - OFF	The Pixel Error is no longer active on the DMS.

Event Name	Meaning
Power Error - ON	The DMS has reported an error related to a local power supply (e.g., battery, generator, voltage regulator, solar equipment, etc.). A Power Error can mean either that the power supply has failed, or that is it producing voltage or current outside of the expected range.
Power Error - OFF	The Power Error is no longer active on the DMS.
Temperature Warning - ON	A temperature sensor in the sign housing or the controller cabinet has reported that the temperature is higher than the 'high warning temperature' threshold or lower than the 'low warning temperature' threshold configured on the sign. These thresholds are meant to alert you of temperature changes that are of interest but that will not damage the device.
Temperature Warning - OFF	The Temperature Warning is no longer active on the DMS.
Emergency Route Pree	emption
Emergency Route Preemption Activated	Centracs received a command from an external Emergency Route Preemption system to activate an emergency route action set.
Emergency Route Preemption Deactivated	Centracs received a command from an external Emergency Route Preemption system to deactivate an emergency route action set.
Emergency Route Preemption Extended	Centracs received a command from an external Emergency Route Preemption system to continue an emergency route action set past its pre-defined duration.
Route Preempt Check Time Exceeded	The number of seconds specified in the Check Time field in the emergency route action set has elapsed, but the expected preempt or special function is not active.
Flash	
Flash: ALL OFF	The signal is no longer in flash.
Flash: ANY ON	The signal is in a flashing condition. This event is accompanied by another more detailed event that indicates why the signal is in flash.
Flash: Auto - ON	The signal is in "automatic" flash. This is a programmed flash mode set by the local TOD schedule or by a command from Centracs.
Flash: Auto - OFF	The signal is no longer in "automatic" flash.
Flash: Internal Fault - ON	The signal is in flash because the internal controller diagnostics have determined that the controller is not in a safe operational state.
Flash: Internal Fault - OFF	The signal is no longer in "internal fault" flash.

Event Name	Meaning
Flash: Local Manual - ON	The signal was manually put into flash mode using a switch at the cabinet (usually in the police access panel).
Flash: Local Manual - OFF	The signal is no longer in "local manual" flash.
Flash: MMU - ON	The signal is in flash because of a problem reported by the MMU conflict monitor (for example, a channel conflict, low voltage, SDLC fault, or other fault detected by the monitor).
Flash: MMU - OFF	The signal is no longer in "MMU" flash.
Flash: Other - ON	The signal is in flash for a reason other than startup flash, automatic flash, manual flash, MMU flash, preempt flash, or internal fault flash.
Flash: Other - OFF	The signal is no longer in flash.
Flash: Preempt - ON	The signal is in flash in order to grant right-of-way to an emergency vehicle, train, or a specific traffic movement.
Flash: Preempt - OFF	The signal is no longer in "preempt" flash.
Flash: Startup - ON	The signal is in flash because the controller is starting up following an interruption in power. The startup flash period is programmed on the controller.
Flash: Startup - OFF	The signal is no longer in "startup" flash.
Free	
Free: Bad Cycle Time - ON	The signal is in Free mode because the programmed cycle time is too short to service all minimum phase requirements.
Free: Bad Cycle Time - OFF	The signal is no longer in Free mode due to an inadequate programmed cycle time.
Free: Bad Plan - ON	The signal is in Free mode because an invalid pattern was called.
Free: Bad Plan - OFF	The signal is no longer in Free mode due to an invalid pattern.
Free: Command - ON	A command from Centracs put the signal in Free mode.
Free: Command - OFF	The signal is no longer in Free mode due to a command from the central system.
Free: Coordination - ON	The signal is in Free mode because the current coordination pattern is not programmed on the controller.
Free: Coordination - OFF	The signal is no longer in Free mode due to the coordination pattern programming.
Free: Input - ON	The signal is in Free mode because the Free input on the controller is active.

Event Name	Meaning
Free: Input - OFF	The signal is no longer in Free mode due to the Free input on the controller.
Free: Invalid Offset - ON	The signal is in Free mode because the programmed pattern offset time is longer than the programmed pattern cycle time.
Free: Invalid Offset - OFF	The signal is no longer in Free mode due to an invalid offset.
Link Threshold Exceed	ed
Link Threshold Increased to Level <i>nn</i>	The current Level of Service of the Link is in the range specified for Link Level <i>nn</i> in the Link Settings, where <i>nn</i> is a number from 1 to 10.
/ Link Threshold Decreased to Level <i>nn</i>	Level of Service is a numeric indicator of the efficiency with which the roadway is serving traffic over time. Low levels indicate free-flowing traffic or no traffic; high levels indicate traffic congestion.
	A Link Threshold event is triggered only if the Link crosses the threshold in the specified direction. For example, the "Link Threshold Increased to Level 02" event occurs only when a Link changes from Level 01 to Level 02; the "Link Threshold Decreased to Level 02" event occurs only when a Link changes from Level 03 to Level 02. This direction-based event triggering allows you to see whether traffic is increasing or decreasing.
	<b>Note</b> • For Level of Service links, the Link Threshold events are governed by the "Computational Frequency" intervals on the Link Settings window; for BlueTOAD links, these events are governed by the "Data Poll Interval" on the BlueTOAD Settings window. If the Link Threshold events are occurring too frequently (for example, if a link is bouncing back and forth between Level 1 and Level 2), change the interval to a longer period of time.
	For more information, refer to <i>Entity Configuration - Links</i> on page 3-54.
MOE Uploads	
MOE Upload Failed	Before you can run the MOE reports, data must be collected on the controllers, then uploaded to Centracs. This event indicates that an upload was attempted but was not successful. For more information, refer to <i>Using the MOE Reports</i> on page 11-1.
MOE Upload Success	Before you can run the MOE reports, data must be collected on the controllers, then uploaded to Centracs. This event indicates that an upload was attempted and that it succeeded. For more information, refer to <i>Using the MOE Reports</i> on page 11-1.

Event Name	Meaning
Pattern Monitor	
Collection Pattern Monitor Error - ON	The Signal Collection Coordination Monitor has determined that a signal in the collection (Section, Subsection, or Group) is not running the same pattern as the other signals in the collection. This event occurs if the signal is still running a different pattern when the "Time to Error" interval on the Signal Collection Coordination Monitoring Settings expires.
	Depending on how the Signal Collection Coordination Monitoring Settings are configured, Centracs may attempt to correct the pattern being run. For more information, refer to <i>Signal Collection Coordination Monitoring</i> on page 3-24.
Collection Pattern Monitor Error - OFF	This event occurs after the "Collection Pattern Monitor Error - ON" event, and indicates that the signal is now running the same pattern as the other signals in the collection.
Collection Pattern Monitor Recovered	This event occurs after the "Collection Pattern Monitor Warning" event and/or the "Collection Pattern Monitor Error - ON" event, and indicates that the signal is now running the same pattern as the other signals in the collection.
Collection Pattern Monitor Warning	The Signal Collection Coordination Monitor has determined that a signal in the collection (Section, Subsection, or Group) is not running the same pattern as the other signals in the collection. This event occurs if the signal is still running a different pattern when the "Time to Warning" interval on the Signal Collection Coordination Monitoring Settings expires.
	For more information, refer to <i>Signal Collection Coordination Monitoring</i> on page 3-24.
Pattern Monitor Compare Difference	During its normal coordination monitoring of all the signals in the system, Centracs found that the pattern being run by a specific signal does not match the expected pattern. This can occur, for example, if comms were lost and the controller reverted to its timebase schedule — when comms are restored, Centracs determines that the signal is running an unexpected pattern. When this event occurs, Centracs automatically sends the correct pattern.
Preempt	
Preempt - ALL OFF	No preempts of any type (railroad, emergency vehicle, or other) are active.
Preempt - ANY ON	A preempt of any type (railroad, emergency vehicle, or other) and any number has been activated.
Preempt Emergency Vehicle - ALL OFF	No Emergency Vehicle preempts are active.
Preempt Emergency Vehicle - ANY ON	One or more of the Emergency Vehicle preempts has been activated.

Event Name	Meaning
Preempt Emergency Vehicle <i>nn</i> - ON	The Emergency Vehicle <i>nn</i> preempt has been activated, where <i>nn</i> is a number from 01 to 12.
Preempt Emergency Vehicle <i>nn</i> - OFF	The Emergency Vehicle <i>nn</i> preempt is no longer active, where <i>nn</i> is a number from 01 to 12.
Preempt Other <i>nn</i> - ON	The Other <i>nn</i> preempt has been activated, where <i>nn</i> is a number from 01 to 10.
Preempt Other <i>nn -</i> OFF	The Other <i>nn</i> preempt is no longer active, where <i>nn</i> is a number from 01 to 10.
Preempt Railroad - ALL OFF	No Railroad preempts are active.
Preempt Railroad - ANY ON	One or more of the Railroad preempts has been activated.
Preempt Railroad <i>nn</i> - ON	The Railroad <i>nn</i> preempt has been activated, where <i>nn</i> is a number from 01 to 04.
Preempt Railroad <i>nn</i> - OFF	The Railroad <i>nn</i> preempt is no longer active, where <i>nn</i> is a number from 01 to 04.
Stuck Preempt - ALL OFF	There are no longer any stuck preempts.
Stuck Preempt - ANY ON	A preempt has been active longer than the time permitted in the 'StuckPreemptTimeout' Global Setting.
Stuck Preempt Emergency Vehicle - ON	An Emergency Vehicle preempt has been active longer than the time permitted in the 'StuckPreemptTimeout' Global Setting.
Stuck Preempt Emergency Vehicle - OFF	The stuck Emergency Vehicle preempt is no longer active.
Stuck Preempt Other - ON	An Other preempt has been active longer than the time permitted in the 'StuckPreemptTimeout' Global Setting.
Stuck Preempt Other - OFF	The stuck Other preempt is no longer active.
Stuck Preempt Railroad - ON	A Railroad preempt has been active longer than the time permitted in the 'StuckPreemptTimeout' Global Setting.
Stuck Preempt Railroad - OFF	The stuck Railroad preempt is no longer active.

Event Name	Meaning
Special Function	
Special Function <i>nn</i> - ON	The specified Special Function output on the controller is active, where <i>nn</i> is a number from 01 to 08.
	For details on how to assign meaningful names to the Special Function events, refer to <i>Changing Event Names</i> on page 4-3.
Special Function <i>nn</i> - OFF	The specified Special Function output is no longer active on the controller, where <i>nn</i> is a number from 01 to 08.
System	
Logged Status Records Dropped	For troubleshooting Server-to-Server.
Low Database Storage - Logging Suspended	The quantity of free space left on the specified drive on the server machine is very low (i.e., below the threshold set in the LowDatabaseStorageStopLogging Global Setting). Centracs does not add any more data to the logs until the available free space is higher than the LowDatabaseStorageStopLogging value again. Centracs monitors the quantity of free space every 12 hours.
Low Database Storage Space	The quantity of free space left on the specified drive on the server machine is low (i.e., below the threshold set in the LowDatabaseStorageWarning Global Setting). Centracs monitors the quantity of free space every 12 hours.
New Traffic Algorithm Pattern	The Traffic Algorithm action is running (for example, via the scheduler or a manual command), and the results of the calculations caused Centracs to send a new pattern to the signal(s).
Threshold TR Fault	A problem occurred during calculation of a Traffic Responsive algorithm. This can occur, for example, if the algorithm is not configured correctly, or if there is not sufficient good detector data to make the calculations.
User Logged Off	The specified user logged out of the Centracs application.
User Logged On	The specified user logged in to the Centracs application.
Transit Signal Priority	
Transit Signal Priority: Active	A Transit Signal Priority call is being served (i.e., the controller is either serving the priority phase or is reducing the preceding phase(s) in order to start the priority phase sooner). When this event occurs, the Transit Signal Priority icon on the map and status display (if configured) is shown in green.
Transit Signal Priority: Call	A Transit Signal Priority call has been requested and is pending. When this event occurs, the Transit Signal Priority icon on the map and status display (if configured) is shown in blue.

Event Name	Meaning	
Transit Signal Priority: Inhibit	A Transit Signal Priority call has been ignored. This can occur if a preempt or special function is already in effect, or if the number of cycles since the last TSP call is less than the minimum Reservice Cycles defined on the controller. When this event occurs, the Transit Signal Priority icon on the map and status display (if configured) is shown in red.	
Transit Signal Priority: Off	The Transit Signal Priority call completed or was stopped (for example, due to a preempt). When this event occurs, the Transit Signal Priority icon is not shown on the map or status display.	
<b>Note</b> • For ASC/3 and Cobalt controllers, <i>Centracs</i> receives the Transit Signal Priority events from the controller only if the "asc3KingCountyTSPStatus" object is included in the poll packet. Refer to <i>Configuring Polling Packets</i> on page 20-50.		
For ASC/2 controllers, details.	refer to the "EnableASC2TSP" Global Setting in <i>Centracs</i> for configuration	
Unit Control Mode		
Unit Control: Backup Mode - ON	The controller is operating under local time-of-day/time-based control due to the absence of commands from Centracs (for example, because Centracs is offline).	
Unit Control: Backup Mode - OFF	The controller is no longer operating in Backup mode.	
Unit Control: Interconnect - ON	The controller is under the control of external (hardwire interconnect) coordination inputs and outputs.	
Unit Control: Interconnect - OFF	The controller is no longer operating under Interconnect control.	
Unit Control: Interconnect Backup - ON	The controller is operating under local TOD control due to a problem with Interconnect control.	
Unit Control: Interconnect Backup - OFF	The controller is no longer operating under Interconnect backup control.	
Unit Control: Manual - ON	The controller is operating under local manual control.	
Unit Control: Manual - OFF	The controller is no longer operating under local manual control.	

Event Name	Meaning
Unit Control: Other - ON	The controller is operating in a mode other than Backup, Interconnect, Interconnect Backup, Manual, System, System Standby, or Time Base (for example, the "Other" mode may be reported while the controller starts up, or while the System Pattern Override feature is in effect).
Unit Control: Other - OFF	The controller is no longer operating in a mode other than Backup, Interconnect, Interconnect Backup, Manual, System, System Standby, or Time Base.
Unit Control: System - ON	The controller is running a pattern or other command sent from Centracs.
Unit Control: System - OFF	The controller is no longer running a pattern or other command sent from Centracs.
Unit Control: System Standby - ON	The controller has been commanded by Centracs to be under local control (i.e., Centracs sent a command to cancel any prior commands from Centracs).
Unit Control: System Standby - OFF	The controller is no longer operating in Standby mode.
Unit Control: Time Base - ON	The controller is operating under local time-of-day/time-based control.
Unit Control: Time Base - OFF	The controller is no longer operating under local time-of-day/time-based control.
Unit/Controller	
24 VDC Failure - ON	An alarm has been activated on the MMU to indicate the loss of sufficient voltage.
24 VDC Failure - OFF	The voltage alarm has been resolved.
Conflict - ON	The conflict monitor (or MMU) has sensed that the green, walk, or yellow indications are active at the same time on conflicting channels.
Conflict - OFF	The Conflict fault has been reset.
Controller Comm to Conflict Monitor Fail - ON	There is a problem with communications between the controller and the MMU (conflict monitor).
Controller Comm to Conflict Monitor Fail - OFF	The communications problem between the controller and the MMU (conflict monitor) has been resolved.
Controller Database Changed	A user downloaded changes from the signal editor to the controller.

Event Name	Meaning
Detector Fault - ON	This generic event indicates that a detector fault has occurred. If enabled, the other detector fault events (such as "Detector Max Presence Fault - ON") show the type of fault that occurred.
Detector Fault - OFF	A detector fault has been resolved. If enabled, the other detector fault events (such as "Detector Max Presence Fault - OFF") show the type of fault that was resolved.
Local Override - ON	The Local Override alarm on the controller has been activated — i.e., the program on the controller or an external input will not permit the controller to accept a pattern command from the system.
Local Override - OFF	The Local Override alarm on the controller has been resolved.
Low Battery - ON	The Low Battery alarm on the controller has been activated.
Low Battery - OFF	The Low Battery alarm on the controller has been resolved.
Main Street Green - ON	The main street phases for the intersection are green.
Main Street Green - OFF	The main street phases for the intersection are no longer green.
Power Restart	Power has been restored to the controller after an interruption in power.
Response Fault - ON	The Response Fault alarm on the controller has been activated to indicate a response frame fault.
Response Fault - OFF	The Response Fault alarm on the controller has been resolved.
Side Street Green - ON	The side street phases for the intersection are green.
Side Street Green - OFF	The side street phases for the intersection are no longer green.
Signal Database Compare Difference	Indicates that the "Signal Upload and Compare" action ran for the specified signal. The event details provide a list of parameter segments in which Centracs found differences between the settings on the controller and the settings stored in the Centracs database. You can also view these results in the Signal Upload and Compare report (refer to page 10-44).
Stop Time - ON	The Stop Time input on the controller has been activated to indicate that the controller timing has been stopped to diagnose a fault.

Event Name	Meaning
Stop Time - OFF	The Stop Time input on the controller is no longer active.
Time Drift Value Exceeded	The Time Drift Check action reported that the current time on the controller differed from the current time on the Centracs server by more than the "Maximum drift" value used when running the Time Drift Check.

Alerts

# Alerts

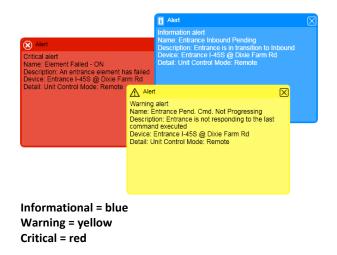
Centracs can generate three types of alerts, shown here in the order of severity:

- Critical
- Warning
- Informational

You can configure alerts to pop up on the screen for one or more online users; you can also configure Centracs to send them to offline personnel via email or SMS text message.

## Pop-up Alerts

Depending on how your system is configured, you may see a "toast" pop-up at the bottom of the screen when an alert is triggered. Shown below are examples of the three types of toast pop-ups:



Only one alert pop-up is shown on the screen at any one time. Therefore, if multiple alerts occur at the same time, you may not see a pop-up for each one. To see all alerts, open the Alert List (refer to *Using the Alert List* on page 4-22).

**Note** • When you click the alert pop-up, this does *not* acknowledge or close the alert. Refer to *Acknowledging and Closing Alerts* on page 4-32.

# **Offline Alerts**

If configured to do so, Centracs will send alerts to specified personnel via email and/or SMS text message. These offline alert recipients can reply back to Centracs to acknowledge, close, or unacknowledge an alert.

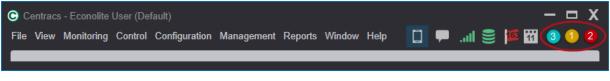
Alert Status Bar

If an alert is updated with a new Ack State (i.e., if it has been acknowledged, closed, or unacknowledged), a follow-up alert is sent to the original offline recipients to notify them of the alert's new status. For example, if an alert is sent via email to an offline recipient, then acknowledged, and then closed, that recipient will receive a total of three emails for that alert.

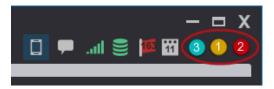
**Note** • Before Centracs can send offline alerts, your system administrator must configure this capability.

### Alert Status Bar

You can easily determine the number of alerts at any given time with a glance at the alert status bar in the upper-right corner of the Centracs main window:



The circled indicators above represent the number of current alerts — in this case, six. The alerts are categorized into three types:



The number in each circle shows the count of current alerts for that type. If there are no alerts of a specific type, no number is shown in the corresponding circle, and the circle is dark.

When there are unacknowledged alerts, the Warning and Critical indicators blink to call your attention. When all of the alerts of a specific type have been acknowledged, that indicator stops blinking. Informational alerts are considered to be acknowledged on receipt, so the Informational indicator does not blink. To manually stop an indicator from blinking, right-click it.

To see details about the alerts, left-click one of the three indicators in the alert status bar to open the Alert List for that alert type. Or to see all alerts of all types, select **Monitoring ▶ Alerts...** from the main menu. For instructions on how to use the Alert List, refer to page 4-22.

Using the Alert List

# **Using the Alert List**

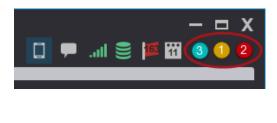
You can use the Alert List to monitor, acknowledge, and close alerts.

#### To open the Alert List:

► To see all alerts of all types, select **Monitoring** ► **Alerts...** from the main menu.

Or

To see only Informational, Critical, or Warning alerts, click the corresponding circle in the alert status bar in the upper-right corner of the Centracs main window:



Warning

alerts

Informational alerts

Critical alerts

#### The Alert List window opens.

Alert List						
Ack Selected Ack All Close Selected Close New Close Acked Close All						
Criticality	Trigger	Device	Name		Acknowledge State	Created
🗌 New						
8	Ÿ	Signal Woodmen @ Interstate 25 (West)	Comms Bad - ON	New	🗸 Ack 🗙 Close	1/4/2011 9:35 AM
Δ	Ş		Threshold TR Fault	New	🗸 Ack 🔀 Close	1/5/2011 12:20 PM
Ackno	wledge	d				
	¥		Threshold TR Fault	Ack'd	👌 UnAck 🗙 Close	12/29/2010 11:40 AM
i	Ş	Signal Woodmen @ Interstate 25 (West)	Comms Bad - OFF		Close	1/6/2011 8:24 PM
i	Ş	Signal Woodmen @ Rockrimmon	Preempt EV 1 ON		Close	1/4/2011 10:33 AM
i	Ş	Signal Woodmen @ N Union	Detector Fault OFF		Close	1/4/2011 10:31 AM
i	Ş	Signal Woodmen @ N Union	Detector Fault		Close	12/29/2010 1:09 PM
	_			_		

New, unacknowledged alerts are shown in the top section of the window; acknowledged alerts and Informational alerts are shown in the bottom part of the window.

Within each section of the window, you can click a column header to sort the alerts by that column.

Using the Alert List

To see the current age of an alert, hold your mouse over the Created field for that alert. For example:

X Close	4/4/2011 2:19 PM
X Close	4/4/2011 Item is 3 hrs 11 mins old.
X Close	4/4/2011 2:17 PM

The icon in the Trigger column shows the type of trigger that generated the alert:

I = an "Occurs once" trigger
<pre># = an "Occurs times in minutes" trigger</pre>
🕑 = an "Active for minutes" trigger

**Note** • The Alert List you see does not necessarily reflect all existing alerts — you only see the alerts for which you are a designated online recipient.

#### To see more details about an alert:

• Double-click an entry in the Alert List. The Alert Details window opens.

Alert Detail	
Alert ID:	129
Criticality:	i Information
Name:	Detector Fault
Description:	
Acknowledge State:	Acknowledged
Acknowledged by:	
Event Trigger Type:	💡 Single Instance
Device:	Signal Woodmen @ N Union
Triggering Event Type:	Detector Fault - ON
Event Raise Time:	12/29/2010 1:09:44 PM
Detail:	
Event Trigger Details:	Single instance of event, no duration.
[	Close Alert
	Close

To open the Entity Status display, you can click to the right of the Device field. Refer to *Using the Signal Status Display* on page 6-1.

Using the Alert List

To remove the alert from the Alert List, click **X Close Alert**.

**Note** • The "CoreAlertCap" Global Setting controls the maximum number of alerts for a given event type that can be in the Alert List at one time for a particular entity (the default is 20). After the maximum is reached, Centracs closes any new occurrences of the alert. To see these alerts that Centracs closed automatically, run the Alerts Log (refer to page 10-18).

Centracs generates alerts only if one or more alert "triggers" have been added. A trigger specifies which events will trigger alerts. In addition to alerts, triggers can also launch other actions, such as CCTV Preset, Generate Report, or Set Pattern.

**Note** • In order for an event type to trigger an alert or action, you must enable that event type in the Alerts and Events window. Refer to *Events* on page 4-2.

When you add a trigger, you can select from three event trigger types, three severity levels, and three notification mechanisms:

Event Trigger Types	Severity Levels	Notification Methods
Occurs once	Information	Online
Occurs times in minutes	Warning	Email
Active for minutes	Critical	SMS (text messaging)

**Note** • The capability to send email & SMS alerts must first be configured by your system administrator.

### To add a new trigger:

1 From the main menu, select **Configuration ►** Alerts and Events... The Alerts and Events window opens, along with any triggers that have already been added.

- Ale	Alerts and Events					
Tri	Triggers Alert Escalations Events					
	Add Edit Delete					
Ena	bled	ed Name Event Action Description				
	/	CRITICAL: Comm Problem	Communication Bad - ON	Alert	Any entity; all online users, all offline supervisors	
	1	CRITICAL: Temp. Error on Sign	Critical Temperature Error - ON	Alert	Any DMS; all online users, two offline users	
	/	INFO: Comm Problem Resolved	Communication Good - ON	Alert	Any entity; all online users	
	/	INFO: Message Activated on Sign	Message Activated	Alert	Any DMS; all online users	
	/	WARNING: Door Open on Sign Door Open Warning - ON Alert Any DMS; all online users				

2 Click Add. The Trigger Editor window opens.

Trigger Editor	
Trigger Properties	
Name:	Enable
Description:	
Triggering Event	
	•
Entity Filter	
Event Trigger Type	
Occurs once	
○	
O C Active for minutes	
Action	
Type: Alert	•
Criticality: i Information -	
Recipients: All Online Users	
ОК	Cancel

- 3 Below Trigger Properties, enter a name and description for the new trigger.
- 4 For this trigger to be active immediately, check the Enable checkbox; for the trigger to be disabled temporarily, uncheck the Enable checkbox.
- 5 Below Triggering Event, open the dropdown list and find the type of event that will cause this trigger to run. For a description of each event type, refer to *Events* on page 4-2.
- 6 If this trigger must run only for specific entities, click to the right of the Entity Filter box and select one or more entities in the Entity Selection list, then click **OK**. If this trigger will run for all entities, leave the Entity Filter box empty. For instructions on how to select entities, refer to *Using the Entity Selection Window* **on page 3-18**. (If the trigger is for an event type that does not involve entities, such as the "Low Database Storage Space" event, the Entity Filter box is not shown.)

- Using Triggers •
- **7** Below Event Trigger Type, specify how frequently the event must occur before the trigger will run:
  - Occurs once If the specified event occurs one time for the specified entity/ entities, the trigger will run. For example, you can set up a trigger to run any time a signal goes into flash.
  - Occurs <u>times in minutes</u> If the specified event occurs the specified number of times in the specified number of minutes, the trigger will run. For example, you can set up a trigger to run if communications to a controller are "bad" more than one time in 30 minutes.
  - Active for \_\_\_\_ minutes If the specified event occurs but does not resolve within the specified number of minutes, the trigger will run. For example, you can set up a trigger to run if communications to a controller are in the "marginal" state for more than 5 minutes.
- 8 From the Type dropdown in the Action box, specify what will occur when this trigger runs. For example:

Action	Steps
To trigger an alert	<ol> <li>Expand the "Alerts" list of actions from the Type dropdown and select Alert (if it is not already selected).</li> </ol>
	2 Specify the severity of the alert (Information, Warning, or Critical).
	3 Click to the right of the Recipients field to specify the people who will receive the alert (the default is all online users). For details, refer to <i>Selecting Recipients</i> on page 4-43.
To trigger an alert escalation	Expand the "Alerts" list of actions from the Type dropdown and select one of the alert escalations that have been added to your system. (If no escalations have been set, no escalations are shown in this list.)
	When you select an escalation, the details of that escalation are shown.
	For more information, refer to <i>Escalating Alerts and Tickets</i> on page 4-34.

Action	Steps
To trigger a CCTV preset	1 Expand the "Common" list of actions from the Type dropdown and select CCTV Preset.
	2 Click to the right of the Selected Users field to specify the users to whom the preset will be shown. On the User Selection window, to select multiple users at a time, hold the Ctrl or Shift key while you select them; to select all users, press Ctrl-A. After you have made your selections, click to move them to the "Selected" side of the window, and click OK. To see an example, refer to page 7-26.
	<ul> <li>Click to the right of the Selected Preset field to specify the camera preset. The CCTV Preset Selection window shows all the cameras that are defined in the Genetec server. Expand the list for the appropriate camera, select one of the presets, and click OK. To see an example, refer to page 8-12.</li> <li>Note • For more details about how to set CCTV presets, refer</li> </ul>
	to Defining and Maintaining Presets on page 8-6.
To trigger other actions	1 Expand the "Common", "DMS", or "Action Sets" list of actions from the Type dropdown and select an action.
	2 For details about each action type, refer to <i>Action Types</i> in Appendix A.

For example:

Trigger Editor				
Trigger Prope	rties			
Name:	WARNING - Possible Comm Problem	Enable		
Description:	Any entity, >= 2 minutes; all online users, two offi	ine users		
Triggering Eve	ent			
Communic	cation Marginal - ON	-		
Entity Filter:				
Event Trigger	Туре			
Occurs	once			
O 🗊 Occur	rs times in 2 minutes			
	e for 2 minutes			
	sion 2 minutes			
Action				
Type: Alert				
Criticality:	Warning -			
Recipients:	Chips O'Toole 🛛 🔀 Emil Schaufhausen 🕅			
	All Online Users			
	ОК	Cancel		

9 For some actions, such as Set Pattern, three more fields are shown:

Action Type: Set Pattern
Pattern 1 Offset 1 Free Fash Clear/Local Entities
<ul> <li>Include the entity that caused the event in the action's entities</li> <li>Priority</li> <li>Manual Command          Scheduled</li> </ul>
Timing
<ul> <li>Don't stop</li> </ul>
◯ Stop in 0 minute(s) ▼
OK Cancel

### These fields are:

Action	Steps
Include the entity that caused the event	If you selected one or more entities in the Entity Filter field above, you can select this option to use the same entities for the Action. For example:
	<ul> <li>if the Triggering Event is a "Preempt - ALL OFF" event for Subsection 101, and</li> </ul>
	if the Action is "Set Pattern", and
	<ul> <li>if the "Include the entity that caused the event" option is enabled</li> </ul>
	then when a preempt ends for any signal in Subsection 101, Centracs automatically sends a Set Pattern command to all the signals in Section 101.
Priority	Specify whether the Action will run in the scheduler (with "Normal" priority) or run as a manual command. This determines the priority of the Action. For more information, refer to <i>Action Priorities</i> on page 20-4. If you do not want the triggered Action to override a manual command that is already running, set the Priority to "Scheduled". If you want the triggered Action to override all other commands that are already running, set the Priority to "Manual Command".
Timing	Specify when the Action will end:
	<ul> <li>Don't stop – the action will run indefinitely, until it is deleted manually.</li> </ul>
	<ul> <li>Stop in – specify the duration of the command in minutes or hours.</li> </ul>

**10** To save the trigger, click **OK**.

- Alerts	Alerts and Events						
Trigg	Triggers Alert Escalations Events						
Add	Add Edit Delete						
Enable	ed Name	Event	Action	Description			
	CRITICAL: Comm Problem	Communication Bad - ON	Alert	Any entity; all online users, all offline supervisors			
	CRITICAL: Temp. Error on Sign	Critical Temperature Error - ON	Alert	Any DMS; all online users, two offline users			
	INFO: Comm Problem Resolved	Communication Good - ON	Alert	Any entity; all online users			
	INFO: Message Activated on Sign	Message Activated	Alert	Any DMS; all online users			
	WARNING: Door Open on Sign	Door Open Warning - ON	Alert	Any DMS; all online users			
	WARNING: Possible Comm Problem	Communication Marginal - ON	Alert	Any entity, >= 2 minutes; all online users, two offline			

The new trigger is shown in the Triggers tab of the Alerts and Events window.

Optionally, you can set up more triggers for the same event. If there are multiple triggers for an event, all triggers will run at the same time. For example, if you set up one trigger to send an alert, one trigger to launch a CCTV preset, and one trigger to generate a report, all three of these actions will be started immediately when the triggering event occurs.

**Note** • If you are having trouble with offline alerts or offline alert acknowledgements, refer to *Troubleshooting Offline Alerts* on page 20-82.

#### To change a trigger:

- 1 From the main menu, select **Configuration ►** Alerts and Events... The Alerts and Events window opens, along with any triggers that have already been added.
- 2 Click the alert to change and click Edit. The Trigger Editor window opens.
- **3** Make the necessary changes, then click **OK**.

#### To delete a trigger:

- 1 From the main menu, select **Configuration ►** Alerts and Events... The Alerts and Events window opens, along with any triggers that have already been added.
- 2 Click the alert to remove and click **Delete**.
- 3 If a confirmation window opens, click **Yes**. The trigger is removed from the database.

#### To disable or enable a trigger:

- 1 From the main menu, select **Configuration ►** Alerts and Events... The Alerts and Events window opens, along with any triggers that have already been added.
- 2 In the Enabled column, click the checkbox for the appropriate trigger to toggle the setting:
  - checked = the trigger is active and will run when the triggering event occurs
  - unchecked = the trigger is disabled and will not run when the triggering event occurs

Acknowledging and Closing Alerts

# **Acknowledging and Closing Alerts**

An online user or an offline recipient must acknowledge Warning alerts and Critical alerts. This lets other personnel know that someone is aware of the alert and is presumably taking action (if necessary). If your system is configured to do so, unacknowledged alerts are automatically escalated to another recipient or set of recipients. Closing an alert lets other personnel know that the issue has been resolved.

**Note** • Informational alerts do not require acknowledgement — they are considered to be acknowledged on receipt. The only exception is if an alert escalation is configured for an Informational alert; in this case, acknowledgement is required in order to stop the escalation.

You can acknowledge, close, or unacknowledge alerts:

- When you acknowledge an alert, it moves from the top section of the Alert List to the bottom section, and escalation stops (if an escalation is defined for the alert).
- When you close an alert, Centracs removes it from the Alert List for all offline users, and escalation stops (if an escalation is defined for the alert). Closed alerts are still included in the Alerts Log report. After an alert is closed, you cannot re-open it.
- When you unacknowledge an alert, it moves from the bottom section of the Alert List to the top section, and escalation continues (if an escalation is defined for the alert). To continue an escalation, you can unacknowledge *any* of the alerts in the escalation.

It is only necessary for one person to acknowledge/close an alert. This can be an online user or an offline recipient.

#### To acknowledge, close, or unacknowledge one or more online alerts:

**Note** • It does NOT acknowledge or close the alert when you click the online alert "toast" pop-up.

Alert Lis	t					
Ack Selected Ack All Close Selected Close New Close Acked Close All						
Criticality	Trigger	Device	Name		Acknowledge State	Created
🗆 New						
8	Ş	Signal Woodmen @ Interstate 25 (West)	Comms Bad - ON	New	🗸 Ack 🛛 🗙 Close	1/4/2011 9:35 AM
	ş		Threshold TR Fault	New	🗸 Ack 🗙 Close	1/5/2011 12:20 PM
Ackno	wledge	d				
	¥		Threshold TR Fault	Ack'd	👌 UnAck 🗙 Close	12/29/2010 11:40 AM
i	Ş	Signal Woodmen @ Interstate 25 (West)	Comms Bad - OFF		Close	1/6/2011 8:24 PM
i	Ş	Signal Woodmen @ Rockrimmon	Preempt EV 1 ON		Close	1/4/2011 10:33 AM
i	Ş	Signal Woodmen @ N Union	Detector Fault OFF		Close	1/4/2011 10:31 AM
i	Ş	Signal Woodmen @ N Union	Detector Fault		Close	12/29/2010 1:09 PM

**1** Open the Alert List (refer to page 4-22).

- Acknowledging and Closing Alerts •
- 2 Acknowledge, close, or unacknowledge alerts in any of these ways:
  - Double-click an alert to see its details, then click Acknowledge, Close Alert, or UnAck, as appropriate. (Only the options that are valid for the chosen alert are shown; for example, for an alert that has already been acknowledged, UnAck is shown but Acknowledge is not.)
  - To the right of an alert, click **Ack**, **Close**, or **UnAck**.
  - Right-click an alert and select an option from the pop-up menu.
  - To select multiple alerts, hold the Ctrl or Shift key as you click the alerts, then click Ack Selected or Close Selected to acknowledge or close all of the selected alerts.
  - Click Close New to close all alerts in the "New" section of the window without acknowledgement.
  - Click **Close Acked** to close all alerts in the "Acknowledged" section of the window.
  - Click Ack All or Close All to acknowledge or close all alerts in the list, regardless of their status.

#### To acknowledge, close, or unacknowledge an offline alert:

Reply to the original email or SMS alert with a command of "ack", "close", or "unack". (These are not case-sensitive.) You must also include the alert ID in order for Centracs to apply the command to the correct alert. You can find the alert ID at the bottom of the original alert message. If your email/SMS is configured to include the text from the original alert, you only need to add the "ack", "close", or "unack" command at the beginning of your reply. If your email/SMS is not configured to include the text from the original alert, you must add the alert ID to your reply. For example:

close 112

**Note** • If Centracs finds more than one valid command in your reply, it uses the first and ignores any others.

When an offline alert is acknowledged, closed, or unacknowledged, a follow-up alert is sent to the original offline recipients to notify them of the new alert status. For example, if an alert is sent via email to an offline recipient, and then acknowledged, and then closed, that recipient will receive a total of three emails for that alert.

**Note** • If you are having trouble with offline alerts or offline alert acknowledgements, refer to *Troubleshooting Offline Alerts* on page 20-82.

# **Escalating Alerts and Tickets**

For cases in which an alert or ticket alert is not acknowledged or closed within a reasonable period of time, you can configure Centracs to automatically send it to a different recipient or set of recipients. You can set up multiple levels of escalation, such that an alert continues to escalate until someone acknowledges or closes it.

Each time an alert is escalated to a new level, a new alert is added to the system. For example, say you define an alert escalation where the first level is a Warning alert to all online users and the second level is a Critical alert to multiple offline users. If the original Warning is not acknowledged or closed within the specified amount of time, another alert is added to the system with a criticality of Critical.

Escalation stops when someone acknowledges or closes the alert at any of its escalation levels. In our example, even if the alert has already escalated to the second level (Critical), someone can acknowledge the Warning alert at the first level and the escalation stops. In this case, Centracs changes both alerts to "Acknowledged". To continue an escalation, you can unacknowledge *any* of the alerts in the escalation.

**Note** • Although Centracs does not require Informational alerts to be acknowledged, you can add an alert escalation that requires an Informational alert to be acknowledged or closed in order to stop the escalation.

#### To add a new alert escalation:

- 1 From the main menu, select **Configuration ► Alerts and Events...** The Alerts and Events window opens.
- 2 Click the Alert Escalations tab.

Any escalations that have already been defined are shown in table format.

<ul> <li>Alerts and Events</li> </ul>		
Triggers Alert Escalation	opy Delete	
Name	Description	
Comms Marginal	Escalate after 5 minutes	

3 Click Add.

The Alert Escalation Editor opens.

Alert Escalation Editor			
Name: Add Actions	Description:	MMS De	fault
			٦
		OK Can	cel

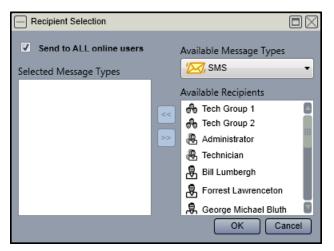
- 4 Enter a name, and optionally, a description, for the alert escalation.
- 5 If this escalation will be used for MMS ticket alerts, turn on the "MMS Default" option. Otherwise, leave this option turned off. For more information about ticket alerts, refer to *Alerts for MMS Tickets* on page 4-41.
- 6 Click Add.

A set of escalation detail fields is shown.

- Alert Es	calation Editor				
Name: C	omms Bad	Description:	Escalate after 1 min	ute 🗌 MMS Def	ault
Add					
Actions					_
				<u>n</u> v D	
Criticalit	y: 🚺 Infor	mation 🔻			
Alert Na	me:				
Descript	tion:				
Recipier	nts: All Onlin	e Users			
			C	OK Canc	el

- 7 Select the criticality level for the first alert (Informational, Warning, or Critical). For example, you can first send a Warning alert to all online users; if the Warning is not acknowledged, you can then send a Critical alert to more personnel.
- 8 Enter a name, and optionally, a description for the first alert. These will be shown in the details of the actual alerts that are generated, as well as the Alerts Log report (page 10-18).

- Escalating Alerts and Tickets



- **10** Select the recipient(s) of the first alert. For instructions on how to use the Recipient Selection window, refer to *Selecting Recipients* on page 4-43.
- **11** To save your selections, click **OK**.

- Alert Escalati	ion Editor		
Name: Comm Add Actions	is Bad Description:	Escalate after 1 minute	MMS Default
Criticality:	🔥 Warning 🔻		
Alert Name:	Communications Prob	lem - WARNING	
Description:	Ack within one minute	to avoid escalation	
Recipients:	All Online Users		
		0	K Cancel

- 12 Now that the initial alert has been defined, click **Add** again to add another level to your escalation. Each alert escalation must have at least two levels.
- **13** As in the previous steps, specify the criticality level, name, description, and recipient(s) for this level of the escalation.

<ul> <li>Alert Escalati</li> </ul>	on Editor		
Name: Comm Add Actions	s Bad Description:	Escalate after 1 minute	MMS Default
Criticality:	🔥 Warning 🔹		
Alert Name:	Communications Probl	lem - WARNING	
Description:	Ack within one minute	to avoid escalation	
Recipients:	All Online Users		
		00:05	
Criticality:	😢 Critical 🔹 👻		
Alert Name:	Communications Probl	lem - STAGE 2	
Description:	Warning alert was not	ack'd by online users wh	in one minute
Recipients:	Phineas T. Prune [ All Online Users	🛛 🔀 Sue Sylvester 🛛	
		0	Cancel

The green arrow shown between the escalation levels specifies the interval of time (in HH:MM format) that Centracs will wait for acknowledgement of the alert before it triggers the next escalation level. For example, if set to 00:05 (the default), the online users have five minutes to acknowledge the Warning alert. If five minutes pass without an acknowledgement, a Critical alert will automatically be sent to the specified recipients.

**14** To change the time interval between these two alert levels, click the green arrow. The Escalation Configuration window opens.

	Alon Marile.	Communications Pro	oblem - WARNING		
4	Description:	Ack within one minu	te to avoid escalation		
l	Recipients:	All Online Users			
I		4	00:05		
I					
I	Criticality:	😢 Critical 🔹	Escalation Configuration		
I	Alert Name:	Communications Pr			
ı	Description:	Warning alert was n	Time before escalation: 00:05	HH:MM fo	rmat.
l	Recipients:	Phineas T. Prun All Online Users	10	K Ca	ancel
L			ОКС	ancel	

- **15** Enter the time in HH:MM format, where HH is hours and MM is minutes, then click **OK**.
- **16** Repeat the previous steps to add as many escalation levels as necessary.

Alert Escalati	ion Editor
Name: Comm	is Bad Description: Escalate after 1 minute MMS Default
Add Actions	
Criticality:	Murning -
Alert Name:	Communications Problem - WARNING
Description:	Ack within one minute to avoid escalation
Recipients:	All Online Users
	00:01
Criticality:	Critical -
Alert Name:	Communications Problem - STAGE 2
Description:	Warning alert was not ack'd by online users within one minute
Recipients:	Phineas T. Prune     Sue Sylvester       All Online Users
	OK Cancel

If it is necessary to rearrange the levels, you can use the up and down arrows, circled in red below:

#### **17** Click **OK**.

The new alert escalation can now be specified by name in an alert trigger. For more information, refer to *Using Triggers* on page 4-25.

If it is necessary to add more alert escalations that are similar to the first, you can use the existing Escalation as a template. For details, refer to the next section on how to copy alert escalations.

**Note** • If you are having trouble with offline alerts or offline alert acknowledgements, refer to *Troubleshooting Offline Alerts* on page 20-82.

#### To add a new alert escalation from a copy:

- 1 From the main menu, select **Configuration ► Alerts and Events...** The Alerts and Events window opens.
- **2** Click the Alert Escalations tab.

Triggers Alert Escalations Events					
Add Edit Copy Delete					
Name	Description				
Comms Marginal	Escalate after 5 minutes				
Comms Bad	Escalate after 1 minute				

**3** Click the Escalation to copy, then click **Copy**. The Alert Escalation Editor opens.

<ul> <li>Alert Escalati</li> </ul>	on Editor		
Name: Comm	s Bad Description	n: Escalate after 1 minute	MMS Default
Actions			
Criticality:	🔥 Warning 🔹 👻		
Alert Name:	Communications Pro	blem - WARNING	
Description:	Ack within one minu	te to avoid escalation	
Recipients:	All Online Users		
		00:01	
Criticality:	😢 Critical 🔹 👻		
Alert Name:	Communications Pro	oblem - STAGE 2	
Description:	Warning alert was n	ot ack'd by online users with	nin one minute
Recipients:	Phineas T. Prun All Online Users	e 🛛 🔀 Sue Sylvester 🛛	
		0	K Cancel

4 Make the appropriate changes to the name, description, and escalation levels, then click **OK**.

### Alerts for MMS Tickets

In Centracs MMS, you can configure the system so that when a ticket is created or reassigned, the assigned person automatically receives notification via email or SMS text message.

### To configure MMS ticket alerts:

- 1 Add a new alert escalation (for details, refer to page 4-34).
- 2 On the Alert Escalation Editor window, turn on the "MMS Default" option.
- 3 In the first level of the escalation, for the Recipients field, select "Assigned User" from the Available Recipients list. Use the Available Message Types dropdown to specify whether to send an email or SMS text message (or both) to the assigned user.
- 4 Complete the other fields as appropriate (for details, refer to page 4-34). For the Criticality field, select either Warning or Critical. PR 26567
- **5** In the second level (and subsequent levels) of the escalation, specify the users to be notified if the assigned user does not acknowledge the ticket. Refer to the sample escalation on page 4-42.
- 6 On the Recipient window, make sure each potential ticket recipient has an email address and/or SMS address defined. For details, refer to *Defining Recipients* on page 20-73.
- 7 In the On-Call Scheduler, make sure each potential ticket recipient is set to be "on call" at the appropriate days and times. A recipient will not receive an alert (or an alert escalation) if they are not on call, even if the ticket is assigned to them. For details, refer to *Using the On-Call Scheduler* on page 19-27.

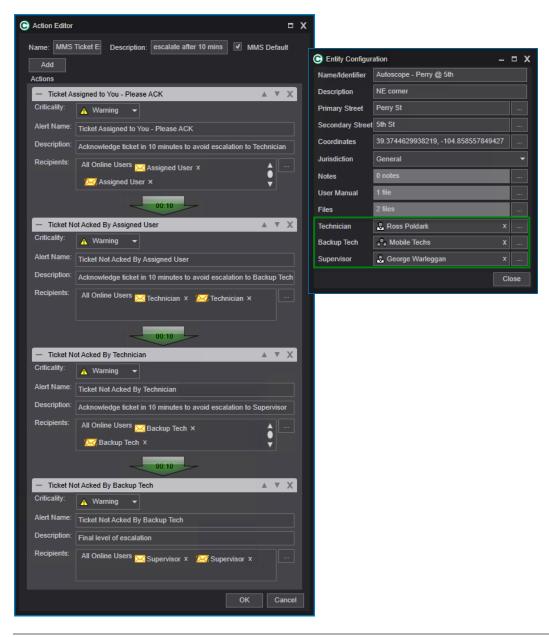
### Tips

- To troubleshoot ticket alerts, refer to Setting Up Email/SMS Capability on page 20-66 to make sure the system has been configured properly.
- If the "toast" settings are turned on, all online users see a toast popup when a ticket is added, when a ticket is reassigned, or when the Location field is changed on a ticket. For information on the toast settings, refer to page 20-54.
- For the Recipients field, none of the escalation levels should have "All Online Users" as the *only* recipient.
- It is not necessary for a user to be in a User Group in order to receive alerts for tickets assigned to them.
- When a recipient receives a ticket alert, replying with "CLOSE" closes the ticket, and replying with "ACK" changes the ticket to "Accepted" status. For more details, refer to Acknowledging and Closing Alerts on page 4-32.
- If a ticket alert cannot be sent due to a configuration problem, a "Ticket Alert Escalation Failed" entry is added to the System Activity report (page 10-50).

Alerts for MMS Tickets

### Sample Alert Escalation for MMS Tickets

The following sample setup for MMS ticket alerts (*below left*) assumes that you configured the Entity Configuration window for your MMS Locations to use the Technician, Backup Tech, and Supervisor shared fields, as shown in this sample window (*below right*):



**Note** • For information on how to add the Technician/Backup Tech/Supervisor shared fields to the Entity Configuration window, refer to *Using the Type and Field Definitions Window* on page 19-5.

In the alert escalation levels shown here (*above left*), the Assigned User, Technician, Backup Tech, and Supervisor values are dynamic, and they will pull the appropriate user(s) from the Entity Configuration window for the Location associated with the ticket (or in the case of Assigned User, from the ticket itself). In this case, when a ticket is added (or

Selecting Recipients •

reassigned) for the MMS Location named "Autoscope - Perry @ 5th", the user assigned to the ticket will be alerted first. If he or she does not acknowledge or close the ticket within 10 minutes, the Technician (in this case, Ross Poldark) will be notified that the assigned user did not respond. If the Technician does not acknowledge or close the ticket within the next 10 minutes, the Backup Technician (in this case, a user group called Mobile Techs) will be notified, and so on.

**Note** • If the Technician, Backup Tech, and/or Supervisor fields on the Entity Configuration window are set to a User Group instead of an individual user, all users in the user group receive an alert at the same time (that is, unless they are not on-call).

# **Selecting Recipients**

When you set up alerts and alert escalations, you must specify the individuals who will be alerted, and how they will be notified. You can send online alerts to all online users or to specific online users, and/or you can send offline alerts to specific personnel via email or SMS text message.

For each user who needs to receive offline alerts via email or text message, you must set them up as a recipient in order to specify their email/SMS contact information. You can also send offline alerts to individuals who are not online users of Centracs — these recipients cannot log in to Centracs, but they can receive and acknowledge offline alerts.

### To select one or more recipients for an alert or alert escalation:

1 Open the Recipient Selection window from the Trigger Editor (page 4-25) or the Alert Escalation Editor (page 4-34).



2 You can select one or more individual recipients, one or more user roles, and/or one or more user groups. If you select a user role or user group, then all users who are assigned to that role or group will receive the alert. User groups ( ) are shown at the

top of the Available Recipients list, user roles (B) are shown next, and recipients (B) are shown at the bottom.

#### Selecting Recipients

**IMPORTANT** • It is recommended that you always include at least one online user for each alert. This ensures that someone can see and acknowledge the alert even if external communications via SMS and email are temporarily down.

Alert	Steps		
To alert all online users	Enable the "Send to ALL online users" checkbox. This will notify everyone who is logged into Centracs at the time of the alert.		
To alert specific online users	<ol> <li>Disable the "Send to ALL online users" checkbox.</li> <li>In the "Available Recipients" side of the window, click the recipients and/or roles to alert.</li> <li>From the Available Message Types dropdown, select "Online".</li> <li>Click to move them to the "Selected Message Types" section of the window.</li> </ol>		
To send an SMS text message alert	<ol> <li>In the "Available Recipients" side of the window, click the recipients and/or roles to alert.</li> <li>From the Available Message Types dropdown, select "SMS".</li> <li>Click to move them to the "Selected Message Types" side of the window.</li> </ol>		
To send an email alert	<ol> <li>In the "Available Recipients" side of the window, click the recipients and/or roles to alert.</li> <li>From the Available Message Types dropdown, select "Email".</li> <li>Click to move them to the "Selected Message Types" side of the window.</li> </ol>		

# **Note** • To select multiple recipients/roles at a time, hold the Ctrl or Shift key while you click them; to select all, press Ctrl-A.

If it is necessary to notify a recipient both by email and by SMS, you must add them to the "Selected Message Types" section of the window two times — one time with a message type of Email, and one time with a message type of SMS.

**3** To save your selections, click **OK**.

Viewing/Printing the Alerts Log •

Offline alert recipients must also have an email address and/or SMS address specified in Centracs, and you must "enable" them to receive alerts (refer to *Defining Recipients* on page 20-73 and *Enabling Recipients* on page 20-75). Otherwise, a yellow triangle is shown to the right of their user name when you add them to the "Selected Message Types" box. If you roll your mouse over the yellow triangle, an informative message is shown:



# **Viewing/Printing the Alerts Log**

To see or to print a history of the alerts that have been generated within a specific time frame, generate the Alerts Log report. For details, refer to *Generating Reports* on page 10-1 and *Alerts Log* on page 10-18.

### Configuring Events, Alerts, and Triggers

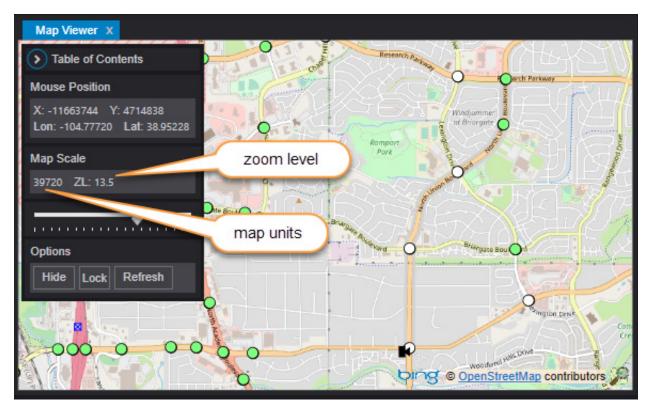
Viewing/Printing the Alerts Log

# **Using Maps**

# **Overview**

Centracs maps offer you a real-time display of the overall state of your devices and entities. Dynamic icons superimposed onto true GIS-based maps indicate the type, status, and location of each active field device.

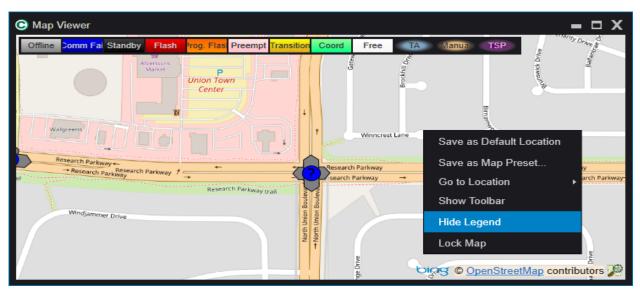
To show more or less detail for specific areas, you can scroll and zoom the map. You can specify how icons look at each zoom level. You can click any device icon to see more details about that field device, to show live video feeds (if the CCTV feature is enabled), or to send commands to the device. Centracs uses graphics and colors to make the map display easy to understand.



Sample map, with toolbar shown at left

#### Using Maps

#### Overview



Sample map, with Signal status legend shown at top

Viewing and Navigating the Map

# Viewing and Navigating the Map

Action	Steps	
To open the default map	From the main menu, select <b>View &gt; Map</b> .	
	The Map Viewer window opens. For instructions on how to change the default map, refer to <i>Setting the Default Map Display</i> on page 5-5.	
To open a preset map	From the main menu, select <b>View &gt; Preset Map &gt; <map name=""></map></b> .	
	The Map Viewer window opens. This option is available only if one or more preset maps have been set. For instructions on how to set a preset map, refer to <b>Using Preset Maps on page 5-6</b> .	
To show the toolbar	Right-click the map and select Show Toolbar.	
	The toolbar shows the X/Y coordinates and the latitude/longitude of the mouse pointer on the map. It also shows the map scaling factor and the zoom level of the current map view.	
To select the entity types to show or hide on the map	Right-click the map and select <b>Show Toolbar</b> . Turn on the checkboxes for the entity types to show on the map; turn off the checkboxes for the entity types to hide on the map.	
	<b>Note</b> • If the "Save Preference Set On Logout" Global Setting is set to true, your selected entity types will be remembered the next time you log in.	
	<b>Note</b> • To select the entity types to show or hide on the map portion of the Signal Status display, Section Status display, and Location Status display, refer to <i>Editing Map Layer Settings</i> on page 20-83.	
To show or hide the legend	Right-click the map and select Show Legend.	
	The legend shows the meaning of each color used when signals are shown on the map. Each color represents a different status.	
	<b>Note</b> • The legend is available only in systems that are licensed for Signals, DMS, and/or Data Collection Stations. It is not available in systems that are licensed only for MMS.	
To pan the map view	Left-click the map and drag it to a new view, then drop it.	
To zoom the map view	Roll your mouse wheel forward to zoom in, or backwards to zoom out.	
	Or	
	On the toolbar, move the slider to the left to zoom out or to the right to zoom in.	

Use the actions below to open, navigate, and adjust the Centracs maps:

#### Using Maps

• Viewing and Navigating the Map

Action	Steps	
To prevent the map view from panning and zooming	Right-click the map and select Lock Map.	
	Or	
	On the toolbar, click Lock/Unlock.	
To turn the pan and zoom features back on	Right-click the map and select <b>Lock Map</b> to remove the checkmark for this option.	
	Or	
	On the toolbar, click Lock/Unlock.	
To switch maps	Right-click the map and select <b>Go to Location ▶</b> <map name="">.</map>	
To reload the map tiles	On the toolbar, click <b>Refresh</b> .	
To determine the latitude/ longitude of a point on the map	Open the toolbar. As you move your mouse, the latitude and longitude values shown in the toolbar are updated to reflect the current position of the mouse pointer.	
To remove the toolbar from the window	Below <b>Options</b> , click <b>Hide</b> .	

**Note** • A third way to keep a specific map view (other than to save it as the default map location or save it as a preset map) is to dock it in a container. As long as you leave the map open and docked when you exit Centracs, the map will be shown in the same location in the same container when you log back in.

Setting the Default Map Display

# Setting the Default Map Display

When any Centracs user selects **View** > **Map** from the main menu, the default map opens. You can change the default so that the map most commonly used by the users is shown automatically.

**IMPORTANT** • This is a system-wide setting — there is only one default location that all users share. If you change the default map location, you will change the default for all users of the system.

### To change the default map display:

1 From the main menu, select **View ▶ Map**.

The Map Viewer opens.

- 2 Pan to the correct position on the map, and select a zoom level. For instructions on how to pan and zoom the map, refer to *Viewing and Navigating the Map* on page 5-3.
- **3** Optionally, resize the window as you would any other Windows<sup>®</sup> dialog (i.e., click a corner or border of the window and drag it).
- 4 Right-click the map and select **Save as Default Location**.

Using Preset Maps

## **Using Preset Maps**

If you frequently use numerous maps or different views of the same map, you can save each map view as a "preset map" which you can easily call up at any time. Any map views that have been saved as preset maps are available to all users of the system.

#### To save a map view as a preset map:

1 From the main menu, select **View ▶ Map**.

The Map Viewer opens.

- 2 Pan to a position on the map, and select a zoom level. For instructions on how to pan and zoom the map, refer to *Viewing and Navigating the Map* on page 5-3.
- **3** Optionally, resize the window as you would any other Windows<sup>®</sup> dialog (i.e., click a corner or border of the window and drag it).
- 4 Right-click the map and select **Save as Map Preset...** The Save Preset Map Location window opens.

Save Preset Map	p Location	$\Box \boxtimes$
Enter a name to ass	ociate with this new lo	cation:
Preset Map Name	1	
	OK Ca	ancel

5 Enter a unique name for the preset map view and click **OK**.

This map view is now available to all users of the system via the **View** > **Preset Map** option from the main menu or via the **Go to Location** option from the Map Viewer's pop-up menu.

#### To open a preset map:

From the main menu, select **View Preset Map** and choose a map from the list.

#### Or

From Map Viewer, right-click the map, select Go to Location, and choose a map from the list.

# **Edit Preset Maps Option**

If you frequently use numerous maps or different views of the same map, you can save each map view as a "preset map" which you can easily call up at any time. Any map views that have been saved as preset maps are available to all users of the system.

### To delete a preset map:

1 From the main menu, select View ▶ Edit Preset Maps... The Edit Preset Map Locations window opens.

Edit Preset Map Locations			
Name	Longitude	Latitude	Zoom Level
Houston, TX	-95.3575165170748	29.7698720129061	9.5
Eastwood Transit Center	-95.3344416468295	29.7274217794351	17
Dixie Farm Rd	-95.192056222196	29.5937582820976	16.5
Delete			Close

This window shows the name, longitude, latitude, and zoom level for each preset map.

2 Click a map in the list, then click **Delete**. If you are asked to confirm the deletion, click **Yes**.

**Note** • You cannot change or rename a preset map — you must delete it and re-add it with the new name or new properties.

• Viewing Entities and Elements on the Map

# **Viewing Entities and Elements on the Map**

After they have been configured via the Map Editor (refer to *Editing the Map View* on **page 5-18**), graphics that represent the entities and elements in your system are superimposed onto the map to show the location, type, and status of each active field device. The tables below identify the graphics used to represent the various field devices.

**Note** • If your entities do not show on the map as expected, and if you have already added them to the map (refer to *Adding Icons to the Map* on page 5-31), check your toolbar settings on the map. To do so, right-click the map and select Show Toolbar. Turn on the checkboxes for the entity types to show on the map. If the "Save Preference Set On Logout" Global Setting is set to true, your selected entity types will be remembered the next time you log in.

### Signal Status

Centracs uses the icons below to show the current status of a signal when the map is zoomed out:

lcon	Color	Meaning
0	Green	In coordination
0	Yellow	In transition
•	Red	Error flash (i.e., unintentional flash)
•	Orange	Programmed flash (i.e., intentional flash)
0	White	Free
0	Pink	Preempt active
•	Gray	Offline
•	Black	Standby
•	Blue	Comm failure (or comms are not configured)

Signal Status 🔹

lcon	Meaning
•	The green circle in the center indicates that the signal is in coordination. In this example, pattern 1 is active.
2	The yellow circle in the center indicates that the signal is in transition. In this example, pattern 2 is active.
Ó	The center of the circle indicates that the signal is in error flash (i.e., unintentional flash), and the color of the icon alternates between transparent and red.
PFLSH	The center of the circle indicates that the signal is in programmed flash (i.e., intentional flash).
FREE	The center of the circle indicates that the signal is in Free mode.
FREE	The pink circle in the center indicates that a preempt is active.
	The Mode for the signal is set to Offline (in the Entity Configuration window).
+	The Mode for the signal is set to Standby (in the Entity Configuration window).
•	The Mode for the signal is set to Online (in the Entity Configuration window), but there is a communications failure (or comms are not configured).
or or	The main street phase is currently green. The longer set of arrows represents the main street; the shorter set of arrows represents the side street.
or or	The main street phase is currently red. The longer set of arrows represents the main street; the shorter set of arrows represents the side street.

lcon	Meaning
FREE	The blue arrows indicate that the Main Street / Side Street Phases have not been specified on the Entity Configuration window.
TREB	The gold halo surrounding the signal indicates that the signal is currently under the control of a manual command from Centracs.
	The blue halo surrounding the signal indicates that the current pattern (pattern 3) was selected by a Traffic Responsive algorithm.

## DMS Status

Centracs uses the icons below to show the current status of a DMS entity:

lcon	Color	Meaning
	Yellow	Communications between Centracs and the DMS are good, there are no errors associated with the DMS, and a message is active on the sign.
	Yellow and black	Communications between Centracs and the DMS are good, there are no errors associated with the DMS, and the sign is blank.
	Red	Communications between Centracs and the DMS are good, but one or more error conditions exist. You can use the DMS Status display (refer to page 9-7) or run the System Events report (refer to page 10-51) to get details about the error(s).
	Gray	The status of the DMS is unknown (such as if the communications mode for the DMS entity is set to Offline).
	Black	The communications mode for the DMS entity is set to Standby.

Autoscope/RTMS Status (DCMS)

lcon	Color	Meaning
	Blue	Centracs is unable to communicate with the DMS device.
Sign 101 - I-25 @ Founders - Southbound PEACE, LOVE, AND SEATBELTS		If you hold your mouse pointer over the DMS icon on the map, Centracs shows a miniature representation of the current message display on the sign. In this example, the beacons are off.

# Autoscope/RTMS Status (DCMS)

Centracs uses the icons below to show the current comm status of an Autoscope or RTMS device:

lcon	Meaning	lcon	Meaning
	Good comms (zoomed out)	<b>.</b>	Good comms (partially zoomed out)
~	Good comms for an Autoscope (zoomed in) (this icon varies slightly depending on the type of the scope)	) →	Good comms for an RTMS device (zoomed in)
Rd II	Bad comms, or device is set to Offline or Standby (zoomed in)		Bad comms, or device is set to Offline or Standby (zoomed out)

MMS Ticket Status

# **MMS Ticket Status**

If your system is licensed for Centracs MMS, colored flags are used to indicate that the MMS Location has one or more open tickets. In this example, a Warehouse Location is shown with an open ticket:



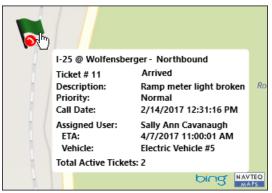
If the Location has more than one open ticket, the map shows the status of the most important ticket, as follows:

- If the tickets have different priorities, the ticket with the highest priority is shown.
- If multiple tickets have the same priority, but one is a Call ticket and one is a Work Order, the Call ticket is shown.
- If multiple tickets have the same priority and the same ticket type, the ticket with the lowest ticket number is shown.

The color of the flag indicates the status of the ticket:

lcon	Color	Meaning
7	Red	<b>Dispatched</b> – Ticket has been assigned. Once a ticket reaches Dispatched status, the dispatch date can no longer be changed by the user.
1	Yellow	<b>Accepted</b> – A technician has taken ownership of the ticket and entered an ETA.
7	Green	<b>Started</b> – The technician is en route to the location.
7	Purple	<b>Arrived</b> – The technician is at the location and starting work.
7	Blue	<b>Closed Work Pending</b> – The work is finished for now, but more work will be required at a later time. (When a technician later returns to this ticket, it goes back into Started status.)
۲	Red	A ticket flag with this symbol indicates that this is a Call ticket.
9	Black	A ticket flag with this symbol indicates that this is a Found On-site ticket.

BlueTOAD Link Status



To see details about the ticket, hold the mouse pointer over the flag icon:

For more information about MMS, refer to Chapter 19, Managing Assets Using MMS.

# BlueTOAD Link Status

Centracs uses colors to indicate the status of BlueTOAD Link Pairs along the roadway. The colors are user-configurable. For example, you might configure the colors so they appear on the map as shown below:







Free-flowing traffic (green)

Moderate traffic (yellow)

Heavy traffic (red)

For details on how to configure the colors, refer to *Entity Configuration - Links* on page 3-54.

Zooming to Specific Entities

# Zooming to Specific Entities

**Note** • There are multiple map layers in Centracs maps, which are user-configurable via the Map Editor (page 5-18) and the Map Layers window (page 20-83). As you zoom the map from one layer to another, the appearance of the entity/element icons may change — specifically, their size, shape, and orientation on the map. For example, you may choose to show small icons when you are zoomed out (to prevent a cluttered map display with icons that overlap), and larger, more detailed icons when you are zoomed in. You can also configure the map layers to show some icons and hide others.

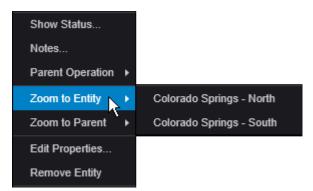
#### To center the map on a specific entity:

- 1 Make sure you have a Map Viewer window open.
- 2 From the Entity Tree, right-click the entity and select the Zoom to Entity option.

```
Note • If no Map Viewer windows are open, this option is hidden from the Entity Tree.
```

If you have only one Map Viewer window open, this map is centered and zoomed to the entity you chose.

**3** If you have multiple Map Viewers open, a sub-menu is shown with a list of the Map Viewers that are currently open:



Select the map to use. This map is then centered and zoomed to the entity you chose.

#### To center the map on a specific collection of entities:

- **1** Make sure you have a Map Viewer window open.
- 2 From the Entity Tree or from the Map Viewer, right-click any entity in the collection, then select the **Zoom to Parent** option.

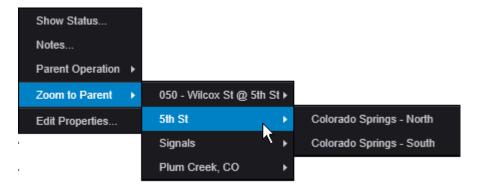
Note • If no Map Viewer windows are open, this option is hidden from the Entity Tree.

**3** If the entity has more than one hierarchical "parent" in the Entity Tree (i.e., all entities have a parent System, but they may also have one or more parent Groups, Sections, or Subsections), a sub-menu is shown with a list of all the parents of the entity. Select the parent collection on which to center the map.

Zooming to Specific Entities •

If you have only one Map Viewer window open, or if you selected the **Zoom to Parent** option from the map rather than the tree, this map is centered and zoomed to the collection of entities you chose.

4 If you selected the **Zoom to Parent** option from the tree and you have multiple Map Viewers open, another sub-menu is shown with a list of the Map Viewers that are currently open:



Select the map to use. This map is then centered and zoomed to the collection of entities you chose.

Viewing Status Details

# Viewing Status Details

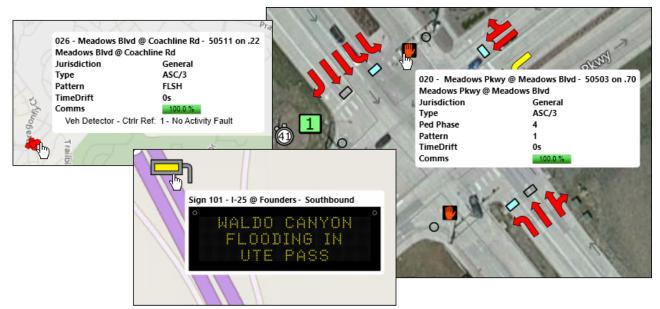
#### To see detailed status information for an entity or element:

Double-click the icon on the map. A status window opens.

Or

Hold your mouse pointer over the icon on the map.

For all except CCTV and DMS devices, a pop-up window shows such information as the entity name, controller type, phase, pattern, time drift, communications status, etc. These are the same fields shown on the status display. For CCTVs, the actual view from the camera is shown; for DMS devices, the current message on the sign is shown.



Sample Signal Status pop-up (left), DMS Status pop-up (bottom center), and Element Status pop-up (right)

**Note** • Centracs automatically issues a "Get Time" command when you request to see the status details for a signal. For more information about the "Get Time" action, refer to *Synchronizing the Time* on page 6-17.

#### To launch the status window for multiple entities/elements:

1 Hold the **Ctrl** key while you click the entities/elements.

#### Or

Hold the **Shift** key, then click the map and drag your mouse pointer to draw a rectangle around the icons. Release the mouse button.

2 Right-click one of the selected icons and click **Show Status...** For most entity types, a status window opens for each entity selected. (Only one window opens for multiple elements of the same intersection.) For CCTV devices, the actual view from the camera is shown.

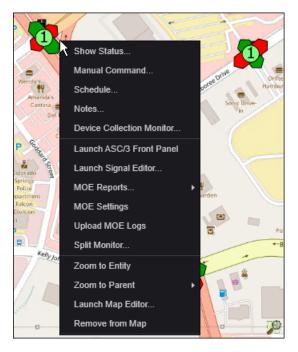
#### **Using Maps**

Issuing Commands •

#### **Note** • This feature is not supported for BlueTOAD Links.

# **Issuing Commands**

If you have sufficient permissions, you can issue commands to individual entities directly from the map — simply right-click the icon and select a command from the pop-up menu.



Editing the Map View

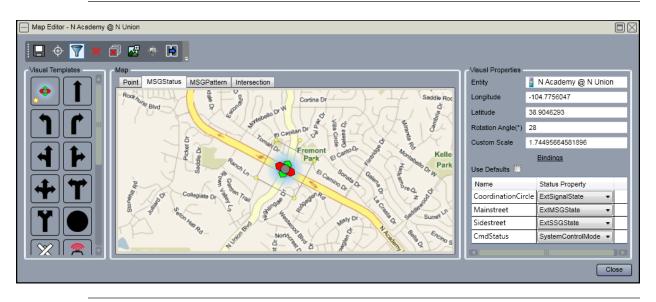
# **Editing the Map View**

The Map Editor controls how your entities are shown on the map. You can add various icons to the map to show the locations of signals, Autoscope/RTMS detection devices, DMS devices, CCTV devices, and MMS Locations. With this graphical representation, you can easily recognize entity types with a glance at the map.

You can also use the Map Editor to adjust the location (latitude and longitude) of a previously mapped entity.

There are multiple map layers in Centracs maps, which are user-configurable. You can set up your map layers so that as a user zooms the map from one layer to another, the appearance of the entity icons change — specifically, their size, shape, and orientation on the map. For example, you may choose to show small icons when the user is zoomed out (to prevent a cluttered map display with icons that overlap), and larger, more detailed icons when the user is zoomed in. You can also configure the map layers to show some icons and hide others.

**Note** • For details on how to set the zoom ranges for each map layer, refer to *Editing Map Layer Settings* on page 20-83.



**Note** • You cannot use the Map Editor to change the appearance of the base map itself (for example, the colors of streets or bodies of water). You can use a third-party tool to change the appearance of the base map, if necessary.

# **Overview of Map Layers**

Several tabs are shown near the top of the Map Editor window. These tabs represent the map layers you can configure for the selected entity type. Each layer corresponds to a predefined zoom range. Usually, the layer on the left-most tab is a zoomed-out view of the area around the entity; the layer on the right-most tab is a zoomed-in view of the elements associated with the entity (if any); any middle layers are between the two.

#### Notes:

- The Intersection layer, when available, dictates what is shown in the Signal Status display (page 6-1) and Autoscope Status display (page 17-29).
- To change the names of the layers, refer to *Editing Map Layer Settings* on page 20-83.
- To enable priority polling for a layer, refer to *Editing Map Layer Settings* on page 20-83. If enabled, priority polling will be activated any time that map layer is viewed by a user in the Map Viewer.

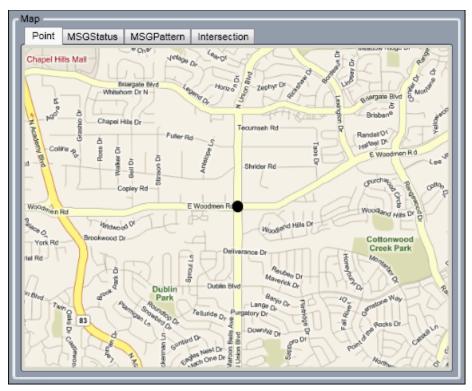
#### Point Layer

The Point layer usually contains only one icon to show the location of an entity on the map. The examples below show how these entity types look in the Map Viewer:

Entity Type	Appearance on Map
Signal	BLOTS PLANY
CCTV	Page Range
BlueTOAD Link Pair or Level of Service Link	odon Rå
Autoscope/ RTMS Detectors (DCMS)	d Nevada Ave

Entity Type	Appearance on Map
URL	Budger
ССТV	k COC
DMS	

• Overview of Map Layers



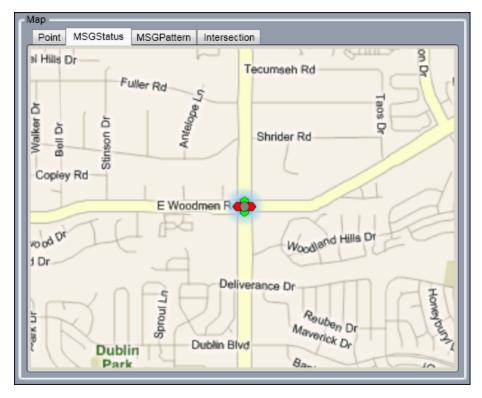
Sample Map Editor Layout for a Signal on the Point Layer

#### **MSGStatus Layer**

The MSGStatus layer shows the real-time status of the main and secondary phases for a signal. You can add other icons to show directional information for each phase, or to show whether any of these are in effect:

- preempts
- vehicle calls
- ped calls
- traffic algorithms
- local or system manual commands

Sample Map Editor Layout for a Signal on the MSGStatus Layer

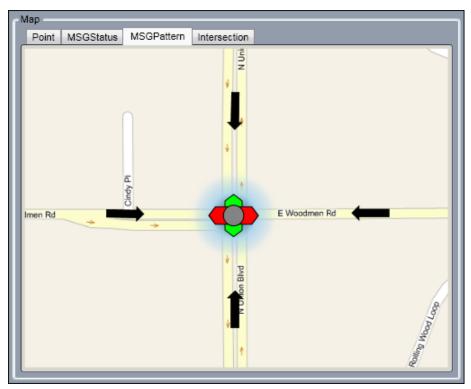


• Overview of Map Layers

#### **MSGPattern Layer**

The MSGPattern layer is a slightly closer view than the MSGStatus layer, and shows more detail. For a signal, when this layer is shown in the Map Viewer, the circle in the center of the red and green cross symbol shows either the number of the pattern that is running or the status: FREE or FLASH.

Sample Map Editor Layout for a Signal on the MSGPattern Layer



Overview of Map Layers •



The window below shows how this layout would look in the Map Viewer:

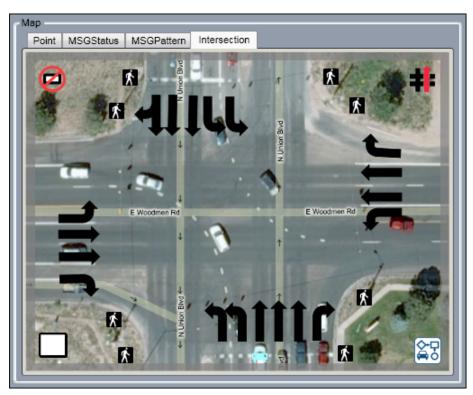
#### Intersection Layer

The Intersection layer includes all the possible icons necessary to assemble an intersection. For a signal, you can use the Intersection layer to show detailed information such as:

- the status of each phase
- the location and status of each vehicle, pedestrian, and bicycle detector
- the presence of preempts and alarms
- the cycle length
- the coordination status and pattern

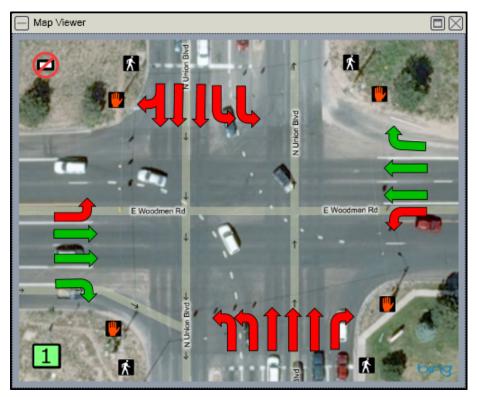
**Note** • The Intersection tab dictates what is shown in the Signal Status display (page 6-1) and Autoscope Status display (page 17-29).

• Overview of Map Layers



Sample Map Editor Layout for a Signal on the Intersection Layer

The window below shows how this layout would look in the Map Viewer:



Overview of Map Layers •

The Any Preempt symbol (in the upper-right corner of the Map Editor layout) and the Traffic Algorithm symbol (in the lower-right corner) are not shown in this Map Viewer example because there are no preempts or algorithms in effect at the moment.

## Locations Layer (MMS Only)

The Locations layer allows you to specify how you want each MMS entity (Warehouse, Flashing Beacon, Count Station, etc.) to appear on the map. You can change the size, position, and orientation of each MMS icon.

## Tickets Layer (MMS Only)

When an open ticket exists for an MMS entity, the map shows a flag for that entity. For example:



The Tickets layer in the Map Editor allows you to specify how you want the flag to appear on the map. For example, you can make the flag smaller, make the flag appear to the left of the entity icon, to the right of the entity icon, etc. Available Map Icons

# Available Map Icons

The table below identifies all of the icons that may be available to you — the actual icons available depend on the type of entity and the map layer. For example, because the Point map layer is zoomed out, only a few general icons are available; but because the Intersection layer is zoomed in, there is room to add element-level icons, and so more icons are available to you.

lcon	Symbolizes	lcon	Symbolizes
	A Signal entity (on the Point tab only)		A URL entity (also available in red and yellow to distinguish one URL entity from another)
¢,	A Signal entity (on MSGStatus / MSGPattern important that you orient the red arrows to arrows parallel with the secondary street	•	
	A CCTV entity		A CCTV entity
	A DMS entity (on the Point tab only)		A DMS entity (on the MSG and Intersection tabs)
	An Autoscope or RTMS Data Collection Station (on the Point tab only)		An Autoscope or RTMS Data Collection Station (on the MSGStatus tab only)
	An Autoscope Data Collection Station (on the MSGPattern and Intersection tabs) – this icon differs slightly for each Autoscope type (Terra, Solo Pro II, etc.)		An RTMS Data Collection Station (on the MSGPattern and Intersection tabs)
	Straight traffic		Left-turn traffic
<b>f</b> <sub>A</sub>	Right-turn traffic	<b>A</b>	Straight and left-turn traffic
Þ	Straight and right-turn traffic		Straight, left-turn, and right-turn traffic
<b>T</b> A	Left-turn and right-turn traffic at a T	<b>Y</b> A	Left-turn and right-turn traffic at a Y
	Phase indicator (on all tabs but the Point tab) – optionally, you can use this indicator to represent phases rather than the various arrow indicators	<u>الأم</u>	Pedestrian phase – flashes Walk and Don't Walk symbols

Available Map Icons

lcon	Symbolizes	lcon	Symbolizes
	Vehicle call indicator 1 (refer to Notes below) – center of rectangle turns blue when a call exists for the assigned phase, turns clear when no call exists		Pedestrian call indicator – center of circle turns blue when a call exists for the assigned phase, turns clear when no call exists
	Detector fault indicator – appears only when there is an active detector fault for the intersection		Railroad preempt indicator – appears only when the assigned preempt is in effect
	Emergency vehicle preempt indicator (refer to Notes below) – appears only when the assigned preempt is in effect	A	Emergency vehicle preempt indicator (refer to Notes below) – appears only when the assigned preempt is in effect
	Emergency vehicle preempt indicator (refer to Notes below) – appears only when the assigned preempt is in effect	<b>‡</b>	Any preempt indicator – appears when any preempt is in effect
	Alarm input indicator – appears only when the assigned alarm input is active	<b>S</b>	Special function indicator – appears only when the assigned special function is active
	Coordination state and pattern indicator	<b>→ </b>	Coordination alarm indicator – appears only when the assigned alarm or fault is active
Ċ.	Local zero indicator – appears momentarily each time local zero is reached	Ö.	Local cycle length counter – for NTCIP signals, the "NTCIP Controller Count Up" Global Setting determines whether the clock counts up or down
	Manual command – appears only when a "Set Pattern" manual command from Centracs is active		Manual command – appears only when a local manual command (from the controller) is active
	The direction North on the map		Transit Signal Priority indicator – appears and changes colors to indicate different TSP states; refer to the TSP events on page 4-15
	Dynamic text – to show more properties on current time drift, the current time of day, t		
	Static text (long) – to add notes or entity names to the map	A	Static text (short) – to add notes or entity names to the map
	Permissive green traffic (refer to <i>Bindings</i> <i>for the Permissive Green Icon</i> on page A-17)		Traffic algorithm indicator

#### Using Maps

Available Map Icons

lcon	Symbolizes	lcon	Symbolizes
A	Vehicle call indicator 2 (refer to Notes below) – appears only when a call exists for the assigned phase	<b>Ste</b>	Bicycle detector
	Vehicle detector actuation – appears only when a vehicle is over the assigned detector		Bus preempt indicator – appears only when the assigned preempt is in effect

#### Notes:

- You can use one or both of the two vehicle call indicators. The rectangular indicator is always shown on the map, and changes color when a call is present, whereas the square indicator is shown on the map only when a call is present.
- The three emergency vehicle preempt indicators are interchangeable.

#### **MMS** Icons

The icons below are available only if your system is licensed for Centracs MMS:

lcon	Symbolizes	lcon	Symbolizes
	CCTV Location		Count Station
	DMS Location		Flashing Beacon
	HAR (Highway Advisory Radio)		Intersection
	Lighted Crosswalk		Manufacturer
	Ramp Meter		Repair Depot
<b>(</b> )	RWIS (Road Weather Information System)		Signalized Intersection
	Warehouse		Ticket
	Location (for any other type not listed above	e, such d	as a Toll Station)

Available Map Icons

For more information about MMS, refer to Chapter 19, *Managing Assets Using MMS*.

Toolbar Options

# **Toolbar Options**

Use the options on the toolbar near the top of the Map Editor to change the map view:



These options are identified in the table below:

Optio n	Function
	Saves your changes to the map view.
$\Leftrightarrow$	Centers the map to the latitude/longitude of the entity.
$\overline{\mathbf{v}}$	In the Map Editor view, shows or hides the icons for nearby entities.
ģ	This option is available only on the Intersection layer. The Status Display for an entity shows a small portion of the map at the entity's location. This option shows you the portion of the map that will actually show in the Status Display. Areas shown in gray will <i>not</i> be shown in the Status Display, so any icons or objects you place in the gray areas will not be visible in the Status Display.
×	Deletes the selected icon from the map view.
	Deletes all icons on all layers of the map view for this entity.
	Adds an external image (such as a .BMP) to the map.
	Changes, deletes, or moves an external image that was previously added to the map.
	Copies the icons from the map view of a different entity to this one.

**Note** • Right-click the map for more commands (such as copy, cut, paste, center, and delete). For some of these commands, you must first select one or more icons.

# Adding Icons to the Map

#### To add map icons to a map layer:

1 Right-click an entity in the Entity Tree and select Launch Map Editor...

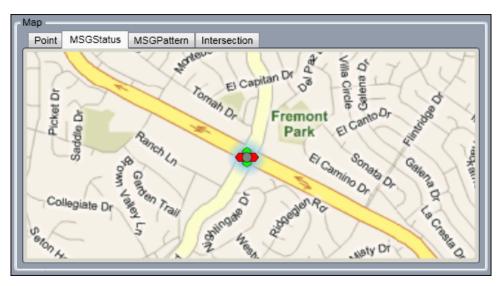
**Note** • This option is available only if the entity has been assigned a location on the map. To assign a map location to the entity, open a Map Viewer window and drag and drop the entity from the Entity Tree onto the appropriate position on the map.

The Map Editor window opens, centered over the latitude/longitude of the entity.

**Note** • If you have just added a new entity to the map, the Map Editor launches automatically.



- 2 To add an icon to a map layer, click a map layer tab and:
  - Drag and drop an icon from the Visual Templates palette (left side of window) onto the appropriate location on the map.
    - Or
  - Click the A in the lower-right corner of the icon (this option is shown when you hold your mouse pointer over the icon) to automatically add the icon at the center-point of the entity's location on the map.



3 Click the new icon to move it, rotate it, or resize it. When you click an icon, "grab" points become visible on the corners of the icon, as shown here for a "North" symbol:



Action	Steps
To move the icon	<ul> <li>Click in the center of it, drag it to the new location, and drop it.</li> <li>Or</li> </ul>
	<ul> <li>Change the values in the Latitude and Longitude fields in the Visual Properties area of the window (right side).</li> </ul>
To resize the icon	<ul> <li>Click one of the corner grab points, then pull or push the icon to increase or decrease the size.</li> </ul>
	Or
	<ul> <li>Change the value in the Custom Scale field in the Visual Properties area of the window. The larger the value, the larger the icon.</li> </ul>

Action	Steps
To rotate the icon	<ul> <li>Click the fifth grab point above the icon, and spin the icon to the new orientation.</li> </ul>
	Or
	<ul> <li>Change the degree value in the Rotation Angle field in the Visual Properties area of the window. A value of 0 degrees is the icon's initial orientation. A value of 90 rotates the icon 90 degrees clockwise, and so forth.</li> </ul>



4 For each icon that represents an element that can change state (for example, a phase, a detector, a railroad preempt, etc.), you must associate the icon with the appropriate state property. To do this, use the Bindings section of the window.

**Note** • For some icons, such as the Point icon on the Point tab, default bindings are automatically set for you. In these cases, the binding fields are grayed-out, and the Use Defaults option is checked. To change the defaults, uncheck the Use Defaults option and make your changes.

To set the binding for an icon, click the icon, then expand the dropdown list below "Status Property" as shown here:

Bindings Use Defaults	
Name	Status Property
VehDet	Detector 1 State
	Detector 1 State       Detector 2 State       Detector 3 State       Detector 4 State       Detector 5 State       Detector 6 State       Detector 7 State       Detector 9 State       Detector 10 State       Detector 12 State       Detector 13 State

Select the correct identity for the icon — in this case, a vehicle detector. For example, suppose your intersection has two vehicle detectors, and these two detectors are assigned Controller Reference numbers of 1 and 2 (in their entity properties defined in the Entity Tree). You would then add two vehicle detector icons to the Map Editor, and assign the first detector a binding of "Detector 1 State" and the second detector a binding of "Detector 2 State".

For phase arrows, you must select the correct phase property. For example, for an arrow that represents phase 7 traffic, you would select "Phase 7" or "Overlap 7". In the sample Intersection layer shown earlier in this section, phases 2, 4, 6, and 8 are assigned to the straight and right-turn arrows; phases 1, 3, 5, and 7 are assigned to the left-turn arrows.

- **5** For User Text icons, give values for the three other fields in the Visual Properties section of the window:
  - **Text** the text of the note to be shown on the map (such as an intersection name).
  - Background the background color for the text box.
  - **Foreground** the font color for the text.

To specify a background or foreground color, click to the right of the field. For details, refer to *Using the Color Selector Window* on page 3-64.

6 Repeat steps 2 through 5 for more icons, as appropriate for this map layer.

**Note** • If there are other entities nearby, you can click the Filter icon on the toolbar to superimpose those icons onto the current map layer and check for overlaps.

- 7 Although not required, it is recommended that you save your changes after you complete each map layer (click the Save icon in the toolbar).
- 8 Click the next map layer and add the appropriate icons.

9 To save all your changes, click the 🔲 icon in the toolbar, then click **Close**.

If you open a Map Viewer window over this entity, you can see the new icons you configured, which are now superimposed on the map:

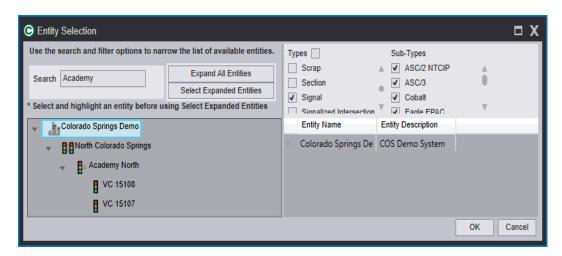
- Hold your mouse over a signal or other intersection-related icon to see live status information, or double-click the icon to launch the Signal Status display (page 6-1).
- Double-click a Link icon to see data for the collection of detectors.
- Hold your mouse over a CCTV icon, or double-click the icon, to see the live video stream.
- Hold your mouse over an Autoscope Data Collection Station to see the live video stream or the most recent snapshot image, or double-click it to launch the Autoscope Status display (page 17-29).
- Hold your mouse over an RTMS icon to see current comm information, or double-click the icon to launch the RTMS Status display (page 17-31).
- Double-click a URL icon to launch the assigned website or executable.

If at any point it is necessary to change the icons, you can right-click an icon in the Map Viewer and select the **Launch Map Editor...** option.

## Copying Map Icons from Another Entity

#### To copy the map icons from a different entity:

1 On the Map Editor window, choose one of the four map layers, and click the 🖻 icon in the toolbar. The Entity Selection window opens.



2 In the list of entities on the left side of the window, double-click the entity to copy icons from. You can use the search fields at the top of the window to filter out unwanted entities. For example, you can use the Street fields to enter the first few

Adding Images to the Map

characters of the street names (as shown above). For instructions on how to use the search and filter options on this window, refer to **Using the Entity Selection Window** on page 3-18.

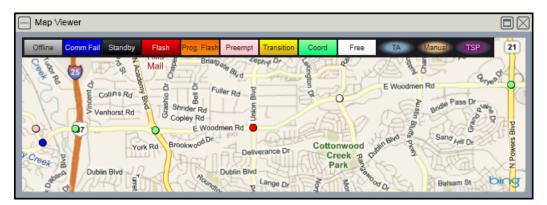
3 Click OK.

The icons are copied for the selected map layer only. You can then move them, resize them, change their bindings (if applicable), etc.

4 Repeat for other map layers if necessary, then save your changes.

**Note** • You can also copy and paste icons within the same map layer. To do so, select one or more icons (hold the Ctrl key while you select them), then right-click and use the Copy and Paste commands. You cannot copy and paste icons between *different* map layers.

Shown below is a Map Viewer window that shows the overall status of a string of seven signals with various statuses. This map shows the Point map layer.



## Adding Images to the Map

Optionally, you can add images to the map, such as an aerial photo of an intersection. Centracs supports these graphic formats: BMP, JPG/JPEG, PNG, and GIF. In order to use this feature:

- The map tile server must be installed, and the ECPI Tile Server tab (accessed via the File > Settings option) must be configured to point to it. Refer to page 20-2.
- The map layer(s) must be configured with the "ECPI Raster" Tile Requestor. If this is not done, a "No Image Layer" error will occur when you try to add images in the Map Editor. For details, refer to *Editing Map Layer Settings* on page 20-83.

#### To overlay an image onto the map:

- 1 On the Map Editor window, choose one of the four map layers.
- 2 Click the "Add an image" icon in the toolbar.
- **3** Find and select the image file to add to the map. The image is shown on top of the map, and below any map visuals that have been added to the map.

- Adding Images to the Map
- 4 You can move and resize the image, the same as other map icons. You can also click it and roll your mouse wheel forward to enlarge it or backward to shrink it.
- **5** Save your changes to make the image part of the map.

#### To edit or remove an image on the map:

- **1** Click the "Edit map images" icon in the toolbar.
- 2 Read the warning message that is shown, then click **Yes**.

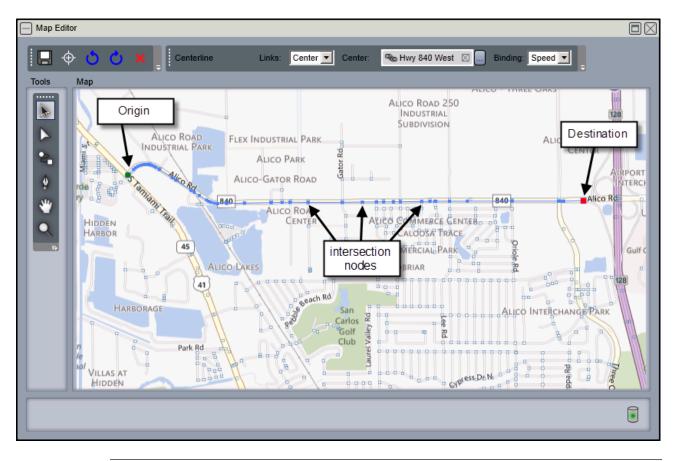
The image is extracted from the map; you can delete, move, or resize it. (If multiple tabs contain imported images, *all* images are extracted.)

**3** Save your changes.

• Editing the Map View for a Link (LOS)

# Editing the Map View for a Link (LOS)

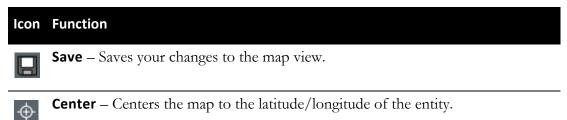
Use the Link Editor to establish road centerlines, which can have Links on one side or both sides. For example, if you have a surface street that runs North-South, you can draw one centerline and tell Centracs to create two Links: one running North and one running South.



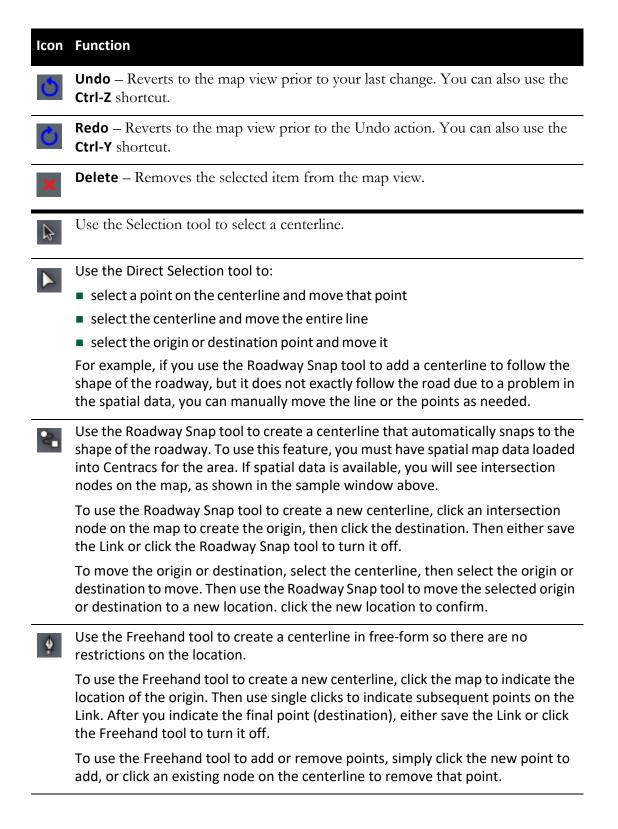
**Note** • You must create the Link entities in the Entity Tree before you can add them to a centerline.

To create a centerline, use the Roadway Snap tool or the Freehand tool.

As shown above, colors are used to show the direction of a centerline: the start/origin is a green dot, and the end/destination is a red square.



Editing the Map View for a Link (LOS)



• Editing the Map View for a Link (LOS)

Icon Function

Use the Pan tool to move the map image. After you click the Pan tool, click the map to drag and drop the image.

Use the Zoom tool to change the magnification of the map image. After you click the Zoom tool, use the mouse wheel to zoom in or out. Or, click the map to zoom in, or hold the Alt key and click the map to zoom out.

After you draw the centerline, you must specify what this line represents. In the Links dropdown at the top of the window, specify whether the centerline represents two Links in opposite directions (i.e., the Both option) or only one Link (i.e., Left, Right, or Center). For example, for a surface street with one Link running North and another Link running South, select the Both option, then use the Left and Right fields to specify which Link entity is Northbound traffic and which Link entity is Southbound traffic.

Use the Binding field to specify whether to base the Level of Service calculations for the Map Viewer on Volume, V+kO, Occupancy, or Speed data. Or, if you set the Binding field to Default, Centracs uses the value from the "Link LOS Source" Global Setting.

**Note** • When you delete a Link from the Map Viewer (by right-clicking on the Link in the Map Viewer window and selecting the Remove from Map option), the centerline does not get deleted. Instead, the Link assignment is removed from the centerline. You can then open the Map Editor and either assign a different link to the centerline or delete the centerline from the Map Editor.

# **Deleting an Entity from the Map Viewer**

As described in *Editing the Map View* on page 5-18, you can remove icons from the Map Viewer using the Map Editor. You can also remove an entity's icons directly from the Map Viewer, as described below.

#### To delete an entity from the Map Viewer:

- 1 From the main menu, select View ▶ Map. The Map Viewer window opens.
- 2 Locate the entity you want to delete. Refer to *Zooming to Specific Entities* on page 5-14.
- 3 Right-click the entity and select **Remove from Map**.

Note that after you remove an entity's icon from the Map Viewer or Map Editor, Centracs retains the entity's latitude/longitude coordinates. To remove the coordinates (for example, if you want to move the entity to another location on the map), follow the steps below.

#### To remove an entity's coordinates from the database:

- 1 From the Entity Tree, right-click the entity and select **Edit Properties**. The Entity Configuration window opens.
- 2 Click 🔲 to the right of the Coordinates field. The Coordinates window opens.
- 3 Remove all values from the Coordinates window and click OK.
- 4 On the Entity Configuration window, click **Apply**.

#### Special Note About Links

When you use the **Remove from Map** option for a "Level of Service" Link, the Link's centerline does not get deleted. Instead, the Link assignment is removed from the centerline. You can then open the Map Editor and either assign a different link to the centerline or delete the centerline from the Map Editor. For more information, refer to *Editing the Map View for a Link (LOS)* on page 5-38.



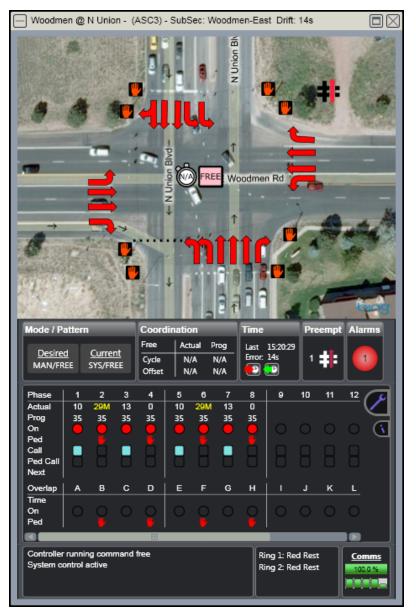
6

# **Monitoring Devices**

# Signals

Using the Signal Status Display

• Using the Signal Status Display



The Signal Status display shows a graphical representation of an intersection:

You can use it to quickly assess the state of an intersection, and to quickly and easily issue commands to a signal controller.

**Note** • To specify which types of entity icons (e.g., for CCTVs, DMS, Links, etc.) to show or hide on the map portion of the Signal Status display, refer to *Editing Map Layer Settings* on page 20-83.

Using the Signal Status Display •

#### To open the Signal Status display:

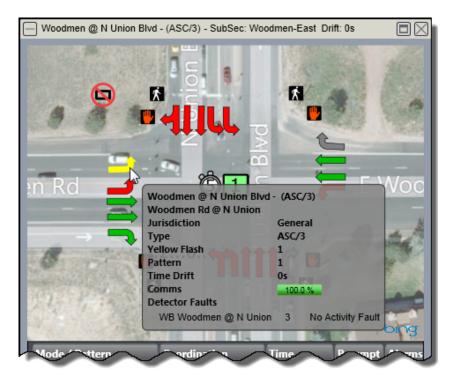
Double-click the signal in the Entity Tree or the Map Viewer.

#### Or

Right-click a signal in the Entity Tree, Map Viewer, Section Status display, or Subsection Status display and select Show Status... from the popup menu.

You can open Status displays for multiple signals at the same time. You can move them, resize them, and dock them like other windows in Centracs.

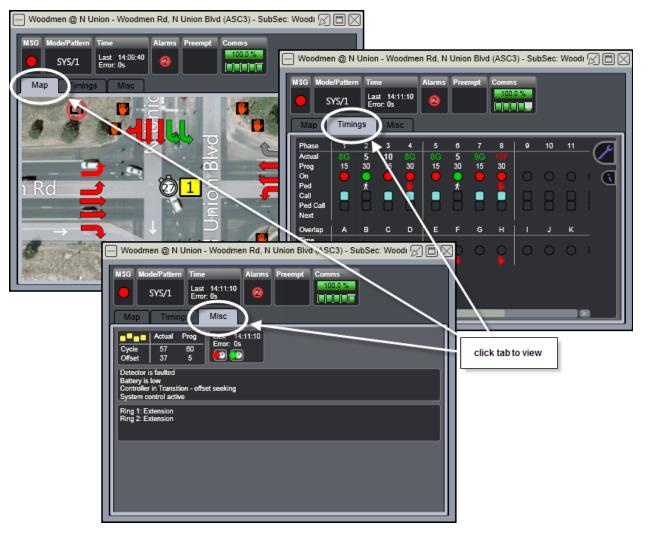
The display at the top of the Status window shows an aerial view of the intersection on a map. You can configure it to include a number of animated icons that show the current state of the various intersection elements. (To do so, use the Map Editor (page 5-18) to define and arrange the icons on the Intersection layer.) These are the same icons shown in the Map Viewer. For the meaning of each icon, refer to *Viewing Entities and Elements on the Map* on page 5-8. To see details about a specific icon or phase arrow, or to see a CCTV camera feed or a DMS sign, hold your mouse pointer over it:



You can also double-click a URL entity on this map to launch the executable or link.

The bottom section of the window contains details about the status of the intersection and its elements. You can also do a number of operations directly from this window. • Using the Signal Status Display

When you dock the window or resize it, Centracs condenses the information into three different tabs:



The MSG indicator shows the current state of the main street phase for the intersection (MSG=Main Street Green). For details, refer to *MSG Colors and Signal Status Colors* on page 6-15.

Mode / Pattern

The Mode / Pattern section of the window contains an overall summary of the status of the intersection, specifically:

Field	Description
Desired	The mode that the controller should be in, and the pattern that should be running, according to Centracs.
Current	The actual controller mode and the actual pattern reported by the controller.

Using the Signal Status Display •

For details, refer to Controller Modes and Patterns on page A-15.

### Coordination

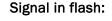
This section of the window shows whether the signal is currently running in coordination (if not, the values are set to N/A and the colored boxes are replaced with "Free" or "Flash").

Signal in coordination:

Signal in transition to coordination:







Coordination								
Flash	Actual	Prog						
Cycle	N/A	N/A						
Offset	N/A	N/A						

It shows the programmed offset and cycle times, along with the actual offset and the counter for the current cycle.

While a signal attempts to get in coordination, "Controller in transition - offset seeking" is shown in the Messages section at the bottom of the window.

# Time

The Time section of the window shows the time reported by the controller for the last "Get Time" request (in HH:MM:SS format), followed by the time drift between Centracs and the controller. This section of the window also includes options to request the current time from the controller or set the time on the controller. For more details about time drift and the information shown in the Time section, refer to *Synchronizing the Time* on page 6-17.

# Preempt

The Preempt section shows whether a preempt is active for this intersection:

Emergency vehicle preempt:

**Railroad preempt:** 

Other preempt:









• Using the Signal Status Display

# Alarms

The Alarms section shows the number of alarms that the signal controller is reporting (if any):



An example of a controller alarm is "Detector is faulted". A short description of each alarm is shown in the Messages section of the window (below).

# Phase / Overlap

This unlabeled section is split into two tables: one for phases (1-16) and one for overlaps (A-P). The tables contain the information below for each phase/overlap:

Field	Description
Actual	The actual split for this phase during the current or most recent cycle (in seconds).
	The number may be followed by one of these letters:
	<ul> <li>G – the green time terminated because the phase gapped out.</li> </ul>
	<ul> <li>M – the phase reached its maximum green time.</li> </ul>
	■ <b>F</b> – the green time for the phase was forced off.
Prog	The programmed split for this phase (in seconds).
On	The current state of the vehicle phase/overlap: green, yellow, red, or orange (for programmed flash).
Ped	The current state of the pedestrian phase (the Walk symbol, the Don't Walk symbol, or the flashing Don't Walk symbol).
Call	There are four possible states for this indicator:
	<ul> <li>A blue box indicates the presence of a vehicle call.</li> </ul>
	A red letter M in a gray box indicates a manual vehicle call.
	<ul> <li>A red letter M in a blue box indicates the presence of both types of vehicle calls.</li> </ul>
	<ul> <li>A dark gray box indicates the absence of any vehicle calls.</li> </ul>
	<b>Note</b> • The red <b>M</b> does <i>not</i> appear during phase recall.
Ped Call	Same as above, but for pedestrian calls.
Next	During the last few seconds of the active phase(s), orange arrows are shown below the phase(s) that will be active next.

Using the Signal Status Display •

To see more details, hold the mouse pointer over a phase number or overlap letter:



To put a temporary call on a phase, click **Assert vehicle call** or **Assert pedestrian call**. Click the button again to turn off the call. (When you close the Signal Status display, Centracs asks whether you want to remove the call.)

### Slide-out Menus

### Tools and Phase Options Menu

If you hold your mouse over the wrench icon near the right edge of the window, this slideout menu is shown:



The options are:

- **FP** Launches the remote front panel emulator for the controller, where you can view or change the settings on the controller (page 15-6).
- EDI Launches the EDI Malfunction Management Unit (MMU) Conflict Monitor program. To enable this option, add the "ECcomPath" Global Setting and specify the path to the executable. When you do this, a field called "ECCOMM Monitoring" becomes available in the Entity Configuration for each signal in the Entity Tree; use this field to specify the IP address. After these two items have been configured, you can

• Using the Signal Status Display

Click the EDI button here to launch the conflict monitor program, or you can right-click a signal in the Entity Tree or Map Viewer and select the **Launch ECcom Monitoring...** option.

- HO Hides the overlaps not in use.
- **RO** Restores the hidden overlaps.
- **HP** Hides the phases not in use.
- **RP** Restores the hidden phases.
- Files Allows you to view or download files that are attached to this signal (files are attached via the Entity Configuration window (page 3-36)).
- **Edit** Launches the Controller Editor for this signal.

### Manual Control Menu

If the "Enable Remote Interval Advance" Global Setting is turned on, this slide-out bar is also shown on the Signal Status display:

Phase	1	2	3	4	5	6	7	8	9	10	11	12	1. 6
Actual													
Prog On	35	35	35	35	35	35	35	35		_	_	_	
Ped		¥.	<b>7</b>	1 N		1 N	1 N		Ente	r	Exit	Ad	v 🚺
Call	Ō	Ō	Ō	Ō	Ō	Ō	Ō			Ū	U	U	
Ped Call												0	
Next	_	_	_	_	_	_	_	_		_	_	_	

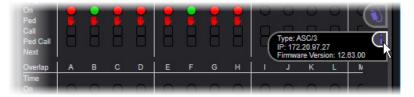
These options allow you to manually control a signal from the Signal Status display:

- Enter Manual Advance mode
- Exit Manual Advance mode
- Advance the interval

**Note** • If you close the Signal Status display (or the Centracs client) while Manual Advance mode is active, Manual Advance mode times out after a short period of time.

### Information Menu

If you hold your mouse over the "i" icon near the right edge of the window, this slide-out bar is shown:



It provides information about the controller, including the type of controller (such as ASC/3), the IP address or drop address, and the firmware version.

# Notifications

The unlabeled section at the lower-left corner of the window contains messages to notify you of various conditions, such as a communication problem, a detector fault, a local override, or local zero. For example:



# Rings

This unlabeled section at the bottom of the window shows the current state of each ring, such as Min Green, Yellow Change, or Extension.



# Comms

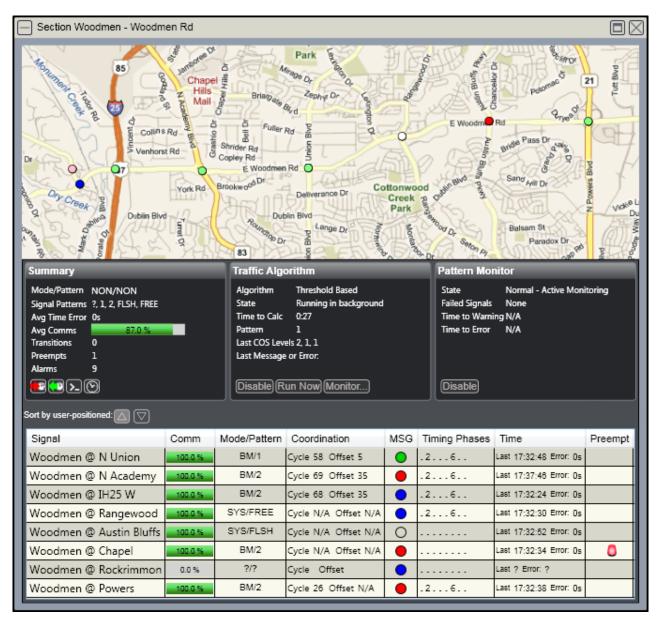
The Comms section is a summary of the communications status between Centracs and the controller for this intersection. Hover the mouse over the colored bar on the bottom to see more details; click it to open the Comm Statistics graph. For more information, refer to *Viewing Comms on the Status Display* on page 6-53.

When shown just above the Comms section, • indicates that the intersection is currently running in Adaptive mode. For information about Centracs Adaptive, refer to Chapter 18, Using Centracs Adaptive.

Using the Status Display for Sections/Subsections

# Using the Status Display for Sections/Subsections

The Status display for a Section or Subsection shows a graphical representation and a comprehensive summary of the intersections included in the selected Section/Subsection grouping:



You can use it to quickly assess the state of a collection of signals, and to quickly and easily issue commands to the signal controllers.

**Note** • To specify which types of entity icons (e.g., for signals, CCTVs, Links, etc.) to show or hide on the map portion of the Section/Subsection Status display, refer to *Editing Map Layer Settings* on page 20-83.

# To open the Status display:

Double-click the Section or Subsection in the Entity Tree.

### Or

Right-click the Section or Subsection in the Entity Tree and select Show Status... from the popup menu.

You can open Status displays for multiple Sections/Subsections at the same time. You can move them, resize them, and dock them like other windows in Centracs.

The display at the top of the Status window shows an aerial view of the Section/ Subsection on a map. To see details about a specific icon, or to see a CCTV camera feed or a DMS sign, hold your mouse pointer over it:



You can also double-click a URL entity on this map to launch the executable or link.

The bottom section of the window contains details about the status of the signals. You can also do a number of operations directly from this window.

Using the Status Display for Sections/Subsections

### Summary

The Summary section shows:

- Mode/Pattern The desired controller mode and the pattern that should be running, according to Centracs; refer to Controller Modes and Patterns on page A-15
- Signal Patterns A list of all the patterns currently in effect on the signals in the Section/Subsection
- Avg Time Error An average of the time drifts for all the signals in the Section/ Subsection
- Avg Comms An average of the communications statuses for all the signals in the Section/Subsection
- Transitions The number of signals currently in transition (these signals are shown on the map with a yellow dot)
- Preempts The total number of preempts currently active for this Section/Subsection
- Alarms The total number of alarms the controllers are reporting

The Summary section also includes options to:

E request the current time from all controllers

🖭 set the time on all controllers

Selection of the select

define a manual command

For more information about these functions, refer to *Synchronizing the Time* on page 6-17 and *Overview of Scheduling and Manual Commands* on page 7-1.

# Traffic Algorithm

The Traffic Algorithm section contains details about the configured traffic algorithm for this Section/Subsection, including:

- Algorithm The algorithm type
- State The current state of the algorithm:
  - "Running in background" In this state, Centracs makes calculations for the algorithm
  - "Manually disabled" In this state, Centracs does not make calculations for the algorithm
  - "Active on Section" In this state, Centracs makes calculations and sends pattern changes to the controllers
- Time to Calc When the next calculation will be made, in minutes and seconds (the Interval field on the Settings tab of the Threshold Traffic Responsive window sets the amount of time between calculations; refer to Configuring Channels, Thresholds, and Patterns on page 13-8)
- **Pattern** The pattern selected by the algorithm for these signals
- Last COS Levels The last Cycle, Offset, and Split (COS) levels reported by the algorithm calculations
- Last Message or Error The last message or error reported (such as "Sidestreet channel failed because 'good detector' quota was not met")

These buttons are available:

- Disable/Enable turns calculations off/on
- Run Now calculates the algorithm on demand (this is the same as the Run Now option on the TR monitoring window (page 13-16))
- Monitor... opens the TR monitoring window; refer to Monitoring Real-time TR Calculations on page 13-16

For more information, refer to Introduction to Traffic Responsive (TR) on page 13-1.

Using the Status Display for Sections/Subsections

### Pattern Monitor

The Pattern Monitor section contains information about the current state of Signal Coordination Monitoring for this Section/Subsection:

- State Shows whether pattern monitoring is active or disabled for this Section/ Subsection
- Failed Signals The number of signals currently in a failed state, if any
- Time to Warning A countdown to when Centracs will write a Warning event to the event log (if the pattern conflict is not corrected within that time)
- Time to Error A countdown to when Centracs will write an Error event to the event log (if the pattern conflict is not corrected within that time)

To turn monitoring on or off for this Section/Subsection, you can click the Enable/Disable toggle button at the bottom of this section.

For more information, refer to Signal Collection Coordination Monitoring on page 3-24.

#### Signals

The table at the bottom of the window shows details for each signal. To sort the signals by name, click the "Signal" column header (once for ascending order, twice for descending order). To sort the signals by their order in the Entity Tree, click the "Sort by userpositioned" up arrow (ascending order) or down arrow (descending order). For each signal, the following information is shown:

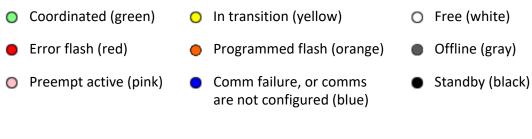
- **Signal** The signal name
- Comm The current communications status for the signal
- Mode/Pattern The current controller mode and the pattern currently running; refer to Controller Modes and Patterns on page A-15
- Coordination The cycle counter and the programmed offset
- MSG The current state of the main street phase for the intersection (MSG=Main Street Green); refer to MSG Colors and Signal Status Colors on page 6-15
- Timing Phases The phases currently active (i.e., the phases that are green)
- Time The time reported by the controller for the last "Get Time" request (in HH:MM:SS format), and the time drift between Centracs and the controller; for more details about time drift and the information shown in the Time column, refer to Synchronizing the Time on page 6-17
- Preempt An indication of any preempts that are active for the signal:
  - railroad preempts are shown as
  - emergency vehicle preempts are shown as

If you right-click a signal, a menu is shown with a list of operations that you can do for this signal (such as Launch Signal Editor, Launch Map Editor, Manual Command, Schedule, etc.). To launch the Signal Status display (page 6-1), double-click a signal.

### MSG Colors and Signal Status Colors

The colored dots in the MSG column have different meanings than the colored dots shown on the map and in the Entity Tree (if you have the tree set to show the signal status). The differences are identified below.

# Signal Status Colors:



# **MSG Phase Status Colors:**

- Main street phase is currently green
- Main street phase is currently red, or signal is in error flash
- Signal is in programmed flash
- There is a communications failure, or the main street phases have not been configured
- Signal is not running in coordination, or the main street phases have not been configured

# Using the Remote Front Panel (ASC/3, Cobalt)

You can use the remote front panel emulator to view the status displays (which show you what is happening on the controller right now), or to change the controller settings directly from Centracs. Refer to page 15-6.

Testing Comms between Centracs and a Controller

# Testing Comms between Centracs and a Controller

## To test the comms between Centracs and a signal controller:

1 From the main menu, select **Monitoring ▶ Comm Test...** 

### Or

click the colored bars in the Comms area of the Signal Status display (page 6-1):



The Communications Test window opens.

Communicatio	ns Test	
Entity 👔 Woo	dmen @ N Academy ASC/3(	⊠
Number of Atter	npts 10	
Interval (second	ls) 1	
Attempts	4	
Successes	4	
Success %	100	
	Stop	Close

- 2 If the Entity is not already selected, click to launch the Entity Selection window and select the controller to test. Only one controller can be tested at a time. For instructions on how to use the Entity Selection window, refer to page 3-18.
- 3 In the Number of Attempts field, enter the total number of polls to make to the controller for this test.
- 4 In the Interval field, enter the number of seconds to wait between polls for this test.
- 5 Click Start.

Progress bars at the bottom of the window show the results of the test. The Attempts bar shows the number of polls that have been sent, the Successes bar shows the number of attempts that have been successful, and the Success % bar shows the calculated success rate percentage, where:

```
Success % = ((Successes) / Attempts) * 100
```

# Synchronizing the Time

You can configure Centracs to automatically check for differences between the current time on the server and the local time on the field devices, and to broadcast the current server time to the devices in order to synchronize them with Centracs. You can also synchronize device times manually.

## Time Drift

"Time drift" measures any difference between the current time according to Centracs and the current local time on the field devices.

The "ShowExactTimeDrift" Global Setting determines how the time drift is shown in the Status display. If this option is set to true, the exact time drift is shown in seconds, minutes, or hours (as appropriate). If this option is set to false, and if the time drift is larger than 60 seconds, the drift is shown as "Error: > 1 min".

**Note** • For signal controllers, in order for time drift to be calculated and shown correctly, the time format configured in Centracs must be the same as the time format set on the controllers. In Centracs, the time format is set on the Servers/Comms Configuration window for each channel (for more information, refer to *Configuring Communication Channels* on page 20-36).

Bu	utton	Meaning	Description
	<b>(</b>	Get Time	Commands a device to report its current local time back to Centracs.
		Set Time	Commands a device to replace its local time with the current time from the <i>Centracs</i> server.

In the Status display, you can request and send the time with the click of a button:

For more information about these commands, refer to the sections that follow.

### Requesting the Time from a Device

Centracs automatically issues a Get Time command in these instances:

- When the Signal Status display (page 6-1), Autoscope Status display (page 17-29), or the DMS Status display (page 9-7) is opened.
- When you hold your mouse pointer over a signal, an Autoscope, or a DMS icon on the Map Viewer.
- Periodically, according to the time refresh rate configured for your system in the Global Settings.

• Synchronizing the Time

To manually request the time from a device, click in the Signal Status display (page 6-1) (or for multiple controllers in the Section/Subsection Status display), the Autoscope Status display (page 17-29), or the DMS Status display (page 9-7).

## Sending the Time to a Device

You can use the Set Time command to synchronize devices whose local time is different from the current time on the Centracs server. When this command is issued, Centracs sends its current time to the specified device(s). The time on the device(s) is replaced with the Centracs server time, and a confirmation is sent back to Centracs.

**Note** • The Time Broadcast command is the same as the Set Time command, but Centracs does not receive a response back from the device(s).

To manually set the time on a device, click 🖭 in the Signal Status display (page 6-1) (or for multiple controllers in the Section/Subsection Status display), the Autoscope Status display (page 17-29), or the DMS Status display (page 9-7).

**Note** • You can also issue Set Time and Time Broadcast via scheduled/manual commands. As a result, you can schedule the command to run automatically at a specified time or on a recurring schedule, and you can issue the command for multiple devices at the same time. When you run these commands via a schedule entry or manual command, you can select one or more Signals, DMSs, Groups, Sections, Subsections, Autoscopes, and/or Systems to receive the time. For more information, refer to *Overview of Scheduling and Manual Commands* on page 7-1.

# Using the Device Collection Monitor

To see signal status information for multiple devices at the same time, use the Device Collection Monitor.

**Note** • You can have multiple Device Collection Monitors open at the same time, each with its own collection of signals.

### To add signals to the Device Collection Monitor:

1 From the main menu, select **Monitoring ► Device Collection Monitor...** The Device Collection Monitor window opens.

Device Collection Monitor	

2 Click . The Entity Selection window opens, where you can select all the signals to monitor. You can select signals individually, or you can select entire Systems, Sections, and Subsections. For instructions on how to use this window, refer to *Using the Entity Selection Window* on page 3-18. After your selections have been made, click OK.

**Note** • You can also drag and drop entities from the Entity Tree onto the Device Collection Monitor window.

The collection of signals you specified is shown in the Monitor. In the example below, the collection contains three signals.

Device Collection Monitor		
H/V Props Map Coord		
17 - Tranquille Rd @ Southill St Tranquille Rd @ Southill St Type: ASC/3 Pattern: 1 MSG: O Time Drift: ? ? ? ? ? <u>Coordination</u> Actual Prog Cycle 72 Offset N/A Comms: 100.0 %	501 S. Nevada - S. Nevada @ Uintah St. X () Nevada @ Uintah St Type: ASC/3 Pattern: 1 MSG: Time Drift: ? Coordination Actual Prog Cycle 71 Offset N/A Comms: 100.035	Signal 502 S. Nevada - S. Nevada @ Kiowa X < Nevada @ KIOWA Type: ASC/2 NTCIP Pattern: 1 MSG: Time Drift:? Coordination Actual Prog Cycle 73 Offset N/A Comms: 102055

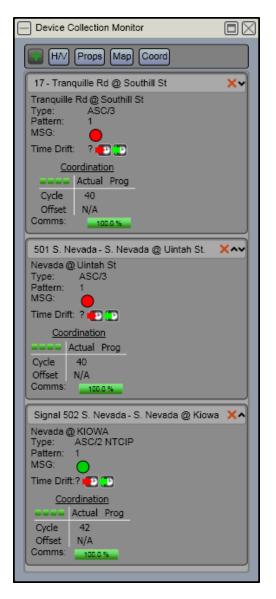
• Using the Device Collection Monitor

For information about the fields shown in the Monitor, refer to *Using the Signal Status Display* on page 6-1.

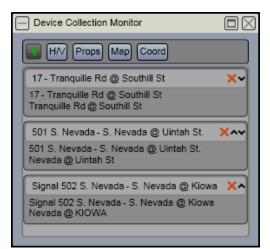
**Note** • As long as the Device Collection Monitor is left open (docked or undocked) when you close Centracs, the signals included in the collection will be remembered the next time you log in. But if you close the Collection Monitor and re-open it, you must add the signals to the collection again.

### To change the display of the Monitor:

To toggle between Horizontal and Vertical modes, click H/V. The example above is a horizontal display; the example below is a vertical display.



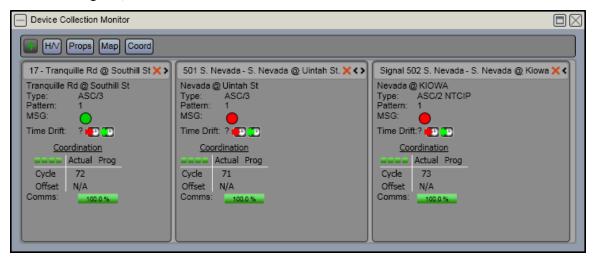
- Using the Device Collection Monitor •
- To show the signal names and descriptions only, click **Props**:



• To show the map visuals for the intersections, click Map:



To show coordination status, current pattern, time drift, and other status details about the signals, click Coord:



• Using the Device Collection Monitor

# To re-order the signals:

- ▶ When in horizontal mode, click the ≤ and ≥ arrows to rearrange the signals.
- ▶ When in vertical mode, use the ▲ and ▲ arrows.

# To remove a signal from the collection:

▶ Click the ■ at the upper-right corner of the signal container.

# Viewing the Device Status Window

The Device Status window shows current status information for all devices at the same time.

All signals, Autoscope/RTMS detection devices, and DMS signs defined in the Entity Tree are shown in the Device Status window, regardless of whether they are fully configured. Devices from external Server-to-Server systems are also shown.

Device Status										$\boxtimes$
Name 💌	Description	Туре	General Status	Communications	Alerts	Alarms	Primary Street	Secondary Street	Sub-type	
Annie Goolahee @ Bad Billy Pratt	504	1	DFLT/FREE	100.0 %	0	1	Annie Goolahee	Bad Billy Pratt	ASC/3	
Annie Goolahee @ Olaf Way	501	2	SYS/FLSH	100.0 %	0	1	Annie Goolahee	Olaf Way	ASC/3	
Annie Goolahee @ Sweet Trav	502	1	DFLT/FREE	100.0 %	0	1	Annie Goolahee	Sweet Trav Ln	ASC/3	
Annie Goolahee @ Tofutti Klein Ave	503	1	DFLT/FREE	100.0 %	0	1	Annie Goolahee	Tofutti Klein Ave	ASC/3	
Sign @ Eastwood Transit Center	Skyline		Comm Good w/ Message	100.0 %	0	0	Eastwood Rd	CR 71	Variable Message Sign	
Sign @ I-25 & Woodmen	Daktronics	••••	Comm Fail	0.0 %	0	0	Woodmen Rd	Interstate 25	Variable Message Sign	
Woodman Dd @ L 35	10/4		Comm Fail		n	4	Woodmon Dd	Interntate 25	10/4	

**Note** • If your Centracs system is configured to communicate with other Centracs systems, the System column shows whether the device resides on your Local system or on an external system.

For signals, the General Status column shows the current mode and pattern that the signal controller is reporting (for details, refer to *Controller Modes and Patterns* on page A-15.), or else shows Offline, Standby, or Comm Fail. For DMSs, this column shows whether the comms to the sign are good, and if so, whether a message is being shown on the sign. For Autoscope Data Collection Stations, this column shows the current Mode.

To see the Alarms for a signal, open the Signal Status display for that signal.

To open the Status display for a device, double-click the device in the list.

Right-click a device to access many of the commands that are available from the Entity Tree (the actual commands shown depend on the type of device you clicked on):

Command	Available for	Refer to
Show Status	Signals, DMS, RTMS, Autoscope DCS	page 6-1
Show Video	Autoscope Data Collection Stations	page 17-1
Manual Command	Signals, DMS, RTMS, Autoscope DCS	page 7-8
Schedule	Signals, DMS, RTMS, Autoscope DCS	page 7-11
Notes	Signals, DMS, RTMS, Autoscope DCS	page 3-14
Device Collection Monitor	Signals	page 6-19
Launch Cobalt Front Panel / Launch ASC/3 Front Panel	Signals	
Launch Signal Editor	Signals	page 15-2

#### **Monitoring Devices**

• Viewing the Device Status Window

Command	Available for	Refer to
MOE Reports / MOE Settings	Signals	page 11-1
Upload MOE Logs	Signals	page 11-3
Split Monitor	Signals	page 6-26
Blank Sign	DMS	page 9-12
Edit Messages	DMS	page 9-4
Activate Message	DMS	page 9-11
Quick Message	DMS	page 9-13
Central Override	DMS	page 9-9
Software Reset	DMS	
Detector Group Chart	RTMS, Autoscope DCS	page 17-33
Zoom to Entity / Parent	Signals, DMS, RTMS, Autoscope DCS	page 5-14
Launch Map Editor	Signals, DMS, RTMS, Autoscope DCS	page 5-18

### To filter the devices:

- **1** Right-click the Type column header:
- 2 From the "Filter" sub-menu, check the device types to show, and uncheck the device types to hide.

### To select the columns to show in this window:

- **1** Right-click one of the column headers:
- 2 From the "Hide or show column" sub-menu, check the columns to show, and uncheck the columns to hide.

### To group the devices:

- 1 Right-click one of the column headers, as shown above.
- 2 From the "Grouping" sub-menu, select the column by which to group the devices.

The examples below show some of the grouping possibilities:

Device Status										
Name 👻	Description	Туре	General Status	Communications	Alerts	Alarms	Primary Street	Secondary Street	Sub-type	
⊞ ASC/3										
🕀 Oasis										
(⊞ W4										
📃 Variable Message Sign										
Sign @ Eastwood Transit Center	Skyline		Comm Good w/ Me	100.0 %	0	0	Eastwood Rd	CR 71	Variable Message S	Sign
Sign @ I-25 & Woodmen	Daktronics		Comm Fail	0.0 %	0	0	Woodmen Rd	Interstate 25	Variable Message S	Sign

Grouped by Subtype

Viewing the Device Status Window •

Device Status										
Name 👻	Description	Туре	General Status	Communications	Alerts	Alarms	Primary Street	Secondary Street	Sub-type	
Active Alarms										
Annie Goolahee @ Bad Billy Pratt	504	1	SYS/2	100.0 %	0	1	Annie Goolahee	Bad Billy Pratt	ASC/3	
Annie Goolahee @ Olaf Way	501	1	SYS/1	100.0 %	0	1	Annie Goolahee	Olaf Way	ASC/3	
Annie Goolahee @ Sweet Trav	502	1	SYS/FLSH	100.0 %	0	1	Annie Goolahee	Sweet Trav Ln	ASC/3	
Annie Goolahee @ Tofutti Klein Ave	503	1	STBY/FREE	100.0 %	0	1	Annie Goolahee	Tofutti Klein Ave	ASC/3	
Woodmen Rd @ I-25	W4	1	Comm Fail	?	0	1	Woodmen Rd	Interstate 25	W4	
H No Alarms										

**Grouped by Alarms** 

Device Status										$\boxtimes$
Name 👻	Description	Туре	General Status	Communications	Alerts	Alarms	Primary Street	Secondary Street	Sub-type	
🗄 Good Comm										]
📃 No Comm										
Sign @ I-25 & Woodmen	Daktronics		Comm Good w/ M	0.0 %	0	0	Woodmen Rd	Interstate 25	Variable Message Sign	Ī
Woodmen Rd @ I-25	W4		Comm Fail	?	0	1	Woodmen Rd	Interstate 25	W4	
7 Opeie			Comm Eail		0	1			Aseie	

**Grouped by Communications** 

Device Status										
Name 🐨	Description	Туре	General Status	Communications	Alerts	Alarms	Primary Street	Secondary Street	Sub-type	
🕀 SYS/1										
SYS/FLSH										
Annie Goolahee @ Sweet Trav	502	1	SYS/FLSH	100.0 %	0	1	Annie Goolahee	Sweet Trav Ln	ASC/3	
🕀 Comm Fail										
🕀 Unknown										
E STBY/FREE										
E SYS/2										

**Grouped by General Status** 

In each case, click the 🔄 sign to expand each grouping; click to collapse a grouping.

**Note** • While the devices are grouped, the sort feature is disabled. In order to sort the devices, you must first ungroup them.

• Using Split Monitor

# Using Split Monitor

You can use Split Monitor to analyze phase utilization for standard dual-ring controllers. The Split Monitor diagram compares the actual splits for an intersection to the programmed splits. Use this analysis to adjust the splits for the most efficient throughput. Split Monitor can analyze data six ways:

- Most recent time
- Most recent cycles
- Last pattern
- Real time
- Custom time frame
- Advanced time period

Before Split Monitor can analyze the data:

- You must upload the controller settings and save them to the Centracs database (if this has not already been done). For instructions, refer to Using the Controller Editor Workspace on page 15-10.
- 2 Your system must collect split monitor data for the time period of interest. To do so, turn on the "Split Monitor Logging" action via the scheduler, a manual command, or an action set. For Oasis controllers, also refer to the information about the "Use Oasis Split Monitor Log" Global Setting on page 20-58.

### To run the Split Monitor:

1 From the main menu, select Monitoring ▶ Split Monitor...

Split Monitor	
Select a Signal	
Most recent time	
Uses cycles starting at the present time and going back the specified number of minutes. All patterns are included.	
Most recent 30 minutes	
(Check on data availability)	
Most recent cycles	
C Last pattern	
C Real-time	
Custom time frame	
O Advanced time period	
Cycle Length     Sample Time     Pattern     Alarms       Programmed (avg):     s     Patterns in Sample:     0     Pattern Shown:     Transitions:       Actual (avg):     s     # of Cycles Averaged:     Dattern Shown:     Transitions:       Minimum:     s     Duration of Sample:     End:       Last Refresh:     Image: Start:     Image: Start:	

- 2 To launch the Entity Selection window and select the signal to analyze, click **Select a Signal...** For instructions on how to use the Entity Selection window, refer to page 3-18.
- **3** Select the type of analysis to do:

Туре	Description	Steps		
Most recent time	Uses cycles starting at the current time and going back the specified number of minutes (2 to 100000). All patterns are included.	For "Most recent minutes", enter the time length of the data to analyze. The most recent <i>x</i> minutes of data will be shown (default = 30).		
Most recent cycles	Uses cycles starting at the current time and going back the specified number of cycles (1 to 100000). All patterns are included.	For "Most recent cycles", enter the number of most recent cycles to analyze (default = 10).		
Last pattern	Uses cycles for the pattern before the current or last logged pattern.	No entries necessary; continue to the next step.		
Real-time	Uses data from the current cycle as it is running. The analysis is shown after the cycle has completed. All patterns are included. The graphs are refreshed automatically at the end of each cycle, for as long as you leave the real-time mode running. If you manually refresh the display, the Start time is reset to the current time, and all prior real-time data is discarded from the display.	No entries necessary; continue to the next step.		
Custom time frame	Uses data from a specified date/ time range. All patterns are included.	Enter starting and ending dates and times for the time period to analyze. You can use the date dropdowns or simply enter the dates.		

• Using Split Monitor

Туре	Description	St	eps
Advanced time period	Use this option to specify a date range, a specific time of day, specific days of the week, and/or a specific pattern number.	1	Enter starting and ending dates for the date range to analyze. You can use the date dropdowns or simply enter the dates.
		2	Enter the time period each day (for example, midnight = 0, 11:00PM = 23).
		3	Select the days of the week to analyze.
		4	To analyze a specific pattern, disable the "Include All Patterns" checkbox, and enter the pattern number. Otherwise, leave the checkbox enabled to analyze all patterns together.

4 Click the 📰 "Check on data availability" icon.

When the data check is done, Centracs shows one of two messages:

```
"There is data available. Analysis can be performed."
```

Or

"Data is not available for analysis." In this case, Centracs also shows the reason for no data. For example:

Data is not available for analysis
Programmed pattern data is not available. There is no programmed data for the currently running pattern.

Usually, to resolve this issue, it is necessary to upload the controller settings to Centracs. You can click the button (if shown) to launch the Controller Editor from here. For instructions on how to upload the controller settings, refer to **Using the Controller Editor Workspace on page 15-10**.

Another possible reason for no data is:

```
Data is not available for analysis
The signal is not running coordinated
```

This means that you tried to run in Real-time mode but the signal is not currently in coordination, or that the signal was not running in coordination during the time period or cycle range you chose. Select a different mode, time period, or cycle range.

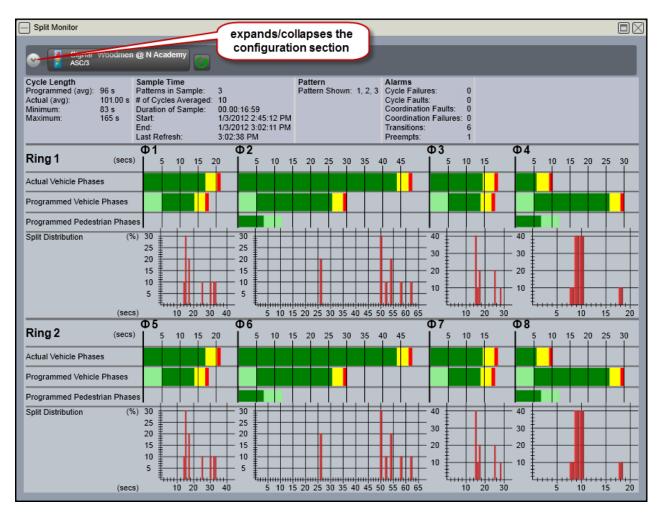
5 If data is available, click the G "Perform analysis" icon.

Using Split Monitor •

A progress bar is shown during the analysis. The configuration section collapses; to expand it again, click the expander in the upper-left corner (to the left of the **Select a Signal** option).

To refresh the data at any time, click the 🕑 icon again.

# Understanding the Split Monitor Results



The top part of the window shows summary information about the selected time range or cycle range. The bottom part shows up to four bar graphs for each phase.

### Using Split Monitor

### Summary Info

The information below is shown in the summary section at the top of the window:

### **Cycle Length**

- Programmed (avg.) The configured cycle length for the pattern, in seconds. If multiple patterns are shown, the programmed cycle lengths are averaged.
- Actual (avg.) The average of the actual cycle lengths during this time period, in seconds. If multiple patterns are shown, all patterns are averaged. Any cycles longer than 255 seconds are ignored.
- Minimum The minimum cycle length that occurred during this time period (for any of the patterns included in the analysis), in seconds.
- Maximum The maximum cycle length that occurred during this time period (for any of the patterns included in the analysis), in seconds.

### Sample Time

- Patterns in Sample The total number of patterns included in the analysis.
- # of Cycles Averaged The total number of cycles included in the analysis.
- Duration of Sample The length of time between the Start and End dates/times, in DD.HH:MM:SS format (days, hours, minutes, and seconds).
- Start The starting date and time for the analysis. (When you use the "Custom time frame" option, the Start time shown may not be the same as the starting time you entered Centracs adjusts it to coincide with the nearest cycle end time so that the analysis includes only complete cycles.)
- End The ending date and time for the analysis. (When you use the "Custom time frame" option, the End time shown may not be the same as the ending time you entered Centracs adjusts it to coincide with the nearest cycle end time so that the analysis includes only complete cycles.)
- Last Refresh The time at which the data analysis was last done (or refreshed); in Real-time mode, this is the end time of the last cycle that completed.

### Pattern

- **Pattern Shown** A list of the patterns that occurred during the analysis period.
- **Oasis Offset** This field is shown only for Oasis controllers.

### Alarms

- Cycle Failures The number of cycle failures that occurred during the analysis period. A cycle failure occurs when the controller is NOT running in coordination, and there is a serviceable call that has not been serviced for two cycles. This field is not shown for Oasis controllers when the "Use Oasis Split Monitor Log" Global Setting is set to true.
- Cycle Faults The number of cycle faults that occurred during the analysis period. A cycle fault occurs when the controller is running in coordination, and there is a serviceable call that has not been serviced for two cycles. This field is not shown for Oasis controllers when the "Use Oasis Split Monitor Log" Global Setting is set to true.
- Coordination Faults The number of coordination faults that occurred during the analysis period. A coordination fault occurs after a cycle fault if the serviceable call is serviced within two cycles after the cycle fault (coordination is retried at this point). This field is not shown for Oasis controllers when the "Use Oasis Split Monitor Log" Global Setting is set to true.
- Coordination Failures The number of coordination failures that occurred during the analysis period. A coordination failure occurs after a coordination fault if a cycle fault occurs again within two cycles of the coordination retry. This field is not shown for Oasis controllers when the "Use Oasis Split Monitor Log" Global Setting is set to true.
- Transitions The total number of cycles that were in transition for all or part of the cycle length; a transition occurs when a signal changes to a coordinated pattern (for example, a change from Free to coordinated pattern 1, or a change from coordinated pattern 1 to coordinated pattern 3).
- Preempts The total number of preempts that occurred during the analysis period. This field is not shown for Oasis controllers when the "Use Oasis Split Monitor Log" Global Setting is set to true.

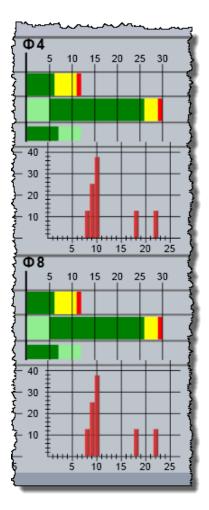
### Graphs

These bar graphs are shown for each phase:

- Actual Vehicle Phases An average of the actual cycle lengths and the splits (green, yellow, and red clear) for all cycles included in the analysis. A separate graph is shown for each phase. The values are shown in seconds.
- Programmed Vehicle Phases The programmed splits for the pattern (min green, green, yellow, and red clear), in seconds; if multiple patterns are shown, the programmed splits are averaged. A separate graph is shown for each phase. The entire length of the bar (including min green, green, yellow, and red clear) shows the overall split length that is configured in the controller for this phase.
- Programmed Pedestrian Phases The programmed Ped Walk (dark green) and Ped Clear (light green) times for the pattern, in seconds; if multiple patterns are shown, the programmed times are averaged. A separate graph is shown for each phase.

Split Distribution – A rough distribution of the splits that make up the Actual Vehicle Phases average for each phase. Use this graph to see whether the average is made up of all splits very near the average or whether there are some very short splits and some very long splits in the mixture. The Y-axis (vertical) shows the percentage of the total number of splits, and the X-axis (horizontal) shows the split length in seconds.

In the Split Distribution example shown below for phases 4 and 8, all of the splits were between 8 and 22 seconds in length; 12% of the splits were 8 seconds in length, 26% were 9 seconds, 38% were 10 seconds, 12% were 18 seconds, and 12% were 23 seconds.



# Using the Time Space Analysis

The Time Space Analysis (TSA) is a visual tool that illustrates coordination relationships between consecutive intersections. It makes a diagram with data from two or more controllers to give you a graphical representation of their timing splits.

Use the TSA tool to analyze progression and coordination along a specified route. The analysis shows progression color bands from multiple intersections that are in coordinated operation, which you can use to verify the level of optimization (based on various parameters).

In order to generate the display, the TSA uses phase data transition information stored in the Centracs database for the selected controllers. Therefore, the controller settings for the signals must have been uploaded to Centracs via the Controller Editor before you can run the TSA. (Refer to *Using the Controller Editor Workspace* on page 15-10.)

**Note** • If you want to always use metric units in the Time Space Analysis tool, enable the "Use Metric Units By Default" Global Setting (refer to *Configuring Local and Global Settings* on page 20-53). If this setting is enabled, metric units are used by default for speed (kph) and distance (km) in all newly added Time Space configurations.

### To run a Time Space Analysis:

1 From the main menu, select Monitoring ▶ Time Space Analysis...

Time Space Analysis	
New Route 🚺 🚺 Save As) Load/Delete	Time Scale:
Programmed Pattern: Historical Real-time	
Scaling: • Evenly distribute space  Maintain scale	

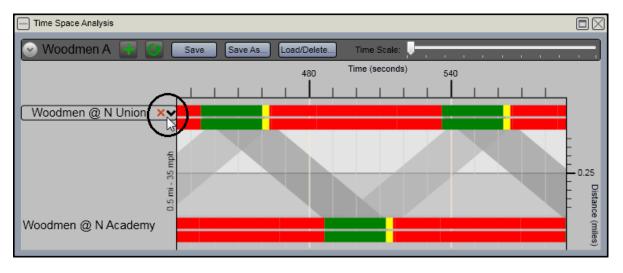
- 2 Select a calculation type: (if these options are not shown, click the expander to unhide them)
  - Programmed Makes a diagram based on coordination plan data. Enter a pattern number in the Pattern field.
  - Historical Makes a diagram based on a specific time period in the past. Enter the start and end dates and times. In this mode, you can analyze up to 24 hours of data.
  - Real-time Makes a diagram based on real-time data as it is received from the signals, including early phase termination due to gap out.
- **3** To add signals to the analysis, click the **base** icon. The Entity Selection window opens.

• Using the Time Space Analysis

4 Select the entities to be included in the TSA and click **OK**. For instructions on how to use the Entity Selection window, refer to page 3-18.

If any of the selected entities is shown with a yellow triangle  $\Lambda$ , hold your mouse over the triangle to see the error message:

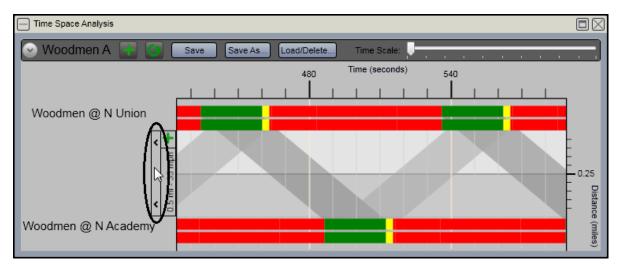
- If the message is "Error loading programmed information...", you must use the Controller Editor to upload the controller settings for this signal. Refer to Using the Controller Editor Workspace on page 15-10.
- If the message is "No split monitor data was logged for the specified time frame", you tried to use Historical mode but there is no historical cycle/ phase length information in the database for this signal for the time range you specified. To collect split monitor data, turn on the "Split Monitor Logging" action via the scheduler, a manual command, or an action set.
- If the message is "The controller is not currently in coordination", you cannot run the analysis in Real-time mode. Instead, choose Programmed or Historical mode.
- 5 To rearrange the order of the intersections, click the ▲ and ▲ arrows to the right of the signal names (circled below). To delete an intersection, click the 🗙 to the right of the signal name (also circled).





Using the Time Space Analysis •

6 To change the distance or the estimated average vehicle speed between two intersections, hold your mouse over the vertical distance/speed indication, then click the bar that is shown (circled below).



Two fields for Distance and Speed are shown, as shown above. Make the necessary changes, then click **OK**. When you enter distances, be sure to include the units (such as **miles**, **mi**, **km**, **feet**, **ft**, **meters**, or **m**). You can enter speed values with units of **mph** (miles per hour), **kph** (kilometers per hour), **ft/s** (feet per second), or **m/s** (meters per second).

On systems that use spatial map data, Centracs uses the spatial data in the database to determine the distance between each intersection (rather than requiring you to manually it). If Centracs is unable to get a distance from the spatial database within the time specified by the "Spatial Timeout" Global Setting (which defaults to 15 seconds), the distance is set to 0. In this case, optionally, you can click the **Update Distance** button to override the timeout and retrieve the distance from the spatial database anyway.

7 Click each intersection name to configure signal-specific settings. The Signal Location Properties window opens:

Signal Location Properties
Woodmen @ N Academy
Pattern 1 Programmed Cycle 90 Programmed Offset 5
New Offset 0.0 Save
Ring 1: Bands ▲ (up) 1234 Ring 2: Bands ♥ (down) 5678
ring order OK phases

Using the Time Space Analysis

This window shows the current cycle time and offset configured in the controller.

To see the programmed times for other patterns, change the number in the Pattern field.

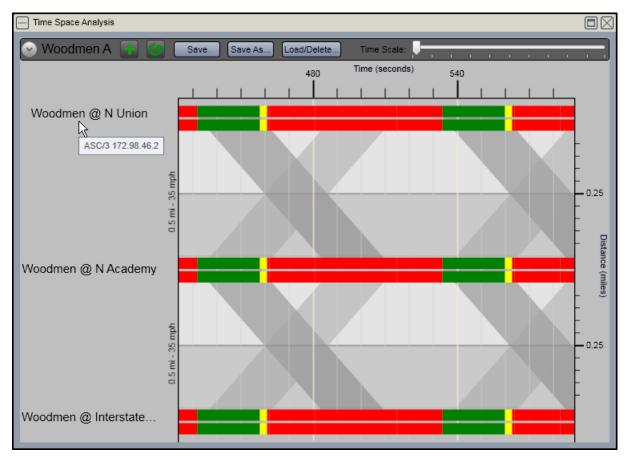
To change the order of the rings, click the  $\checkmark$  or  $\land$  arrow.

To specify the direction of traffic to analyze, click the button to the right of the Bands field until it shows the option you want:

- A analyzes traffic flow in the up direction on the diagram, i.e., from this signal to the signal above it
- 🗹 analyzes traffic flow in the down direction on the diagram, i.e., from this signal to the signal below it
- turns off the analysis for the specified ring

To change the phases included in the diagram, click the phase numbers to enable or disable them.

8 To start the TSA calculations, click the Perform Analysis icon. The TSA plots the locations of the signals along the vertical axis and the signal timing along the horizontal axis:



Using the Time Space Analysis •

The left side of the screen shows the signals on the selected route. The right side shows the analysis — using colored bars, and gray progression bands between the intersections. The vertical Y-axis represents the distance between each intersection; the horizontal X-axis represents time in seconds.

Each pair of colored horizontal bars represents an intersection, and shows the red, yellow, and green times for the coordinated phases for that signal. The top bar represents Ring 1, the bottom bar represents Ring 2.

The diagonal gray bands indicate the flow of traffic from one intersection to the next (for two-way traffic, two gray bars are shown, one for each direction). They represent the estimated vehicle progression between intersections based on the distance between the intersections and the average speed along the route. Follow each gray band from left to right — from the green interval of one intersection to the next intersection — to determine whether vehicles will arrive on green, yellow, or red. In the example above, nearly all of the vehicles will arrive on red.

If you make changes to any of the settings, click i again to refresh the diagram.

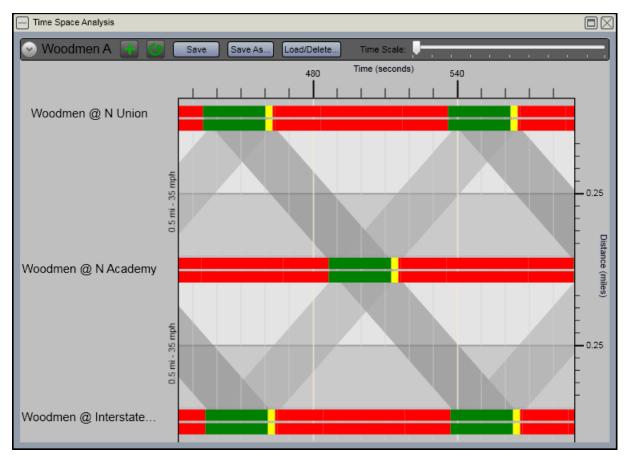
To zoom in or out on the X-axis, use the Time Scale slider at the top of the window — slide it to the right to zoom in, to the left to zoom out.

To view descriptive information about a signal, hover the mouse pointer over the signal name, as shown above. (This information is populated from the Description field on the Entity Configuration window.)

9 In Programmed or Historical mode, you can use the diagram to adjust the coordination offsets and increase the efficiency of the signals. Drag and drop the colored bars horizontally until the gray diagonal progression bands line up from green to green for each intersection. (This feature is not available in Real-time mode.) Remember to follow the gray progression bands from left to right, not from right to left. Depending

### Using the Time Space Analysis

on the distance, speed, and cycle time settings for each intersection, you may not be able to line up all the greens perfectly; but the idea is to achieve the best fit, resulting in the highest possible number of arrivals-on-green:



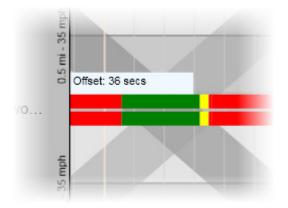
In many situations, it is difficult to achieve optimal progression in both directions using the same plan. In these cases, it is advisable to create two different plans: one for morning rush hour and one for afternoon rush hour. The example above achieves optimal progression during morning rush hour, where the bulk of the traffic is moving from residential areas into commercial areas (Southbound, in this case). The example

Using the Time Space Analysis •

below achieves optimal progression during afternoon rush hour, where the bulk of the traffic is moving from commercial areas into residential areas (Northbound, in this case):

Whereas if you attempt to use only *one* of these plans for *both* periods of rush-hour traffic, a sizable number of vehicles will arrive on red.

As you drag the bars, the resulting offset for that intersection is shown directly above the bars near the left side of the window:



After you have made all the necessary adjustments to the colored bars, you can hold your mouse over each of the bars to see the new recommended offsets for each ring as a result of your changes:



• Using the Time Space Analysis

**10** If you are satisfied and you decide to change the controller settings based on this TSA, click the signal name. The Signal Location Properties window opens, showing the new offset value:

Signal Location Properties
Woodmen @ N Academy
Pattern 1 Programmed Cycle 90
Programmed Offset 5
New Offset 36.0 Save
<b>↓ Ring 1:</b> Bands ▲ (up) 1234 <b>↑ Ring 2:</b> Bands ♥ (down) 5678
OK Cancel

#### **Note** • The New Offset value must be between 0 and 255 seconds.

11 Click Save... The Set Controller Offset window opens:

- Set Controller Offset
Pattern 1 Offset 36
Save to Database Save and Download Cancel

12 To save the new offset to the Centracs database, click Save to Database, or to save the new offset to the field controller AND the Centracs database, click Save and Download.

**Note** • The new offset is saved and/or downloaded for the specified pattern only; you must save/download each signal and each pattern separately.

### To add more signals to an existing route:

- 1 On the main TSA window, click the **I** icon.
- 2 Use the Entity Selection window to select the signal(s) to add.
- 3 Make any changes necessary (e.g., rearrange the new signals, etc.).
- 4 Click Save.

### To delete a signal from an existing route:

1 On the main TSA window, hold the mouse over the signal to delete.

- Using the Time Space Analysis •
- 2 Click the X to the right of the signal name.
- 3 Click Save.

#### To save a TSA route:

- 1 On the main TSA window, click **Save As...** The Save Route As window opens.
- 2 Enter a name for the route and optionally, a description.
- 3 Click OK.

#### To open a saved TSA route:

- 1 On the main TSA window, click **Load/Delete...** The Load/Delete Route window opens.
- 2 Highlight a route and click **Load**.

#### To delete a saved TSA route:

- 1 On the main TSA window, click **Load/Delete...** The Load/Delete Route window opens.
- 2 Highlight a route and click **Delete**.
- 3 If asked to confirm the deletion, click **Yes**.

Detectors

# Detectors

# **Real-Time Detector Status**

The Detector Status window shows real-time data about the volume, occupancy, and speed calculations collected from one or more vehicle detectors.

To open the real-time detector status window:

From the main menu, select Monitoring > Real-Time Detector Status...

#### Or

From the Entity Tree, double-click a detector, or right-click it and select **Show Status...** 

Ε	Real-	Time Detector	Status:					
	Ave	rage Volume	Sum Volu	me Oc	upancy	Avg Speed	VOS Table	
			A	verage Volu	ume			
	on 1/1/2	2011 4/1/	2011 7	/1/2011	10/1/2011	1/1/2012	Volume	
	_	tectors						
	Detect	ors						

#### To add one or more detectors to be monitored in real time:

- **1** Expand the Detectors section at the bottom of the window.
- 2 Click to launch the Entity Selection window.
- **3** Select one or more detectors and click **OK**. For instructions on how to use the Entity Selection window, refer to page 3-18.

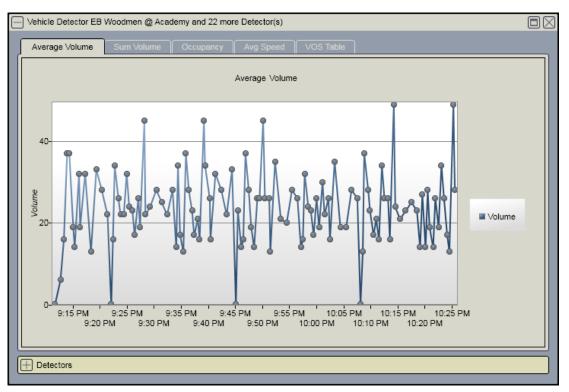
Real-Time Detector Status

#### Note • You can also drag detectors from the Entity Tree onto the Detector Status window.

The Detector Status window includes five tabs of data. When the window is first opened, the tabs are blank. As the detectors reply to poll requests from the system (usually one time per minute), data will start to be shown on the tabs. The first four tabs contain graphs; the VOS Table tab shows the volume, occupancy, and speed data used to make the graphs, in tabular format. For supported detector types, the Status column shows any existing detector faults (otherwise, this column shows "OK"); the Valid column shows whether the system considers the volume, occupancy, and speed data from this detector to be reliable (in the case of a detector fault, the system considers the data to be unreliable and does not include it in the graphs/calculations).

**Note** • The VOS Table tab allows primary and secondary sorting. To sort by one column only, click the column header; to sort by a second column, hold the Shift key while you click the second column header. The VOS Table tab also allows grouping. To group the data by detector name, right-click the column header and select "Group by Detector"; to ungroup the data, right-click the column header and select "Ungroup Detectors". When sorting, data will sort within the groups.

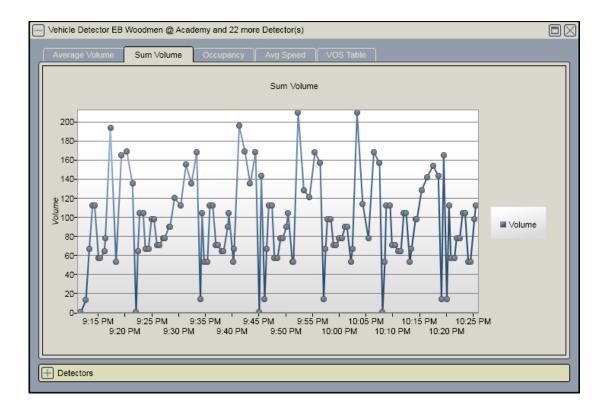
A maximum of 24 hours of data can be shown in the Detector Status window. When you close the window, all information is discarded.

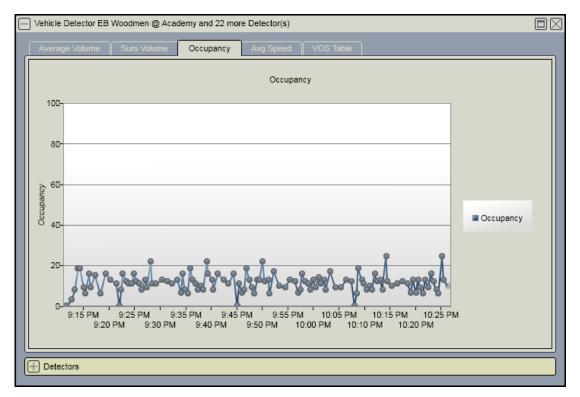


#### **Sample Graphs**

#### **Monitoring Devices**

Real-Time Detector Status





# Real-Time Link Status

The Link Status window shows real-time data about the Volume, Occupancy, Speed, V+kO, and Level of Service calculations collected from one or more LOS Links (page 3-54).

**Note** • To get historical Link data, run the Links report (page 10-28).

To open the real-time link status window:

From the main menu, select Monitoring > Real-Time Link Status...

Or

From the Entity Tree or Map Viewer, double-click a Link, or right-click it and select Show Status...

Ξ	Real-Time l	Link Status:					
	Volume	V + kO	Occupancy	Speed	Level of Serv	ice	VOS Table
				Volume			
	1-						
	0.9-						
	0.8-						
	0.7-						
	лон 0.6-						
	In 0.6- Horicles ber Noticles						Volume
	95;40.4-						volume
	0.3-						
	0.2-						
	0.1-						
	0-1/1/2011	4/1/201	1 7/1/2011	10/1/2	2011 1/1/2	012	
	17112011	4/1/201	. ////2011	10/1/2		012	
	+ Links					_	
						-	

#### To add one or more Links to be monitored in real time:

- 1 Expand the Links section at the bottom of the window.
- 2 Click to launch the Entity Selection window.
- **3** Select one or more Links and click **OK**. For instructions on how to use the Entity Selection window, refer to page 3-18.

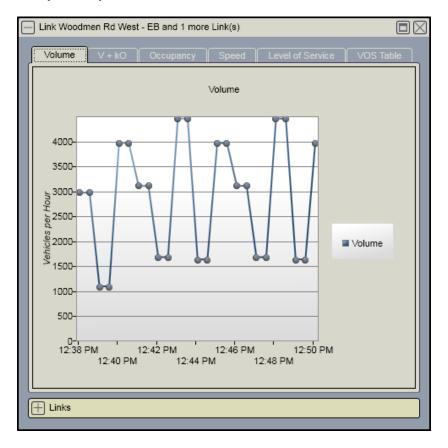
Real-Time Link Status

#### **Note** • You can also drag Links from the Entity Tree onto the Link Status window.

The Link Status window includes six tabs of data. When the window is first opened, the tabs are blank. As the detectors in the Links reply to poll requests from the system (usually one time per minute), data will start to be shown on the tabs. The first five tabs contain graphs; the VOS Table tab shows the data used to make the graphs, in tabular format.

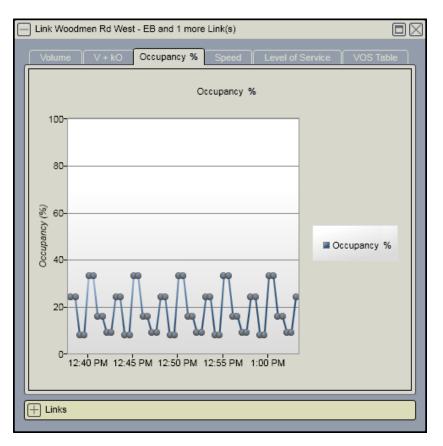
**Note** • The VOS Table tab allows primary and secondary sorting. To sort by one column only, click the column header; to sort by a second column, hold the Shift key while you click the second column header.

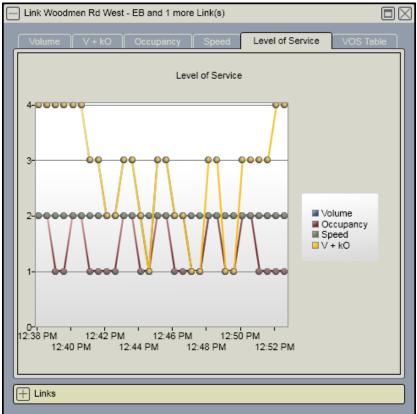
A maximum of 24 hours of data can be shown in the Link Status window. When you close the window, all information is discarded.



#### Sample Graphs

Real-Time Link Status





Monitoring Detector Faults

The Level of Service graph is a visual representation of the efficiency with which the roadway is serving traffic over time. The link levels defined in your Link Settings window are shown on the Y axis (the scale of this axis may vary depending on how many levels you have configured). Low levels indicate free-flowing traffic or no traffic; high levels indicate traffic congestion.

**Note** • The sample Level of Service graph shown above does not show realistic real-world data; it is used only to illustrate the different aspects of the graph.

# Monitoring Detector Faults

For ASC/2, ASC/3, and Cobalt controllers, the Detector Fault Status window is a list of all existing detector faults. All detectors are monitored, regardless of whether they are defined in the Entity Tree.

#### Note • Detector faults are reported to Centracs only if:

the "shortAlarmStatus" object is included in the polling packet definition. For more information, refer to *Configuring Polling Packets* on page 20-50.

and

the "ActivateDetectorDiagnostics" Global Setting is set to "true". Without this setting, the Detector Fault Status window is disabled. (It may be necessary to stop and start the Centracs Core service on the server machine in order for changes to this parameter to take effect.)

#### To see live detector faults:

From the main menu, select Monitoring > Detector Fault Status.

<ul> <li>Detector Fault Status</li> </ul>					
Refresh Print	)				
Date/Time	Signal Name	Detector Number	Detector	Detector Type	Detector Faults
1/6/2011 5:34:11 PM	Woodmen @ Rockrimmon	1	Woodmen @ Rockrimmon-1	Veh Detector	No Activity Fault
1/6/2011 5:34:11 PM	Woodmen @ Rockrimmon	3	Woodmen @ Rockrimmon-3	Veh Detector	No Activity Fault
1/6/2011 5:34:11 PM	Woodmen @ Rockrimmon	4	Woodmen @ Rockrimmon-4	Veh Detector	No Activity Fault
1/6/2011 5:34:11 PM	Woodmen @ Rockrimmon	5	Veh Detector	Veh Detector	No Activity Fault
1/6/2011 5:34:11 PM	Woodmen @ Rockrimmon	7	Woodmen @ Rockrimmon-7	Veh Detector	Max Presence Fault
1/6/2011 5:34:11 PM	Woodmen @ Rockrimmon	2	Ped Detector	Ped Detector	No Activity Fault

The first column shows the date and time at which the detector fault data was last polled (the polling frequency is determined by the settings in the Polling Packet Editor (page 20-50) and the Servers/Comms Configuration window (page 20-36). For each faulted detector, this window also shows the signal name, the detector number (i.e., the

Monitoring Detector Faults •

Controller Reference number in the Entity Configuration for the detector), the detector name (if any), the detector type, and the existing fault(s) for that detector.

You can sort this table by any column.

To update the list with the most current fault information, click **Refresh**. When a fault is no longer being reported to the system by the controller, it is removed from this list.

To run the Detector Fault Status report (page 10-22), which is a printable view of the existing detector faults, click **Print**.

**Note** • For a history of all detector faults that have occurred during a specific time range (both existing and resolved faults), run the System Events report for all the "Detector" event types (NTCIP controllers only), or run the Signal Detector Events report (NTCIP and ACT controllers). Refer to *System Events Report* on page 10-51 or *Signal Detector Events Report* on page 10-34.

Dynamic Message Signs (DMS)

# **Dynamic Message Signs (DMS)**

# Using the DMS Status Display

The DMS Status display shows a graphical representation of the current status of a dynamic message sign:



For details, refer to page 9-7.

# Viewing the Device Status Window

You can view the current communications status of all your DMS devices at once, using the Device Status window. Refer to page 6-23.

# DCMS

For information about the Autoscope Status display, refer to Chapter 17, *Using DCMS for Data Collection*.

# MMS

For information about the Status displays in the MMS module, refer to Chapter 19, *Managing Assets Using MMS*.

Communication Statistics

# **Communication Statistics**

## Viewing Overall Comm Statistics

The Comm Statistics window shows details about the current communications quality between Centracs and each device. It shows statistics for the last 60 seconds.

**Note** • To get statistics about communications for a specific time period in the past, run the Comm Statistics report (page 10-20).

These devices are not shown in the Comm Statistics window:

- Devices without any configured communication settings (on the Entity Configuration window)
- Devices from external Server-to-Server systems

To launch the Comm Stats window and get current communications statistics:

1 From the main menu, select Monitoring ▶ Comm Statistics...

Ē	Comm Statistic	s										$\boxtimes$
	Refresh											
	Device	Timestamp	Attempts	Failures	Comm Success %	Last Fail Time	Last Fail Error	Poll Success %	Poll Period Avg (ms)	Poll Time Avg (ms)	Subscribers	
	Skyline Sign	10/6/2014 11:18:03 AM	2	2	0.0	10/6/2014 11:18:01 AM	Read timeout	0.0	30000	0		٠
	Controller 501	10/6/2014 11:18:03 AM	64	0	100.0			100.0	999	0	Split Monitor Collector	
	Controller 503	10/6/2014 11:18:03 AM	64	0	100.0			100.0	999	0		
	Controller 502	10/6/2014 11:18:04 AM	64	0	100.0			100.0	1000	0		
	Controller 504	10/6/2014 11:18:04 AM	64	0	100.0			100.0	1000	0	Signal Dialog	5

**2** To update the communications statistics, click **Refresh**.

For each device, this window shows:

- **Device** the name, as specified in the Entity Tree.
- Timestamp the date and time of the last refresh of these statistics.
- Attempts the total number of communication attempts made within the last 60 seconds.
- Failures the number of those attempts that failed.
- Comm Success % the calculated success rate percentage of all communications (polling and non-polling comms) with this device within the last 60 seconds:

Comm Success % = ((Attempts - Failures) / Attempts) \* 100

- Last Fail Time the date and time of the last communications failure to this device (a value in this field does not necessarily mean there is *currently* a failure; the Comm Success % and Poll Success % columns show the *current* status of communications).
- Last Fail Error the type of error that occurred at the Last Fail Time.

Viewing Overall Comm Statistics

- **Poll Success %** the calculated success rate percentage of all *polls* to this device within the last 60 seconds.
- **Poll Period Avg** the average time between polls to this device (in milliseconds) within the last 60 seconds. The Primary Poll Rate specified for the device in Centracs is the *intended* poll rate; the Poll Period Avg is an average of the *actual* poll rates for the specified date/time range. Times are measured from the start of one poll to the start of the next poll.
- **Poll Time Avg** the average time (in milliseconds) from when a poll was sent to when the response was received, within the last 60 seconds.
- Max Poll Time the maximum time (in milliseconds) from when a poll was sent to when the response was received, within the last 60 seconds.
- **Subscribers** shows which Centracs functions, if any, are currently requesting priority polling for a device. For example, in the sample shown above, the Subscribers column shows that at least one user has the Signal Status window open for Controller 504, and that the Split Monitor Logging action is running for Controller 501. Both of these functions use priority polling. For more information, refer to *Priority Poll Rate* on page 20-42

**Note** • The Attempts, Failures, and Comm Success % values include both polling and non-polling comms; the Poll Success % column is based on polling comms only. For more information, refer to *Overview of Polling Comms vs. Non-polling Comms* on page 20-47.

Comm Statistics Detail	ails									
					Contr	oller 50	)1			
General Information				Poll Me	essage S	ummary	N	Ion-Poll Me	essage Summary	
Timestamp	10/6	/2014 11:1	8:03 AM	Messa	iges	62	I	Messages	2	
Poll Success Rate %	100.	0		Failure	es	0	F	Failures	0	
Comm Success Rate	% 100.	0		Retrie	s Used	0	F	Retries Use	ed 0	
Last Fail Time				Bytes	Sent	114	E	Bytes Sent	4	
Last Fail Error				Bytes	Received	1621	E	Bytes Rece	eived 2	
Subscribers	Split	Monitor C	ollector							
Poll Details										
Poll Message	Sent	Failed	Average F	Period	Average	Elapsed		Missed	Last Failure Code	Last Failure Time
Primary	60	0	00:00:00.	9997721	00:00:0	0.000325	5	0	Success	1/1/0001 12:00:00 AM
DetectorDiagnostics	1	0	00:00:59.	9853515	00:00:0	0		0	Success	1/1/0001 12:00:00 AM
Secondary	1	0	00:00:59.	9853515	00:00:0	0	Τ	0	Success	1/1/0001 12:00:00 AM
	_	_		_	_	_	_			
										Close

To see more statistics for a device in the list, double-click it.

This window shows per-poll message statistics for the last 60 seconds of activity. To refresh the Details window, click **Refresh** on the main Comm Statistics window.

**Note** • Non-polling comms include commands sent to the device (to synchronize the time, to upload/download controller settings, etc.). A number of non-poll attempts also occur automatically when Centracs first establishes comms to a device.

# Viewing Comms on the Status Display

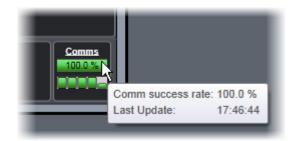
The Comms section of the Signal Status display (page 6-1), Autoscope Status display (page 17-29), RTMS Status display (page 17-31), and DMS Status display (page 9-7) is a summary of the communications status between Centracs and the selected field device.

Signal Status, DMS Status, RTMS Status Displays

The bar on top shows the calculated communication success rate for the device. The color of the top bar indicates the overall communications status (green=good, yellow=marginal, red=bad). Examples:



You can see additional information by holding your mouse pointer over the top bar:



The Last Update field shows the time of the last poll.

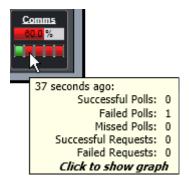
The bar on the bottom is a five-segment bar that shows the most recent poll activity. Each segment of the bar represents one poll. The right-most segment represents the most recent poll. A green segment indicates a successful poll; a red segment indicates a failed poll (i.e., no response was received, or the response was invalid); a yellow segment indicates a missed poll (i.e., a poll was not doable within the poll period interval — maybe an upload or download was in progress, the network was saturated, the CPU was saturated, or the time-out value is set to be higher than the poll rate). In the example below, comms are 100% (including polls), but Centracs was unable to do a poll in 3 of the 5 polling periods because significant bandwidth was needed to perform an upload of tables for a signal controller on a serial channel:



The amount of time represented by the entire bottom bar depends on the poll period of the device. For example, if the device is being polled once per second, the bar represents the most recent five seconds of activity. If the device is being polled once per minute, the bar represents the most recent five minutes (roughly) of activity — but each segment still represents one second.

• Viewing Comms on the Status Display

You can hover the mouse pointer over any of the five segments to see details about that individual poll. The details show the count of successful polls, failed polls, missed polls, successful requests, and failed requests. ("Requests" are non-polling communications, such as Get Time/Set Time commands.) For example:



**Note** • While you hold the mouse pointer over a segment, you suspend the updating process for the five segments. When you move the mouse pointer away, it may take a few seconds for the display to catch up.

The user-defined Primary Poll Rate or Priority Poll Rate determines the polling interval. These poll rates are set on the Servers/Comms Configuration window (for an entire channel; refer to page 20-36) or on the Device Communication Configuration window (for a specific device; refer to page 3-44). For more information about priority polling, refer to *Priority Poll Rate* on page 20-42.

To view the Comm Statistics Graph (page 6-56) for the selected device, click the bottom bar.

On the Signal Status display only, to test the comms between Centracs and a signal controller, click the top bar. For details, refer to page 6-16. (This option is not available for DMS, RTMS, or Autoscope devices.)

If there is a communication problem, a message such as the one below is shown in the message area at the bottom of the window:



Viewing Comms on the Status Display

# Autoscope Status Display

The bar on top shows the calculated communication success rate for the device. The color of the top bar indicates the overall communications status (green=good, yellow=marginal, red=bad). Examples:

Comms	<u>Comms</u> 50.0 %
Last Update:	Last Update:

The bar on the bottom shows whether the most recent status poll succeeded (green) or failed (red).

For some device types, you can see additional information by holding your mouse pointer over each bar:



bottom Comms bar

The Last Update field shows the time of the last poll. The user-defined Primary Poll Rate or Priority Poll Rate determines the polling interval. These poll rates are set on the Servers/Comms Configuration window (for an entire channel; refer to page 20-36) or on the Device Communication Configuration window (for a specific device; refer to page 3-44). For more information about priority polling, refer to *Priority Poll Rate* on page 20-42.

If there is a communication problem, a message such as the one below is shown in the message area at the bottom of the window:



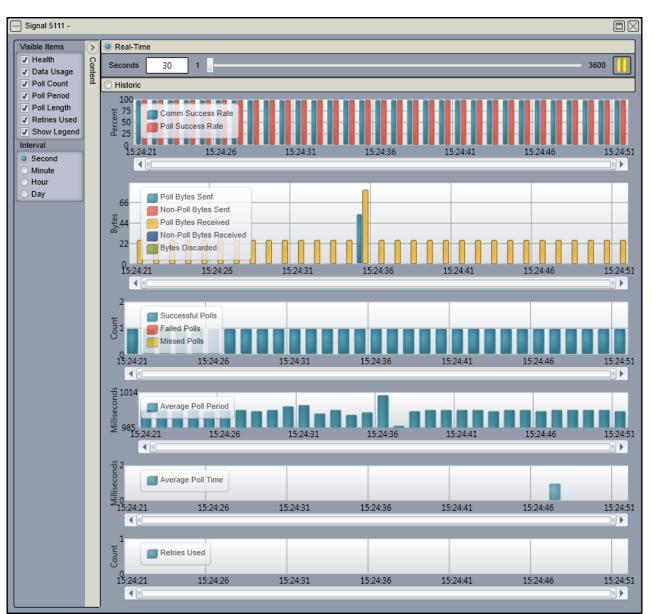
• Viewing the Comm Statistics Graph

# Viewing the Comm Statistics Graph

In the Comms section of the Signal Status display (page 6-1), DMS Status display (page 6-50), and RTMS Status display (page 17-31), click the bottom Comms bar to show the new Comm Statistics Graph window. This window allows you to identify communication problems more easily, as well as to identify trends in your communications (for example, you may determine that system command failures are high during certain times of the day).

This window has two modes:

Real-Time: to view current communications information



Historic: to view information for a specific time period in the past

On the left side of the window, you can select which of the six available graphs to show, whether to show a legend on each graph, and whether to aggregate the data by second, minute, hour, or day. (The Second interval is available only in Real-Time mode.)

The available graphs are:

- Health
- Data Usage
- Poll Count
- Poll Period
- Poll Length
- Retries Used

Each graph's legend shows the types of data shown on that graph. You can hover the mouse pointer over any bar on the graphs to see more details about that bar.

In Real-Time mode, you can use the Seconds field or the Seconds slider bar (at the top) to specify the amount of time to show on each graph (between 1 and 3600 seconds). For example, if you set the Seconds to 1800, each graph will show data for the most recent 30 minutes. A button in the upper right corner of the window allows you to pause or resume updating the graphs in real-time.

In either mode, you can use the scroll wheel on your mouse to zoom in or out. While zoomed in, use the slider bar below the graphs to move left or right along the X axis.

**Note** • In Historic mode, you can query a maximum of 3600 data points. If your selected data range will return more than 3600 data points, the date/time range fields turn red. To proceed, either limit the date range, or change your selection for the Interval option.

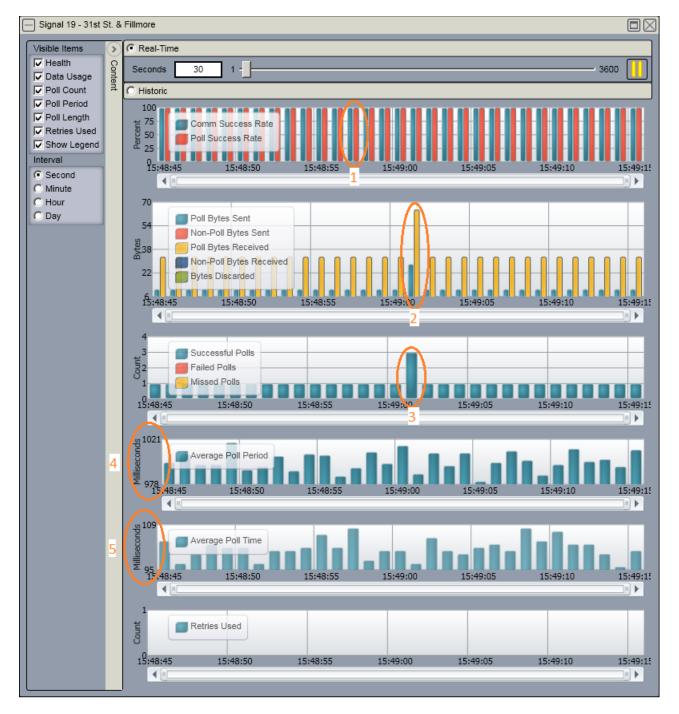
• Viewing the Comm Statistics Graph

# Interpreting the Comm Stats Graph

Examples of the Comm Statistics Graph are shown below to help you interpret the data you may see on your system.

# Comm Scenario: Good Comms

This example shows good communications with a one-second primary poll rate to a device:



Viewing the Comm Statistics Graph •

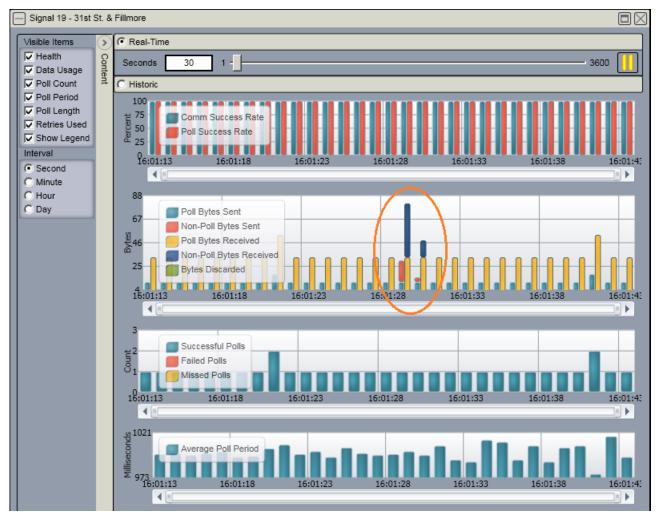
## **Callouts on the Graph:**

- 1 This area shows that both the communication success rate and the ability to poll in the desired time period are at 100%. This is what you typically want to see.
- 2 This area shows that more poll bytes were sent and received in this period of time than the surrounding times. This occurred because this device has multiple types of poll messages of varying polling periods. In this case, there were primary, secondary, and tertiary poll message transactions that occurred. This is confirmed by item 3 below.
- 3 As mentioned in item 2, three poll messages occurred in this time period. When more than one poll is indicated in the same polling interval, it usually means that they were for different poll message types.
- 4 The scale on these graphs automatically adjusts, which can be confusing at times. The large variance in the bars might give the impression that there is a large variance in the poll period, but this graph actually shows a very small variance plus or minus ~20 milliseconds for the 1000 millisecond poll period.
- 5 For the average poll time, a smaller time is usually better; but the time can be impacted by a number of factors, including device type and comm infrastructure. The poll time is measured from the time Centracs sends a poll request until the response is received by Centracs. This example is for an Oasis signal controller over a 9600 baud serial channel.

• Viewing the Comm Statistics Graph

Comm Scenario: Good Comms With Some Non-Poll Data

This example shows good communications along with a small amount non-polling comm traffic:

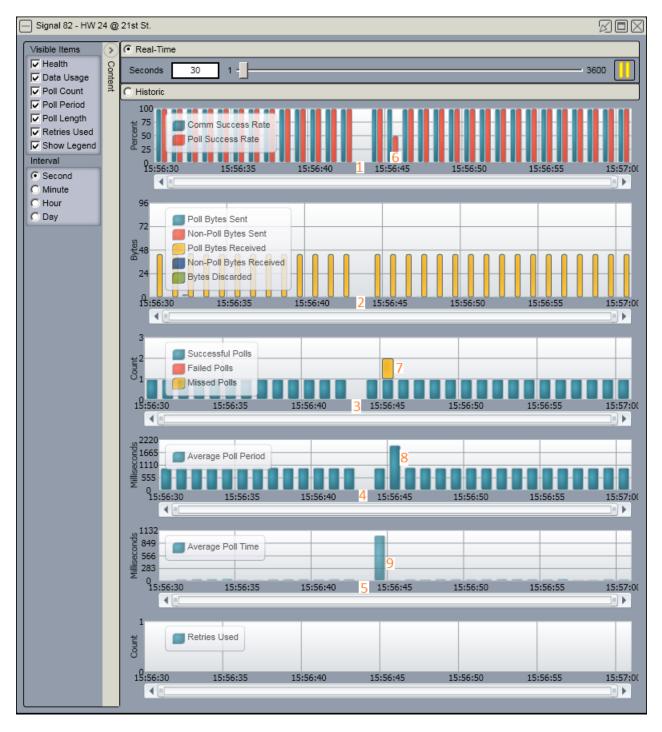


The circled area shows that there were two separate non-poll messages sent to the device with some type of response received for each. The two bottom graphs ("Successful Polls" and "Average Poll Period") show that the non-poll messages had little to no impact on the polling — no failed or missed polls are shown, and the average poll period at the time of the non-poll messages is nearly identical to the poll period before and after the non-poll messages.

Although this example shows no impact to polling, this is not always the case. Non-poll messages can impact the ability of Centracs to maintain polling to a device — primarily due to the type of message or the type of comm infrastructure.

#### Comm Scenario: Delayed Poll Response

This device is being polled once per second. This example shows a poll that took considerably longer to get back to Centracs; the response did, however, make it to Centracs before the configured Device Timeout:



• Viewing the Comm Statistics Graph

### **Callouts on the Graph:**

- 1 This area shows that no message transaction occurred during this time period. This does not indicate a failure it only means that a send/response transaction did not occur in that time period. This is also true for items 2 thru 5 below. This is a common occurrence on systems with high poll periods.
- 2 No bytes were received in this time period.
- **3** A successful poll did not occur in this time period.
- 4 The poll period measurement is still in progress.
- 5 Same as item 4.
- 6 This area shows that the delayed response was large enough that the poll success rate dropped. This only means that the poll was missed in the desired one-second time frame not that the poll failed. This missed poll also appears on the Status display as a yellow block:



- 7 This area shows that there was a missed poll in a prior interval. In the current second and the prior two seconds, only two polls were accomplished; therefore, the desired poll rate of one poll per second was not met.
- 8 The delayed poll response impacted the average poll period.
- **9** This area shows that the poll time (send/response transaction) took over a second. Some sort of delay occurred between the time the poll request was sent and the time Centracs received the response.

Note that the scale changed dramatically due to the much larger poll time measured. This scale change caused the normal poll response time bars to be very small and difficult to see. Once the large bar shifts off the left side of the graph, the scale will return to a range where you can see the other bars more easily.

Viewing the Comm Statistics Graph •



*Comm Scenario: Single Failed Poll Response* This example shows a polling failure:

#### **Callouts on the Graph:**

1 The three areas noted with a "1" show that the system had nothing to compute because it was waiting for a response.

- Viewing the Comm Statistics Graph
  - 2 This area indicates a failed poll. This means that a response to a poll request was not received within the Device Timeout period. The failed poll also appears on the Status display as a red block:



A yellow block also appears, due to a delayed poll response. And the failed poll caused the overall Comms bar to drop to 92%.

**3** The four areas noted with a "3" reflect the impact of no response to a poll packet.

In the first bar graph above, the Comm Success Rate (blue bar) is always either 0% or 100%. It indicates the percentage of successful comm transactions for the selected time interval. A value of 0% means that no successful transactions occurred — either because no transactions were attempted during the interval, or because the transaction took longer to complete than the interval, or because the transaction failed to complete. Because the Interval is set to "Second" in this example, and because it is uncommon to have multiple transactions within one second, the bar will almost always show 0% or 100%. However, if you set the Interval to a larger time period, there will be more transactions to average, and you will likely see values other than 0% or 100%. In the example below, the Interval is set to "Minute", and the value for the 15:52 minute is roughly 70%:



Viewing the Comm Statistics Graph •



*Comm Scenario: Several Bad Poll Responses Due to a Small Timeout Value* This example shows generally poor comms:

## **Callouts on the Graph:**

- **1** This area shows 10 failed poll messages.
- 2 The average poll times are roughly 120 msec. Because this is a relatively high number for poll times, it is possible that the poll failures are occurring because the Device Timeout value configured for the channel is not large enough to compensate for these

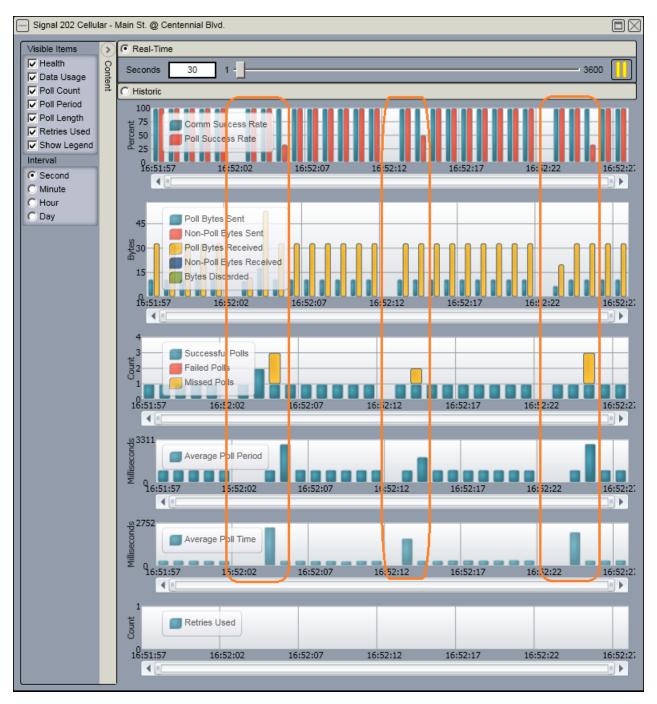
• Viewing the Comm Statistics Graph

higher poll times. In this example, the time it took the device to send a response over a serial channel at 9600 baud was indeed sometimes greater than the programmed Device Timeout value.

3 The two areas noted with a "3" show that three poll messages (primary, secondary, and tertiary) were attempted within the selected Interval, and that two of those failed. The Comm Success Rate and Poll Success Rate are 33%, which confirms that only one of the three polls succeeded.

**Note** • This example shows the possible consequences of a small Device Timeout value, whereas the next example shows the possible consequences of a large Device Timeout value. For these reasons, it is important to configure the timeout value correctly.

Viewing the Comm Statistics Graph •



*Comm Scenario: Good Comms With Periodic Interruptions to Polls* This example shows an interruption to the polling every 10 seconds (circled in orange):

In two of these cases, two polling cycles were missed; in the other case, only one poll was missed.

Since there are no failed polls, the source of the problem is not likely to be the device or a failure of the comm infrastructure. The device is simply not being polled — for some reason, Centracs cannot request the poll packet at the desired rate. To diagnose this issue, you must have knowledge of the comm infrastructure, and you must be aware of other

• Viewing the Comm Statistics Graph

activities occurring in Centracs. For example, if the device is on a serial channel (meaning that it must share the line with other devices on that channel), determining what is happening elsewhere on the shared serial channel would help you diagnose the source of the problem.

In this particular example, research revealed the following diagnosis:

- There was a device on the same serial channel that was not responding to Centracs (i.e., comms were failed).
- The configured Device Timeout value for the channel was very large (1500 msec).
- The period at which Centracs is programmed to retry communications to a failed device was set at 10 seconds.

Although all three of these conditions contributed to the polling interruptions, the major contributor was the failed comms to the other device. Because Centracs is required to wait the entire timeout period for a device to respond, the channel remains inactive during that time, which caused the missed polls. In this situation, the device with failed comms should be set to Offline in Centracs on the Entity Configuration window (if it is known that the device will not be communicating for a period of time); this would prevent the failed device from degrading comms for other devices.

**Note** • This example shows the possible consequences of a large Device Timeout value, whereas the previous example shows the possible consequences of a small Device Timeout value. For these reasons, it is important to configure the timeout value correctly.

Viewing the Comm Statistics Graph •



*Comm Scenario: Good Comms With Significant Interruptions to Polls* This example shows frequent interruptions to the polling:

As with the prior example, since there are no failed polls, the source of the problem is not likely to be the device or a failure of the comm infrastructure. The device is simply not being polled.

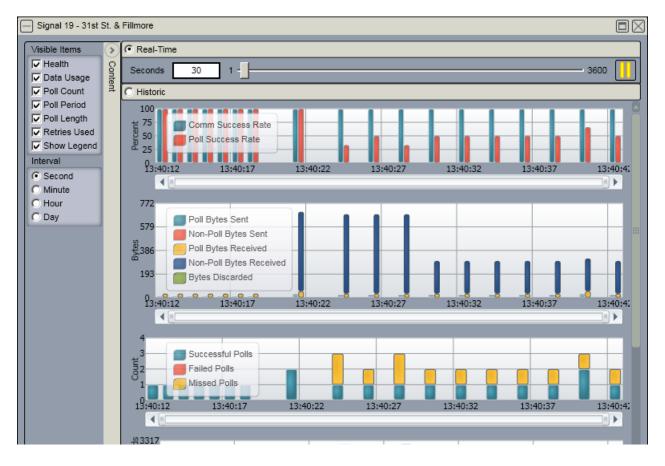
• Viewing the Comm Statistics Graph

In this particular example, research revealed the following diagnosis:

 Someone had started a database upload from another device sharing the serial channel with this device.

It is important to understand that certain actions can impact the ability of Centracs to poll at the desired rate.

The following example shows the Comm Stats Graph for the device where the database upload is occurring — note the large amount of "Non-Poll Bytes Received" (dark blue bars):



7

# Schedule Entries, Manual Commands, and Action Sets

# **Overview of Scheduling and Manual Commands**

In addition to the signal-related commands that you can issue from the Status display, the Entity Tree, and the Map Viewer, Centracs includes two other types of commands: manual commands and schedule entries. You can configure these commands to run immediately or in the future, you can give them an end time, and in the case of schedule entries, you can set them to run repeatedly on a specific schedule.

There are two categories of actions that you can run via a schedule entry or manual command:

- Instantaneous actions, or actions without any duration (for example, Time Broadcast)
- Actions with duration (for example, Set Pattern for 1 hour)

You can run many of the action types for an entire System, Section, Subsection, or Group at the same time with one schedule entry or manual command.

# Schedule Entries

You can use the Centracs scheduler to configure operations that need to be repeated on a fixed schedule — such as time broadcasts, controller log uploads, report generation, and recipient enablement. With the scheduler, it is only necessary to define these recurring commands one time. You can assign simple scheduling conditions (for example, the 1st of each month at 9:00am) or complex scheduling conditions (for example, the 17th of February, each hour on the hour from 9:00am until 9:00pm for 30 minutes at a time, if and only if this day falls on a Monday or Friday and is not a holiday). After the command has been saved and enabled, Centracs automatically runs the command as scheduled, with no operator involvement.

**Note** • The Centracs scheduler is not to be confused with the local schedule that resides on the field controllers.

Manual Commands

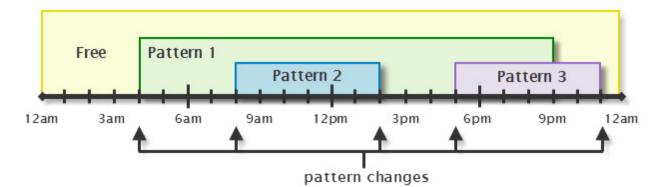
# Manual Commands

Manual commands are temporary or one-time operations, such as archiving or restoring Centracs log data. You can configure them to run immediately or in the future. For actions with duration, you can assign an end time. You cannot set manual commands to repeat (as you can with schedule entries).

Manual commands have a higher priority than schedule entries, and therefore have the ability to override the scheduler.

# Scheduling Conflicts

Scheduling conflicts occur when multiple commands try to control the same signal at the same time. For example, in the diagram below, this signal runs in Free mode (yellow) unless otherwise commanded; but commands to run Pattern 2 at 8am and Pattern 3 at 5pm will conflict with the command that runs Pattern 1 from 4am until 9pm:



And because you can assign a Signal to a Section, a Subsection, and any number of Groups, very complex scheduling conflicts can arise. For example, suppose Signal 1 is in Section A and also in the Football Game Group; if Pattern 3 is sent to Section A and Pattern 5 is sent to the Football Game Group at the same time, which pattern takes precedence for Signal 1? To resolve such conflicts, Centracs considers these factors (in the order shown below):

- 1 the type of command sent (manual command, schedule entry, etc.)
- 2 the type of entity targeted by the command (System, Section, etc.)
- 3 entity parent priorities (configured on the Action Priorities window)
- 4 the **type of recurrence** assigned to the command (for schedule entries only)
- 5 the time of the command

Each of these factors is discussed below.

#### Type of Command

The modes of intersection control are ranked below, from highest priority to lowest priority:

1 Manual command

Scheduling Conflicts •

- 2 Schedule entry with High priority
- 3 Schedule entry with Normal priority
- 4 Traffic Responsive (TR) command
- 5 Local time-of-day (TOD) plan

**Note** • Although you *can* change these rankings on the Action Priorities window (page 20-4), it is highly recommended that you use the default values.

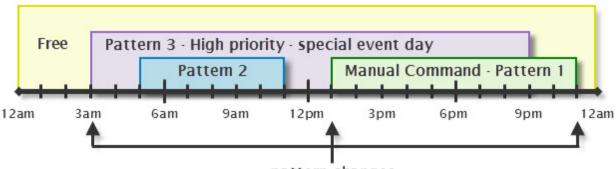
A manual command overrides any other type of command that acts on the same entity at the same time.

All schedule entries are assigned a priority of Normal or High. If two entries are scheduled to send commands to the same entity at the same time, the schedule entry with the higher priority executes first. If they have the same priority, then the winner is determined by the type of entity that was commanded. For details, refer to the next section.

Time-of-day (TOD) plans are configured locally on the controller. Control reverts to the local TOD plan if the controller does not receive any commands from Centracs. This usually occurs when there is a communications failure. This can also occur if the control mode is Traffic Responsive, but sufficient detector data is not available to run in TR mode, and no other control from Centracs is available.

In the diagram below, this signal runs in Free mode (yellow) unless otherwise commanded. These conflicting commands are set to run during the day:

- The scheduler is set to run Pattern 3 with a High priority today from 3am until 9pm
- The scheduler is set to run Pattern 2 with a Normal priority from 5am until 11am



• A manual command is issued to run Pattern 1 between 1pm and 11pm

#### pattern changes

Because High priority schedule entries take precedence over Normal priority entries, Pattern 3 runs at 3am and Pattern 2 is ignored. Because manual commands take precedence over schedule entries, Pattern 1 overrides Pattern 3 at 1pm and runs until 11pm. The signal goes back to Free mode at 11pm. Scheduling Conflicts

# Type of Entity

You can send intersection control commands to one intersection or to a collection of intersections (a System, Section, Subsection, or Group). When scheduling conflicts arise between different entity types, Centracs uses the entity hierarchy obeyed in the Entity Tree to prioritize the commands — but in the opposite order. The entity types are ranked below, from highest priority to lowest priority:

- 1 Signal (one intersection or device)
- 2 Group (multiple Signals, Sections, and/or Groups)
- 3 Subsection (multiple Signals)
- 4 Section (multiple Signals and/or Subsections)
- 5 System (all Signals, Sections, and Groups)

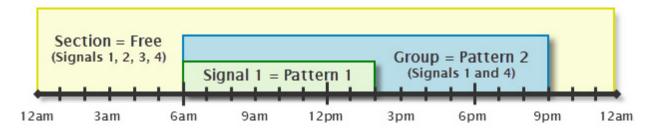
So in the example given earlier:

Signal 1 is in Section A and also in the Football Game Group; Pattern 3 is sent to Section A and Pattern 5 is sent to the Football Game Group at the same time

the command for the Football Game Group would take precedence over the Section A command. Signal 1 would run Pattern 5; any other Signals that are in Section A but NOT in the Football Game Group would run Pattern 3.

For more information about the entity hierarchy, refer to *Entity Types* on page 3-2.

In the diagram below, Signals 1, 2, 3, and 4 are part of a Section; Signals 1 and 4 also belong to a Group. The Section is scheduled to run Free unless otherwise commanded. At 6am, two commands run which both affect Signal 1:



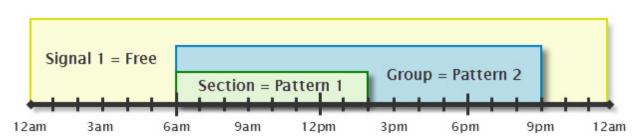
Because a Signal command takes precedence over a Group command:

Signal 1 runs Pattern 1 from 6am until 2pm

Because a Group command takes precedence over a Section command:

- Signal 4 runs Pattern 2 from 6am until 9pm
- Signal 1 runs Pattern 2 from 2pm until 9pm
- Signals 2 and 3 run in Free mode all day

Scheduling Conflicts •



In the diagram below, the Signal and the Section have been reversed:

In this case, Signal 1 runs Free all day because the Section and Group commands are lower priority than the Signal command.

### **Entity Parent Priorities**

On the Action Priorities tab (under **File > Settings**), you can prioritize entity parents in the Entity Tree; these priorities are then used to break "ties" when multiple commands are attempting to act on the same entity at the same time. For more details, refer to *Action Priorities* on page 20-4.

# Type of Recurrence

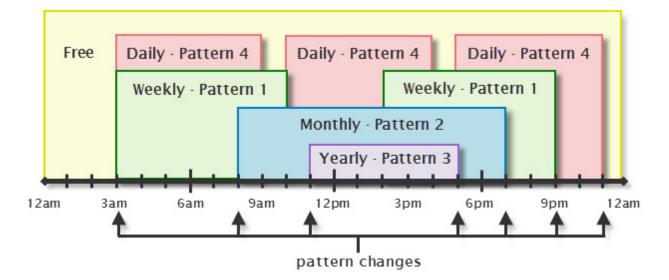
When you define a schedule entry, you must specify how frequently the command will repeat. The Recurrence type plays a role in resolving scheduling conflicts. The types are ranked below, from highest priority to lowest priority:

- 1 No Recurrence
- 2 Yearly
- 3 Monthly
- 4 Weekly
- 5 Daily

In other words, if two schedule entries with the same priority are set to act on the same entity at the same time, the command with the least frequent recurrence executes first.

#### Scheduling Conflicts

In the diagram below, multiple conflicting commands are set to run on the same signal with various recurrences:



In this case, the signal runs:

- Free from 12am until 3am
- Pattern 1 from 3am until 8am
- Pattern 2 from 8am until 11am
- Pattern 3 from 11am until 5pm
- Pattern 2 from 5pm until 7pm
- Pattern 1 from 7pm until 9pm
- Pattern 4 from 9pm until 11pm
- Free from 11pm until 12am

## Time of Command

If a "tie" still exists between two commands, the most recent command wins. In the graphic on page 7-2, at 8am, Pattern 1 and Pattern 2 are both set to be running; but because Pattern 2 was issued after Pattern 1, Pattern 2 wins. To summarize this graphic:

- Signal runs Free from 12am until 4am
- Pattern 1 runs from 4am until 8am
- Pattern 2 runs from 8am until 2pm
- Pattern 1 runs again from 2pm until 5pm
- Pattern 3 runs from 5pm until 11pm
- Signal runs Free from 11pm until 12am

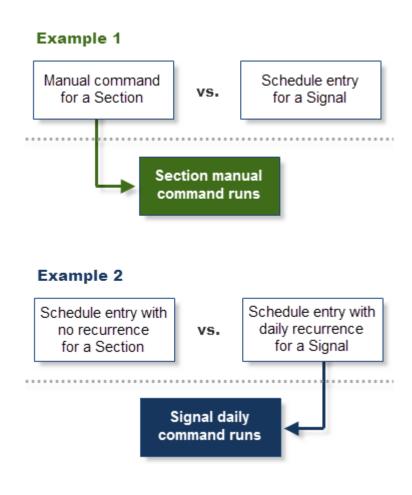
Scheduling Conflicts •

### Examples

As stated earlier, to resolve conflicts, Centracs considers these factors:

- A. Type of command
- B. Type of entity
- C. Entity parent priorities
- D. Type of recurrence
- E. Time of command

The examples below show the outcomes when one command has a higher 'type of command' and the other command has a higher 'type of entity', and when one command has a higher 'type of entity' and the other command has a higher 'type of recurrence':



Issuing Manual Commands

# **Issuing Manual Commands**

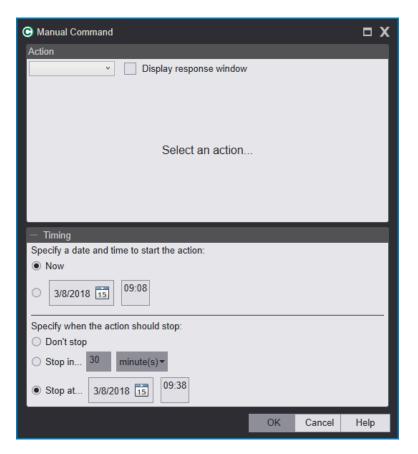
### To add a manual command:

**Note** • To add a manual command for one specific entity, as an alternative to the procedure below, right-click the entity in the Entity Tree or the Map Viewer and select Manual Command... This eliminates a few steps and automatically populates the Entities field for you.

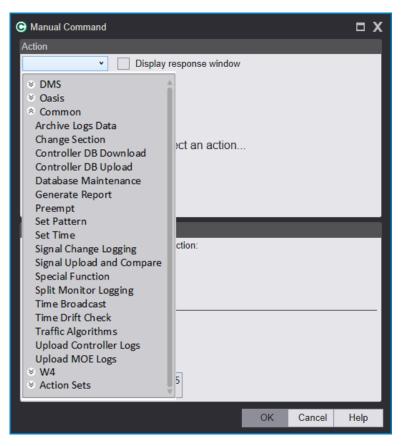
1 From the main menu, select Control ➤ Manual Commands... The Manual Commands window opens, and shows any manual commands that are already defined but have not run yet or are running now.

C Manual Comr	mands				= 🗆 X
Add	Edit Copy	End/D	elete		
Action	Targets	Start	End	Entered By	

2 Click Add... The Manual Command window opens.



- Issuing Manual Commands •
- 3 In the Action dropdown, expand the available lists to find and select the correct command or action set, as shown below. For details about each available action, refer to *Action Types* on page A-1.



If you have DMS entities, Oasis controllers, and W4 controllers configured in the Entity Tree, action groups for DMS, Oasis, and W4 will also be available in the list, in addition to the Common list of actions.

**Note** • There must be at least one action set defined in the system in order to see the Action Sets list. Refer to *Running Action Sets* on page 7-21.

- 4 Complete the parameters for the action you selected. For details about each available action, refer to *Action Types* on page A-1.
- 5 Optionally, enable the "Display response window" checkbox to see status details about the command as it runs. (The type of details shown depends on the Action type.)
- 6 If the Timing section of the window is not already expanded, click the plus/minus sign.
- 7 Specify the date and time of day (in 24-hour HH:MM format) at which the command must run, or select the Now option if the command must run immediately. In the date fields, you can type the date, or you can click the arrow to pull down a calendar and select the date.

- Issuing Manual Commands
  - 8 For some actions, you must also specify when the command must stop:
    - You can select "Don't stop" to run the command indefinitely.
    - You can select "Stop in..." and specify the duration of the command in minutes or hours.
    - You can select "Stop at..." and specify the date and time at which the command will be stopped.
  - **9** To save the command, click **OK**.

The new command is shown in the Manual Commands table. After the command completes, it is automatically removed from the table.

C Manual Comman	ds				- 1	x
Add Edit.	Copy End/Delete					
Action	Targets	Start	End	Entered By		
Set Pattern to 1	Section North Colorado Springs	3/8/2018 14:29:37	No End			

**Note** • When you define a new Set Time or Time Broadcast manual command with a specific start time, the system automatically adds 30 seconds to the start time. The system does this to avoid potentially skipping or duplicating commands that run at the top of the minute.

### To change a manual command:

- 1 From the Manual Commands list, click the command to change, then click Edit...
- 2 On the Manual Command window, make the necessary changes and click **OK**.

Note • After a manual command has been saved, you cannot change the Action field.

### To delete or stop a manual command:

- 1 From the Manual Commands list, click the command to remove or stop, then click **End/Delete**.
- 2 If you are asked to confirm the deletion, click **Yes**. The command is removed from the list of manual commands, and if the command is running, it is stopped immediately.

#### To copy a manual command:

- 1 From the Manual Commands list, click the command to copy, then click Copy...
- 2 On the Manual Command window, make any necessary changes and click **OK**. The copy is saved as a new command in the list.

Using the Scheduler •

# **Using the Scheduler**

**Note** • Before you use the scheduler for the first time, please read *Overview of Scheduling and Manual Commands* on page 7-1.

### To add a new schedule entry:

1 From the main menu, select **Control ▶ Scheduler...** The Scheduler Entries window opens, and shows any schedule entries that have already been added.

C Sched	luler Entries									-	<b>□ X</b>
Add	Edit	Сору	Dele	ete							
Name	Range Start	Range End	Start	End	Recurrence	Action	Enabled	Targets	Priority	Entered By	

2 Click Add. The New Schedule Entry window opens.

C New Schedule Entry	
Entry Name:	Priority Normal O High
v Enabled	Range
Select an action	Start:       3/8/2018 15         End:       3/8/2018 15         Mo end         Repeat every year         Times         Start:       13:35         End:       14:05
Recurrence	
None       Sunday       Monday       Tuesday       Wednesday       Thursday         Daily       Monday       Tuesday       Weekends       Clear All         Monthly       Yearly       Yearly       Yearly	▼ Friday
Exceptions	
1	►

3 Enter a unique name for this schedule entry in the Entry Name field.

- Using the Scheduler
  - 4 In the Action dropdown, expand the available lists to find and select the correct command or action set, as shown below. For details about each available action, refer to *Action Types* on page A-1.

New Schedule Entry		<u>¬</u> x
Entry Name: Generate Daily System	Activity Report	Priority  Normal O High
Action  Generate Report  Archive Logs Data  Change Section  Controller DB Download  Controller DB Upload  Database Maintenance  Generate Report  Preempt  Set Pattern  Set Time  Signal Change Logging  Signal Upload and Compare  Special Function  Split Monitor Logging  Time Broadcast	ed Format: Email Recipient: Save To:	Range         Start:       3/8/2018 15         End:       3/8/2018 15         Repeat every year         Times         Start:       13:35
Upload MOE Logs	n the following days: nday ✔ Tuesday ✔ Wednesday ✔ Thursday [ Weekdays Weekends Clear All	✔ Friday 🗌 Saturday

If you have Oasis controllers, W4 controllers, and DMS entities configured in the Entity Tree, action groups for Oasis, W4, and DMS will also be available in the list, in addition to the Common list of actions.

There must be at least one action set defined in Centracs in order to see the Action Sets list. Refer to *Running Action Sets* on page 7-21.

- 5 Complete the parameters for the action you selected. For details about each available action, refer to *Action Types* on page A-1.
- 6 For this schedule entry to be active immediately, check the Enable checkbox; for the schedule entry to be disabled temporarily, uncheck the Enable checkbox.
- 7 To cause this schedule entry to take precedence over another schedule entry that runs at the same time for the same entity(ies), set the Priority to High; otherwise, leave it set to Normal. For detailed information on how Centracs prioritizes commands and resolves conflicts between competing commands, refer to *Overview of Scheduling and Manual Commands* on page 7-1.
- 8 In the Range box, specify the first and last days on which this schedule entry will run. Optionally, you can check the "No end" checkbox to run the command indefinitely. In the Start and End fields, you can type the date, or you can click the arrow to pull down a calendar and select the date.
- **9** For schedule entries with an End date, you can optionally enable the "Repeat every year" checkbox to cause the command to run during the same date range each year.

- Using the Scheduler •
- **10** In the Times box, specify the time of day at which the command will run, in 24-hour HH:MM format. The command will run at the specified Start time on each day that it occurs.
- 11 If the action you specified for your schedule entry is an action with duration (for example, Set Pattern), specify the time at which the command must be stopped, in 24-hour HH:MM format. For example, you can set a pattern for only specific hours each day.

If you enter an End time that is less than the Start time, Centracs shows the message "On Next Day" to the right of the End time to indicate that the command will start on one day and stop on another day:

Times	
Start: 13:35	
End: 00:30	On Next Day

For actions without duration (such as Set Time), the End time field is hidden from view.

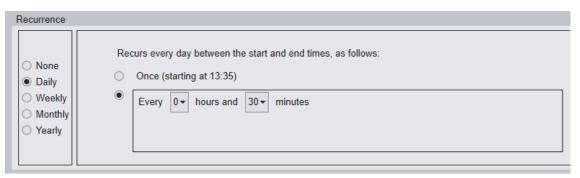
**12** In the Recurrence box, specify how frequently the command will run. There are five recurrence options:

#### None

The command will run one time only, and then be removed from the schedule. This option is essentially the same as a manual command.

#### Daily

The command will run one or more times per day, for each day in the specified date range.



There are two Daily options:

- **Once** The command will run one time per day for each day in the specified date range.
- Every xx hours... The command will repeat throughout the day at a specified interval. For example, you can configure the action to run each hour on the hour. If the action you specified for your schedule entry is an action with duration (for

#### Using the Scheduler

example, Set Pattern), you must also specify how long the command will run each time, in hours and minutes. For actions without duration (such as Set Time), the "with each occurrence lasting" fields are hidden from view.

#### Weekly

The command will run one or more times a week.

O None	Recurs every week on the following days: Sunday V Monday V Tuesday V Wednesday V Thursday V Friday Saturday
<ul><li>Daily</li><li>Weekly</li></ul>	All Days     Weekdays     Weekends     Clear All
O Monthly	
O Yearly	

For each week in the specified date range, the command will run one time per day on the specified days of the week. To quickly select or deselect groups of days, you can use the **All Days**, **Weekdays**, **Weekends**, and **Clear All** options.

#### Monthly

For each month in the specified date range, the command will run one time per day on the specified day(s) of the month.

	Recurs every month on the following day(s):							
<ul> <li>None</li> <li>Daily</li> <li>Weekly</li> <li>Monthly</li> <li>Yearly</li> </ul>	≤    ast▼  Wednesday▼							
	Remove All Remove							

Use the dropdown lists to select one day or to make a list of days. Use the first dropdown to select specific days of the month by number (such as the 1st of the month); use the second and third dropdowns to select a specific weekday in a specific week (such as the fourth Friday of each month). Click s to move each selected day to the "Recurs every month" list; you can also click **Remove** to remove a day from the list, or **Remove All** to start over. You can use one or both of these methods to specify multiple days. The days are shown in the order in which you add them.

Using the Scheduler •

### Yearly

For each year in the specified date range, the command will run one time per day on the specified day(s) of the year.

	Recurs on	[None]	
<ul><li>None</li><li>Daily</li></ul>		January 12 Last Monday in January for 1 day(s)	< January • 12 • if S M T W T F S
O Weekly			< Last   Monday  in January  for 2  day(s)
<ul> <li>Monthly</li> </ul>			
Yearly			
		Remove All Remove	

There are two ways to select days (each is notated on the sample window above):

- Day of year Use the two dropdowns to specify the month and the day number (such as January 1st). If the command must run on this day *only* if it occurs on specific days of the week, check the appropriate day checkbox(es) (Sunday, Monday, Tuesday, Wednesday, Thursday, Friday, Saturday).
- **Day of month** Use the first three dropdowns to specify the week, day, and month (for example, the last Monday in May). If the command must run on multiple consecutive days, you can specify this in the last dropdown.

Click < to move each selected day to the list; you can also click **Remove** to remove a day from the list, or **Remove All** to start over. You can use one or both of these methods to specify multiple days. The days are shown in the order in which you add them.

You can also include a previously defined day or set of days from the "Recurs on" dropdown list. These sets of days are defined on the Holiday/Special Days Editor (page 7-18).

**13** To enter any exceptions to this schedule entry, such as holidays or vacation days, expand the "Exceptions" section of the window (as shown below).

Except on	New Year's Day	·
and	January 1 if -MTWTF-	< January • 1 • if S M T W T F S
		< First   Tuesday  in January  for 1  day(s)
		< 15
	Remove All Remove	]

14 Specify any days or dates on which the command must not run. You can select a previously defined day or set of days from the "Except on" dropdown list. These sets of days are defined on the Holiday/Special Days Editor (page 7-18).

• Using the Scheduler

You can also use one or more of the methods below to select days (each is notated on the sample window above):

- Day of year Use the dropdowns to specify the month and day number of a fixed exception day that occurs on the same date each year (for example, New Year's Day is always January 1st). If this day must be considered an exception day *only* if it occurs on specific days of the week, check the appropriate day checkbox(es) (Sunday, Monday, Tuesday, Wednesday, Thursday, Friday, Saturday).
- Day of month Use the dropdowns to specify the week, day, and month of a floating exception day whose date changes from year to year (for example, Thanksgiving is always the third Thursday in November). If the exception includes multiple consecutive days, you can specify this in the Days dropdown.
- **Date** Use the pull-down calendar (or type over the current date) to specify the date of a one-time exception day, such as a major sporting event.

Click sto move the day you specified to the list.

You can use any combination of these methods to specify multiple exception days. The days are shown in the order in which you add them, not in date order.

To remove one or more days that you added to the list, click the day and click **Remove**, or click **Remove All** to start over.

**15** To save your settings, click **OK**. Your new entry is now shown in the Scheduler Entries table.

**Note** • When you define a new Set Time or Time Broadcast command with a specific start time, the system automatically adds 30 seconds to the start time. The system does this to avoid potentially skipping or duplicating commands that run at the top of the minute.

Using the Scheduler •

### To change a schedule entry:

- 1 From the main menu, select **Control ▶ Scheduler...**
- 2 From the Scheduler Entries list, click the command to change, then click Edit...
- 3 On the New Schedule Entry window, make the necessary changes and click OK.

### To delete or stop a schedule entry:

- 1 From the main menu, select **Control ▶ Scheduler...**
- 2 From the Scheduler Entries list, click a command, then click **Delete**.
- **3** If you are asked to confirm the deletion, click **Yes**. The command is removed from the schedule, and if the command is running, it is stopped immediately.

### To copy a schedule entry:

- 1 From the main menu, select **Control ▶ Scheduler...**
- 2 From the Scheduler Entries list, click the command to copy, then click **Copy...**
- **3** On the New Schedule Entry window, make any necessary changes and click **OK**. The copy is saved as a new entry in the schedule.

### To disable or enable a schedule entry:

- 1 From the main menu, select **Control ▶ Scheduler...**
- 2 From the Scheduler Entries list, in the Enabled column, click the checkbox for the appropriate schedule entry to toggle the setting:
  - checked = the schedule entry is active and will run as scheduled
  - unchecked = the schedule entry is disabled and will not run

Specifying Holidays and Special Days

# **Specifying Holidays and Special Days**

Use the Holiday/Special Days Editor to specify:

- Any exceptions to the normal schedule, such as federal holidays and major local events. These days can then be selected as exceptions when you add a new schedule entry (page 7-11).
- Any day or set of days to use as the basis for a new schedule entry that occurs yearly.

### To add a new holiday or special day:

1 From the main menu, select **Control ▶ Holiday/Special Days...** The Holiday/Special Days Editor window opens.

Holiday/Special Days Editor				
Holiday/Special Days:				
New Year's Day Christmas Day	View/Edit: Ho	liday/Special Day Definition		
Thanksgiving	Description:	New Years Day		
	Days: January 1		< January ▼ 1 ▼	S M T W T F S
			< Third Thursday	▼ in November ▼ for 2 ▼ Days
			< 01/08/2012 □ ▼	
New Delete		Remove All Remove		Save Cancel
				Close

The left side of the window shows the days that have already been defined in the system.

2 Click New... An empty record is shown.

- Holiday/Special Days Editor		
Holiday/Special Days:		
New Year's Day Christmas Day Thanksgiving New Delete	Date 01/08/2012 - Remove All Remove Save Ca	Days

**3** On the right side of the window, enter a unique name for the day (or group of days), and optionally, a description. The name you assign here will be shown in the

Specifying Holidays and Special Days •

Exceptions dropdown and the Recurs On dropdown (for Yearly recurrences) when you add a schedule entry.

- 4 Use the Days field to select one or more days. There are three ways to populate the Days list (each is notated on the sample window above):
  - Day of year Use the dropdowns to specify the month and day number of a fixed special day that occurs on the same date each year (for example, New Year's Day is always January 1st). If this day must be considered a special day *only* if it occurs on specific days of the week, check the appropriate day checkbox(es) (Sunday, Monday, Tuesday, Wednesday, Thursday, Friday, Saturday).
  - Day of month Use the dropdowns to specify the week, day, and month of a floating special day whose date changes from year to year (for example, Thanksgiving is always the third Thursday in November). If this is a multi-day holiday, you can specify this in the Days dropdown.
  - **Date** Use the pull-down calendar (or type over the current date) to specify the date of a one-time special day, such as a major sporting event.

Click to move the day you specified to the Days list.

You can use any combination of these methods to specify multiple special days. The days are shown in the order in which you add them, not in date order. In the example below, all federal holidays are specified in one set. This is useful in the scheduler to select all special days at one time.

To remove one or more days that you added to the Days list, click the day and click **Remove**, or click **Remove All** to start over.

Holiday/Special Days Editor				
Holiday/Special Days:	View/Edit: Ho	liday/Special Day Definition		
Christmas Day Thanksgiving Football Game - October New Year's Eve	Name: Description:	All Holidays All federal holidays		
All Holidays	Third Monda Last Monday July 3 if July 4 July 5 if -M First Monday Second Mor	y in September for 1 day(s) hday in October for 1 day(s) day in November for 2 day(s) 44 ifF- 55 16 if -M -M	< January • 1 • < First • Sunday < 10/06/2012 •	SMTWTFS if
New Delete		Remove All Remove		Save Cancel

5 Click Save.

Specifying Holidays and Special Days

### Example - Thanksgiving

Holiday/Special Days Editor				
Holiday/Special Days: New Year's Day Christmas Day Thanksgiving Football Game - October New Year's Eve All Holidays	Name: Description: Days:	iday/Special Day Definition Thanksgiving Thanksgiving holiday - Thursda lay in November for 2 day(s)	c January ▼ 1 ▼ c First ▼ Sunday	SMTWTFS if COLOR in January V for 1 V Days
New Delete		Remove All Remove		Save Cancel Close

### Example - Major Sporting Event

Holiday/Special Days Editor				
Holiday/Special Days:				
New Year's Day	View/Edit: Ho	liday/Special Day Definition		
Christmas Day Thanksgiving	Name:	Football Game - October		
Football Game - October New Year's Eve	Description:	Red River Rivalry		
All Holidays	Days:			
	10/06/2012		< January • 1 •	S M T W T F S
			< First  Sunday	✓ in January ✓ for 1 ✓ Days
			< 10/06/2012 □ ▼	
New Delete		Remove All Remove		Save Cancel
				Close

### Example - New Year's Eve

Holiday/Special Days Editor					
Holiday/Special Days:					
New Year's Day Christmas Day	View/Edit: Ho	liday/Special Day Definition			_
Thanksgiving Football Game - October	Name:	New Year's Eve			
New Year's Eve All Holidays	Description: Days:	For years when New Year's	Day falls on a Saturday		
	January 31 i	fF-	< January • 1 •	SMTWTFS	
			< First   Sunday	▼ in January ▼ for 1 ▼	Days
			< 10/06/2012 □ ▼		
New Delete		Remove All Remove		Save	cel
				C	lose

Running Action Sets

### **Running Action Sets**

Manual commands and schedule entries usually contain one action, but they can also run compound actions, known in Centracs as "action sets".

An action set is a series of user-configurable actions that can all be kicked off at the same time (or sequentially) by one command. For example, to generate the System Activity report, the User Login report, and the Alerts Log each night at midnight, you can add an action set that contains these three actions. This eliminates the need to add multiple commands, and as a result, you can work more efficiently.

After an action set has been added, you can choose it by name as the action in a manual command (page 7-8) or schedule entry (page 7-11).

### To add an action set:

1 From the main menu, select **Configuration ► Action Sets...** The Action Sets window opens.

X Delete		
Description	Actions	
Run daily reports and email PDFs to supervisor	3	
	Description	Description Actions

2 Click Add. The Action Set Editor window opens.

Action Set	Editor		
Name	New		
Description			
<ul> <li>Timed</li> </ul>	ion set is run, all actions are executed		of the action set. This mode can be used for route preemption, for example.
Name	Description	Entities	
			OK Cancel

**3** Enter a unique name for the action set, and optionally, a description. The name you assign to the action set will be shown in the Action dropdown when you add a manual command or schedule entry.

- Running Action Sets
  - 4 Click Add. The Action Set Edit Action window opens.

Action	— Actio	n Set - Edit Action	
Archive Logs Data CCTV Preset CCTV Tour Change Section Database Maintenance Deny Externally Requested Actions Generate Report Preempt Restore Logs Data Set Pattern Set Time Signal Change Logging Signal Upload and Compare Special Function Split Monitor Logging Time Broadcast Time Drift Check Traffic Algorithm Upload Controller Logs	Action	S Alerts	
W4 OK Cancel		Archive Logs Data CCTV Preset CCTV Tour Change Section Database Maintenance Deny Externally Requested Actions Generate Report Preempt Restore Logs Data Set Pattern Set Time Signal Change Logging Signal Upload and Compare Special Function Split Monitor Logging Time Broadcast Time Drift Check Traffic Algorithm Upload Controller Logs Upload MOE Logs	

**Note** • The DMS, Oasis, and W4 action groups are shown only if you have DMS entities, Oasis controllers, and W4 controllers configured in the system.

- 5 In the Action dropdown list, expand the available lists of actions and select the action to add to the action set. For details about each available action, refer to *Action Types* on page A-1.
- 6 Complete the parameters for the action you selected, then click **OK**. For details about each available action, refer to *Action Types* on page A-1.
- 7 To configure all the actions for the action set, repeat steps 4 through 6.

Action Set I	Editor			
Name	Check Controllers			
Description	Compare time & se	ettings on controllers with C	entracs server	
O Timed	on set is run, all actions	are executed at the same time. t times offset relative to the start o	f the action set. This mode can be used for	route preemption, for example.
+ Add	Edit 🗙 De	lete		
Name		Description		Entities
Time Drift Ch	neck	Check if device clock is a	Irifting.	🛃 Colorado Springs
Signal Uploa	d and Compare	Upload controller datab	ase and compare to local copy.	Colorado Springs
Generate Rep	port	Schedule a report to be	generated.	
				OK Cancel

- Running Action Sets •
- 8 To cause all actions to run at the same time, leave the "Simultaneous" radio button on and go to the next step.

### Or

To cause the actions to run in a specific order, turn on the "Timed" radio button. Three more columns are added to the window:

Action Set	Editor	_	_	_	_	
Name Check Controllers						
Description Compare time & settings on controllers with Centracs server						
<ul> <li>Simultaneous         When the action set is run, all actions are executed at the same time.</li> <li>Timed         Actions in the action set are run at set times offset relative to the start of the action set. This mode can be used for route preemption, for example.</li> </ul>					d for route preemption, for example.	
Add Edit X Delete						
Name		Description	Entities	Offset (sec)	Duration (sec)	Check Time - preempt only (sec)
Time Drift C	heck	Check if device clock is	🛃 Colora	0	1	0
Signal Uploa	ad and Com	Upload controller datat	<u> K</u> Colora	0	1	0
Generate Re	port	Schedule a report to be		0	1	0
						OK Cancel

Click in the Offset and Duration boxes and enter values for each action. Duration specifies how long the action will run; Offset specifies how long after the start of the action set the individual action will start.

9 Click OK. A list of all the action sets is shown.

	<ul> <li>Action Sets</li> </ul>			
I	+ Add Edit	× Delete		
I	Name	Description	Actions	
	Check Controllers	Compare time & settings on controllers with Centracs server	3	
	Run Daily Reports	Run daily reports and email PDFs to supervisor	3	
I				
				-

The newly added action set is now eligible to be run by the scheduler or a manual command.

Running Action Sets

### To change an action set:

1 From the main menu, select **Configuration ►** Action Sets... The Action Sets window opens.

- Action Sets			
Add Edit	X Delete		
Name	Description	Actions	
Check Controllers	Compare time & settings on controllers with Centracs server	3	
Run Daily Reports	Run daily reports and email PDFs to supervisor	3	
		_	

2 click the action set to change, then click **Edit**. The Action Set Editor window opens.

Action Set	Editor			
Name	Check Controllers			
Description	Compare time & s	ettings on controllers with C	entracs server	
O Timed	tion set is run, all actions	are executed at the same time. t times offset relative to the start o	f the action set. This mode can be used for I	route preemption, for example.
+ Add	Edit 🗙 De	elete		
Name		Description		Entities
Time Drift C	heck	Check if device clock is o	Irifting.	🛃 Colorado Springs
Signal Uploa	ad and Compare	Upload controller databa	ase and compare to local copy.	Colorado Springs
Generate Re	port	Schedule a report to be	generated.	
				OK Cancel

- 3 Make the necessary changes to the action set:
  - You can change the name and/or description on this window.
  - To include more actions in the action set, click **Add**, add the action(s), and click **OK**.
  - To change an action associated with the action set, click the action, click **Edit**, make your changes, and click **OK**.
  - To delete an action from the action set, click the action, then click **Delete**.
- 4 To save all changes, click **OK**.

Running Action Sets •

### To delete an action set:

1 From the main menu, select **Configuration ► Action Sets...** The Action Sets window opens.

Action Sets			
Add Edit	X Delete		
Name	Description	Actions	
Check Controllers	Compare time & settings on controllers with Centracs server	3	
Run Daily Reports	Run daily reports and email PDFs to supervisor	3	

- 2 click the action set to remove and click **Delete**.
- 3 If you are asked to confirm the deletion, click **Yes**.

**Note** • If any schedule entries or manual commands contain the action set to be deleted, you are given a warning that if you continue, the associated schedule entries and/or manual commands will also be deleted. If necessary, you can cancel the deletion at this point.

User Selection / Recipient and Role Selection

# **User Selection / Recipient and Role Selection**

When you define a "CCTV Preset", "CCTV Tour", or "Generate Report" action (in a manual command, schedule entry, trigger, or action set), you use either the User Selection or Recipient and Role Selection window to specify the users for whom the CCTV preset or tour will be shown, to whom the report will be emailed, etc. Depending on the type of action, Centracs decides which of these two windows to use. The only differences are:

- The User Selection window lists all users defined on the User Configuration window (page 20-24).
- The Recipient and Role Selection window lists all recipients defined on the Recipient window (page 20-73), plus all roles defined on the User Roles window (page 20-23), plus all user groups defined on the User Groups window (page 20-30). If you select a role or user group, all users who are assigned to that role or group will be associated with this action (i.e., the preset, report, etc. that you are defining). User groups are shown at the top of the Available list, roles are shown next, and recipients are shown at the bottom.

### To select one or more users/recipients/roles:

1 On the User Selection or Recipient and Role Selection window:

User Selection		$\square$ $\boxtimes$	
Selected	Available Bill Lumbergh Forrest Lawrencetor George Michael Blut Gob Bluth Michael Bolton Mr Manfredjensenjel Recipient and Role Selec	n	
	Selected User Groups User Roles	Available Tech Group 1 Tech Group 2 Administrator Technician Bill Lumbergh Forrest Lawrenceton George Michael Bluth Gob Bluth Michael Bolton Mr Manfredjensenjen Peggy Hill Phil Dunphy Randall 'Pink' Floyd Sue Sylvester Trudy Wiegel	
		ОКС	ancel

select one or more users/recipients/roles in the "Available" side of the window. To select multiple items at a time, hold the **Ctrl** or **Shift** key while you select them, or to select all, press **Ctrl-A**.

2 After you have made your selections, click do move them to the "Selected" side of the window, and click **OK**.

# **Using CCTV Displays**

**Note** • For information about Autoscope cameras used as vehicle detectors, refer to *Using DCMS for Data Collection* on page 17-1.

### **Overview of CCTV**

CCTV (Closed-Circuit TeleVision) is a video camera monitoring system that broadcasts a signal to one or more specific monitors (as opposed to a public broadcast). You can use the CCTV features in Centracs to see intersections and field devices via live video streams. You can show more than one video display at the same time, and you can dock them in containers like any other Centracs window. When configured, each camera is shown as an icon on the Map Viewer and in the Entity Tree for easy on-demand access. Specific camera views (called "presets") can be configured to automatically launch if a specific event occurs. You can also launch presets by manual commands and schedule entries.

In addition to manual, real-time control of cameras in Centracs, you have the option to digitally archive video streams to permanent storage on a disk drive via the Genetec Omnicast user interface. This feature is flexible:

- you can schedule archiving during specific times of the day
- movement in the video frame can activate it
- an alarm input can activate it

Centracs supports *Autoscope* cameras as well as cameras from vendors such as Axis, Cohu, ACTi, VCS, and Pelco. If supported by the camera type, Centracs includes PTZ (pan, tilt, and zoom) capabilities to control the camera position.

CCTV Setup

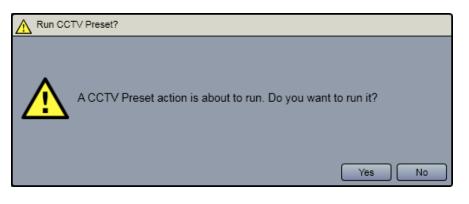
### CCTV Setup

Before you can use the CCTV features, these configuration steps must be completed:

Task	Description
1 Initial setup	The system administrator must install the redistributables/ runtimes for your camera type on the client machine (e.g., Axis runtimes for Axis cameras, Cohu runtimes for Cohu cameras, Genetec runtimes for Advanced CCTV, VLC Media Player for Generic or Autoscope Terra, etc.).
	For Advanced CCTV, the system administrator must also set up communications to the Genetec server. Refer to <b>Configuring the Advanced CCTV Feature on page 20-64</b> .
2 Add CCTVs to the Entity Tree	This supplies details to Centracs about the individual camera devices. Optionally, you can also specify locations for the devices on the map, and configure how Centracs shows them on the map. Refer to <i>Entity Configuration - CCTVs</i> on page 3-65 and <i>Editing the Map View</i> on page 5-18.
3 Define preset camera views	Optional. This is necessary in order to use the preset features. Refer to <i>Defining and Maintaining Presets</i> on page 8-6.
4 Define camera tours	Optional. This is necessary in order to use the tours features. Refer to <i>Using CCTV Tours</i> on page 8-13.

### Automatically Launched Presets

You can configure CCTV presets to launch automatically as the result of a trigger, a schedule entry, or a manual command. When a preset is about to launch automatically, the prompt shown below opens. To show the preset, click **Yes**, or to cancel it, click **No**.



**Note** • Presets launched automatically are view-only — you cannot pan, zoom, or tilt them, or change to a different preset.

Showing a Live Camera Feed 🔹

# **Showing a Live Camera Feed**

### From the Entity Tree

Double-click a CCTV entity in the tree.

A real-time video display from that camera is shown in a new window.

For instructions on how to set up CCTV entities in the tree, refer to *Entity Configuration - CCTVs* on page 3-65.

### From the Map Viewer

There are two ways to launch a video display from the Map Viewer — the first opens a view-only window, and the second opens a window that you can pan, zoom, resize, etc.

• Hold your mouse pointer over the CCTV icon on the map (shown below).



A real-time video display from that camera is shown in a new window. This display is view-only.

### Or

• Double-click the CCTV icon on the map.

A real-time video display from that camera is shown in a new window. You can pan, tilt, zoom, and resize this display (page 8-4), you can set presets (page 8-6), you can launch presets (page 8-10), and you can configure and launch tours (page 8-13).

For details on how to add CCTV icons to the map, refer to *Editing the Map View* on page 5-18.

**Note** • To change the size of the video display, use the CctvTooltipWidthPx and CctvTooltipHeightPx Local/Global Settings. For more information, refer to *Viewing and Editing Global and Local Settings* on page 20-61.

Moving a Camera View

# **Moving a Camera View**

With the video displays in Centracs, you can pan the camera left and right, tilt it up and down, and zoom in and out.

**Note** • These procedures cannot be used for CCTV entities that have a Source Type of Generic or Autoscope Terra. Refer to *Entity Configuration - CCTVs* on page 3-65.

### To zoom the video display in or out:

- 1 Launch the video display from the Entity Tree or the Map Viewer. Refer to *Showing a Live Camera Feed* on page 8-3.
- 2 Roll your mouse wheel forward to zoom in, or backwards to zoom out.

#### To tilt the camera up or down, or pan the camera sideways:

- Launch the video display from the Entity Tree or the Map Viewer. Refer to Showing a Live Camera Feed on page 8-3.
- 2 click the display in the direction you want to move the camera in relation to the center-point of the display and hold until the correct position is reached. For example, to move the camera down, click directly below the center-point and hold.

The distance between the mouse pointer and the center-point determines how fast the camera moves. If you click close to the center-point, the camera moves slowly; if you click close to the edge of the display, the camera moves quickly. The examples below demonstrate this.



#### To save a snapshot of the camera view:

**Note** • This procedure cannot be used for CCTV entities that have a Source Type of Generic, Autoscope Terra, or Axis. Refer to *Entity Configuration - CCTVs* on page 3-65.

- 1 Launch the video display from the Entity Tree or the Map Viewer. Refer to *Showing a Live Camera Feed* on page 8-3.
- 2 Pan, tilt, and/or zoom the video display as necessary.
- 3 Right-click the display and select **Snapshot**. A "Save As" window opens.
- 4 Specify a filename and location for the saved snapshot, then click **Save**.

Moving a Camera View •

A snapshot of the camera view is saved to a file in JPEG format. You can open this file in most third-party graphics applications.

• Defining and Maintaining Presets

# **Defining and Maintaining Presets**

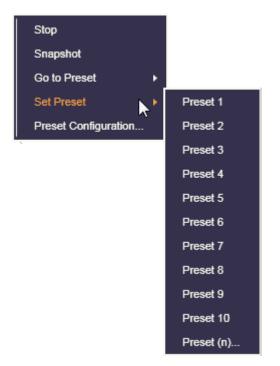
For some camera types (such as Axis), preset views are defined on the Genetec server; for ACTi, Cohu, and Advanced CCTV, presets are defined in Centracs. Saved presets are available to all users.

**Note** • These procedures cannot be used for CCTV entities that have a Source Type of Generic, Autoscope Terra, or Axis. Refer to *Entity Configuration - CCTVs* on page 3-65.

#### To define presets 1 through 10:

- Launch the video display from the Entity Tree or the Map Viewer. Refer to Showing a Live Camera Feed on page 8-3.
- 2 Pan, tilt, and/or zoom the video display as necessary. Refer to *Moving a Camera View* on page 8-4.
- 3 Right-click the display and select Set Preset.

The sub-menu below is shown.



4 Select the preset number to assign to this view.

**IMPORTANT** • If the preset number you choose is already assigned to a different view, the prior view is replaced with the new view, without warning from the system.

The new preset is now available for use in manual commands, schedule entries, action sets, and triggers.

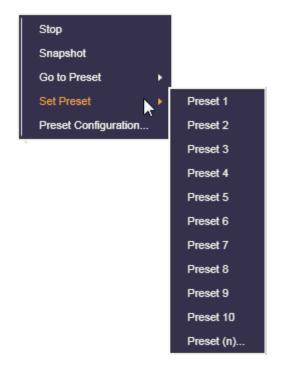
Defining and Maintaining Presets •

**Note** • To change a preset view, simply define it again. When you save it with the same preset name, the old view is replaced with the new view.

### To define more presets (after the first ten):

- 1 Pan, tilt, and/or zoom the video display as necessary. Refer to *Moving a Camera View* on page 8-4.
- 2 Right-click the display and select Set Preset.

The sub-menu below is shown.



**3** Select the **Preset (n)...** option. The Preset Selection window opens.

[	Preset Selection	
	Presets	
	Preset 1	
	Preset 2	
	Preset 3	
	Preset 4	
	Preset 5	
	Preset 6	
	Preset 7	
	Preset 8	
	Preset 9	
	Preset 10	
		ose

- Defining and Maintaining Presets
  - 4 For ACTi and Cohu cameras, if you click the last line and then click **OK**, a new preset is added with the next available number (in this case, Preset 11). Alternatively, you can double-click the last line and type a unique name for the new preset, then click **OK**.

For Advanced CCTV, the list shows 256 possible presets. Select the preset number to assign to this view.

The new preset is now available for use in manual commands, schedule entries, action sets, and triggers.

### To rename a preset (ACTi and Cohu only):

- 1 Launch the video display from the Entity Tree or the Map Viewer. Refer to *Showing a Live Camera Feed* on page 8-3.
- 2 Right-click the display and select **Preset Configuration...** The Preset Selection window opens.

Preset Selection	
Presets	
Preset 1	
Preset 2	
Preset 3	
Preset 4	
Preset 5	
Preset 6	
Preset 7	
Preset 8	
Preset 9	
Preset 10	
	Delete Close

- **3** Double-click the preset to rename, and enter the new name.
- 4 Click Close.

The new name is now reflected when you add manual commands, schedule entries, action sets, and triggers.

Defining and Maintaining Presets •

### To delete a preset (ACTi and Cohu only):

- 1 Launch the video display from the Entity Tree or the Map Viewer. Refer to *Showing a Live Camera Feed* on page 8-3.
- 2 Right-click the display and select **Preset Configuration...** The Preset Selection window opens.

Preset Selection	
Presets	
Preset 1	
Preset 2	
Preset 3	
Preset 4	
Preset 5	
Preset 6	
Preset 7	
Preset 8	
Preset 9	
Preset 10	
Delet	e Close

- 3 click the preset to remove and click **Delete**.
- 4 Click OK.

Viewing Camera Presets

# **Viewing Camera Presets**

**Note** • This procedure cannot be used for CCTV entities that have a Source Type of Generic, Autoscope Terra, or Axis. Refer to *Entity Configuration - CCTVs* on page 3-65.

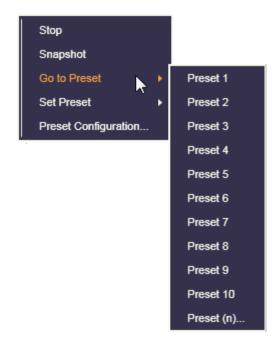
Use the procedure below to recall a preset from an open video display.

**Note** • A preset can also be launched automatically by a trigger, a schedule entry, or a manual command. For more information, refer to *Using Triggers* on page 4-25 and *Overview of Scheduling and Manual Commands* on page 7-1.

#### To see a CCTV preset:

- Launch a CCTV video display from the Entity Tree or the Map Viewer. Refer to Showing a Live Camera Feed on page 8-3.
- 2 Right-click the display and select **Go to Preset**.

A sub-menu shows a list of presets 1 through 10 (whether they have been defined or not).



Viewing Camera Presets •

- **3** Do one of these steps to select a preset:
  - click a preset from the list.

Or

• Select **Preset (n)...** to open the Preset Selection list:

Preset Selection	
Presets	
1-North	
2-South	
3-East	
4-West	
5-Northeast	
6-Northwest	
7-Southeast	
8-Southwest	
	OK Close

click a preset and click **OK**.

The camera pans, tilts, and/or zooms to the defined preset you chose.

CCTV Preset Selection

### **CCTV Preset Selection**

When you define a "CCTV Preset" action in a manual command, schedule entry, trigger, or action set, use this window to select the camera preset to show.

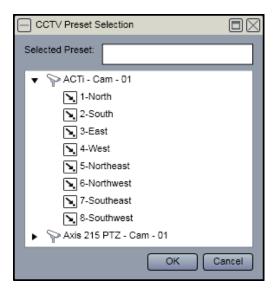
#### To select a camera preset:

When you click to the right of the Selected Preset field (from one of these windows: Manual Command, New Schedule Entry, Trigger Editor, or Action Set - Edit Action), the CCTV Preset Selection window opens.

CCTV Preset Selection	$\boxtimes$
Selected Preset:	
<ul> <li>ACTi - Cam - 01</li> <li>Axis 215 PTZ - Cam - 01</li> </ul>	
OK Cance	÷

This window shows all the cameras that are defined in the Genetec server.

2 Expand the list for the appropriate camera.



**3** Select one of the defined presets and click **OK**.

### **Using CCTV Tours**

A CCTV tour is a sequence of CCTV preset views shown in a specified order.

**Note** • Your camera type must be able to support tours in order to use this feature. For example, if your CCTV entity has a Source Type of Generic, Autoscope Terra, ACTi, or Axis, you cannot configure tours. Refer to *Entity Configuration - CCTVs* on page 3-65.

### To add a single-camera tour:

**Note** • Although you can run multi-camera tours in Centracs, they must first be defined in the Genetec software. You can define only single-camera tours in Centracs.

- 1 Launch the video display for the camera from the Entity Tree or the Map Viewer. Refer to *Showing a Live Camera Feed* on page 8-3.
- 2 If you have not already done so, add the preset views to include in the tour. Refer to *Defining and Maintaining Presets* on page 8-6.
- **3** Right-click in the camera view window and select **Tour Configuration...** The Edit System Tours window opens.

Edit System Tours	
Tours	Looping
Tour A	True
Tour B	True
Tour C	True
Add Edit	Delete

- 4 Click Add. A new row is added.
- 5 Optionally, click or double-click the tour name and type a new name.
- 6 In the Looping column, specify whether the tour will repeat automatically (True or False).
- 7 Click Edit. The System Tour Stops window opens.

#### Using CCTV Displays

Using CCTV Tours

Edit System Tours			]
Tours		Looping	
Tour A		True	
Tour B		True	
Tour C		True	
Tour D		True	
	- System Tou	ur Stops	
	Preset		Time
Add			
			Add Delete

8 Click Add.

A new row is added.

Edit System Tours				
Tours		Looping		
Tour A	۲	True		
Tour B	1	True		
Tour C		True		
Tour D	١	True		
	— System Tour Sto	ps		
	Preset			Time
	1			5
Ado				
			Add	Delete

- **9** Enter the number of the first preset to be shown during this tour. The value must be numeric.
- **10** Enter the number of seconds this preset will be shown.

- Using CCTV Tours •
- **11** To configure all the presets to be included in this tour, repeat steps 8 through 10. Make sure that they are in the correct order.

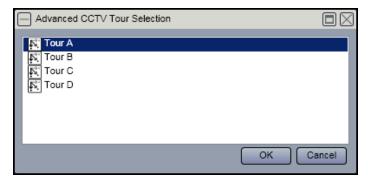
6	System Tour Stops	
	Preset	Time
	1	3
	2	3
	3	3
	4	3
	5	3
	6	3
	7	3
	8	3
	9	3
		Delete

- 12 To close the System Tour Stops window, click  $\boxtimes$ .
- **13** To close the Edit System Tours window, click  $\boxtimes$ .

Using CCTV Tours

#### To run a tour:

From the main menu, select View ► CCTV Tours... The Advanced CCTV Tour Selection window opens.



Highlight the tour to run, then click **OK**. The tour launches in a new window. (To stop the tour, close the tour window.)

### Or

Launch the video display for the camera from the Entity Tree or the Map Viewer. Refer to Showing a Live Camera Feed on page 8-3.

Right-click in the camera view window and select **Run Tour**. The Run System Tours window opens.

Run System Tours		
	Tours	
	Tour A	
	Tour B	
	Tour C	
	Tour D	
		ок

Highlight the tour to run, then click **OK**. The tour launches in a new window. (To stop the tour, close the tour window.)

### To launch a tour automatically for specific users:

- 1 Define a manual command, schedule entry, or trigger and choose CCTV Tour as the Action. (CCTV tours can also be part of an action set.)
- 2 Highlight the tour to run.
- 3 Click I to the right of the Selected Users box and specify one or more users to show the tour for.

When the manual command, schedule entry, or trigger runs, the tour will automatically be shown for the selected users (if they are logged in).

#### To change a tour:

- 1 Launch the video display for the camera from the Entity Tree or the Map Viewer. Refer to *Showing a Live Camera Feed* on page 8-3.
- 2 Right-click in the camera view window and select **Tour Configuration...** The Edit System Tours window opens.

Edit System Tours	
Tours	Looping
Tour A	True
Tour B	True
Tour C	True
Add Edit	Delete

- **3** Optionally, change the name and/or loop setting.
- 4 To change the presets, highlight the tour and click **Edit**. The System Tour Stops window opens.
- **5** Change, add, reorder, or delete the presets.
- 6 To close the System Tour Stops window, click  $\boxtimes$ .
- 7 To close the Edit System Tours window, click  $\boxtimes$ .

Using CCTV Tours

#### To delete a tour:

- 1 Launch the video display for the camera from the Entity Tree or the Map Viewer. Refer to *Showing a Live Camera Feed* on page 8-3.
- 2 Right-click in the camera view window and select **Tour Configuration...** The Edit System Tours window opens.

[	Edit System Tours		]
	Tours	Looping	
	Tour A	True	
	Tour B	True	
	Tour C	True	
	Add Edit	Delete	

- **3** Highlight the tour to remove and click **Delete**.
- 4 To close the Edit System Tours window, click  $\boxtimes$ .

9

# Using Dynamic Message Signs (DMS)

# **Overview of Dynamic Message Signs (DMS)**

You can use Centracs to monitor your dynamic message signs (DMS) and to send new messages to the signs.

You define DMS devices in the Entity Tree like any other entity type. The actual messages can be uploaded to Centracs from the sign, configured in Centracs and downloaded to the sign, or a combination of the two.

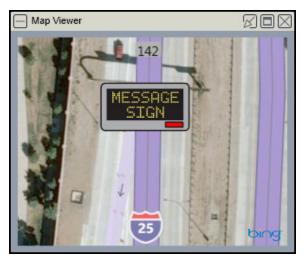
Each defined DMS has a status display that shows the current message on the sign, the state of communications between Centracs and the sign, the state of the beacons (on or off), the current control mode of the sign (remote or local), and any errors being reported by the DMS (such as climate control errors and message syntax errors):



• Overview of Dynamic Message Signs (DMS)

The status display includes options for you to change the message on the sign.

You can also use the Map Viewer to keep an eye on your DMS devices. Each DMS is shown as an icon on the map. Because the icons are color-coded, you can quickly get information about the status of the DMS with just a glance at the map. For example, in the graphic shown below, the red status indicator tells you that the sign is reporting one or more errors:



When the errors are resolved, the status indicator turns yellow:



For more details about map icons, including the meaning of each color, refer to *Viewing Entities and Elements on the Map* on page 5-8 and *Editing the Map View* on page 5-18.

Overview of Dynamic Message Signs (DMS) •



If you hold your mouse pointer over the DMS icon on the map, Centracs shows a miniature representation of the current message shown on the sign:

In this example, the beacons are off.

These commands can be used to send a message to a sign:

- Activate Message sends a command to a single sign to show a particular message from one of the message libraries.
- Quick Message sends a command to a single sign to show a custom message not defined in the message libraries; this feature allows you to create and send new messages "on the fly".
- Blank Sign sends a command to one or more signs to activate the "blank" message (which is specified by the Blank Message Location field on the Sign MULTI Configuration window (page 3-34)).

You can issue DMS commands manually (from the DMS Status display, from the map, from the Entity Tree, or via a manual command), or you can schedule them to run at specific times via the scheduler. You can also use triggers to configure Centracs to send specific messages when certain events occur. For example, you could allow current traffic conditions to trigger the appropriate message, as shown below:

- Trigger 1 When the "Link Threshold Increased To Level 03" event occurs, activate the message: "HEAVY TRAFFIC CONSIDER ALTERNATE ROUTE"
- Trigger 2 When the "Link Threshold Increased To Level 02" (or "Link Threshold Decreased To Level 02") event occurs, activate the message: "HEAVY TRAFFIC - USE CAUTION"
- Trigger 3 When the "Link Threshold Decreased To Level 01" event occurs, activate the message: "HAVE A NICE DAY"

Configuring DMS Entities

# **Configuring DMS Entities**

Use the Entity Configuration window to add or change the parameters necessary to deploy and operate dynamic message signs (DMS) in Centracs. For details, refer to page 3-27.

# **Configuring DMS Messages**

Use the windows shown below to add, change, or delete Changeable messages for a DMS entity. The messages defined here are stored in the Centracs database, and they are also sent to the DMS device for storage in the message libraries on the sign.

**Note** • Your Jurisdiction Role must include the Edit DMS Message permission.

**Note** • The add/change/delete functions are available only for Variable Message Signs (VMS). For Changeable Message Signs (CMS), you can only view the messages that are defined on the sign.

**Note** • You can use the Upload Changeable Messages command (via the scheduler or a manual command) to copy all the messages from the Changeable message library on the sign into Centracs. Be aware that if you have already defined or loaded Changeable messages in Centracs for this DMS, this command replaces them with the Changeable messages currently defined on the sign.

#### To add a new Changeable message:

1 In the Entity Tree, right-click the DMS entity and select Edit Messages. The DMS Messages window opens:

<u> </u>	OMS Mess	ages		
	Configure changeable DMS messages. These messages are stored in Centracs and sent to the message library on the sign. This feature changes the messages in the sign.			
Ŧ	Add	Edit	X Delete	
ID	Runtime Priority	Beacon	MULTI String	
1	12	<b>V</b>	<quick message=""></quick>	
2	1		FESTIVUS PARADE USE DETOUR	
3	5	<b>V</b>	ROCKSLIDE IN RED MTN PASS	
4	1		SAVE WILDLIFE SLOW DOWN	
				OK Cancel

All the Changeable messages for the sign are shown, along with their Runtime Priority and Beacon setting. You can hover the mouse pointer over the MULTI String column to see a representation of the message on the sign.

Configuring DMS Messages •

The first position in this table (with an ID of 1) is always reserved for quick messages, and cannot be changed or deleted on this window.

**Note** • This window shows only Changeable messages; Permanent messages cannot be changed in Centracs.

2 Click Add... The Edit DMS Message window opens.

Edit DMS Mes	sage	
A Default	• 3 😢 🖃 🖷 Fields 🗸	
	Page 1 of 1	0
	l	000000000000000000000000000000000000000
[m]		
ID 5 R	tuntime Priority 1 Beacon Ca	ncel

- 3 Enter the text and properties for the message. You can enter multiple lines and multiple pages, you can change the fonts, justification, etc. For details on how to use the message editor, refer to *Using the DMS Message Editor* on page 9-15.
- 4 Click OK.
- 5 To set up more messages for this DMS device, repeat steps 2 through 4.
- 6 On the DMS Messages window, click **OK** again.
- 7 On the Entity Configuration window, click **Apply** or **OK**. (**Apply** saves your changes and keeps the window open; **OK** saves your changes and closes the window.)
- 8 Centracs asks for permission to send the new message to the sign for storage in its internal message library. Click **OK**.

A progress bar is shown while Centracs updates the sign. The new message is also stored in Centracs.

• Configuring DMS Messages

#### To edit a Changeable message:

- 1 From the list on the DMS Messages window, select a message and click **Edit**. The Edit DMS Message window opens.
- 2 Make the necessary changes and click **OK**.
- 3 On the DMS Messages window, click **OK** again.
- 4 On the Entity Configuration window, click **Apply** or **OK**. (**Apply** saves your changes and keeps the window open; **OK** saves your changes and closes the window.)
- 5 Centracs asks for permission to send your changes to the sign to update its internal message library. Click **OK**.

A progress bar is shown while Centracs updates the sign. Your changes are also stored in Centracs.

**Note** • If you edit a message that is already active on the sign, you must reactivate the message in order for your changes to take effect on the sign.

#### To delete a Changeable message:

- 1 From the list on the DMS Messages window, select a message from the list and click **Delete**.
- 2 Click **OK** (or to cancel the deletion, click **Cancel**).
- **3** On the Entity Configuration window, click **Apply** or **OK**. (**Apply** saves your changes and keeps the window open; **OK** saves your changes and closes the window.)
- 4 Centracs asks for permission to delete the message from the internal message library on the sign. Click **OK**.

A progress bar is shown while Centracs updates the sign. Your changes are also stored in Centracs.

**Note** • If you delete a message that is already active on the sign, this does NOT remove the message from the sign display; you must send another message (or the blank message) to the sign.

Using the DMS Status Display

# Using the DMS Status Display

The DMS Status display shows a graphical representation of the current status of a dynamic message sign:

DMS Sign @ Eastwood Transit Center - Sk	syline (VariableMessageSign) 1s 📄 🗖
ACCIDEN	
USE AL	F ROUTE
Message	Summary
Current Message:	Control Mode: Central Brightness: 25
Runtime Priority: 1	Display Type: LED
Message Type: Changeable Message ID: 1	Voltage: 14.2 Line Voltage: 110
Stored Messages:	Time
Permanent: 12	Last: 18:45:15 Last Update: 18:45:18
Changeable: 5 Quick Message Blank Sign Poll	Error: 1s
Temperature Warning	por Open

#### To open the DMS Status display:

In the Entity Tree, double-click the DMS, or right-click the DMS and select Show Status... from the popup menu.

Or

In the Map Viewer, double-click a DMS icon, or right-click the icon and select Show Status... from the popup menu.

You can open Status displays for multiple DMS entities at the same time. You can move them, resize them, and dock them like other windows in Centracs.

Message

## Message

#### Current Message

Field	Description
Runtime Priority	A number from 1 to 255 that specifies the importance of the message, where 1 is the lowest priority and 255 is the highest priority. To activate a new message, the Activation Priority of the new message must be greater than or equal to the Runtime Priority of the current message; otherwise, the sign rejects the new message.
Message Type	The type of message that the sign is currently showing:
	<ul> <li>Permanent – Cannot be changed without physically replacing hardware components; does not lose its content if the power is turned off.</li> </ul>
	<ul> <li>Changeable – A user can change the content; does not lose its content if the power is turned off.</li> </ul>
	<ul> <li>Blank – one of 255 blank messages (each has a different runtime priority).</li> </ul>
	<ul> <li>Other – Any other type than those specified above; refer to the manual for the device.</li> </ul>
Message ID	The ID number of the message currently shown on the sign.

#### Stored Messages

This section shows the number of messages currently contained in the Permanent and Changeable message libraries in Centracs for this sign (this may not match the number of messages stored on the sign if you have not uploaded all of the messages to Centracs).

At the bottom of the Display section, the **Activate Message/Quick Message** and **Blank Sign** options allow you to change the sign directly from the Status display. For information about these commands, refer to **Action Types on page A-1**.

**Note** • The Quick Message option is shown for Variable Message signs; the Activate Message option is shown for Changeable Message signs.

The **Poll** button causes Centracs to check the status of the sign on demand. When status information is received from the sign, the Last Update field changes to the current time.

Summary •

# Summary

Field	Description
Control Mode	<ul> <li>Local – the sign is under control of the local control panel or another device (such as a laptop) that is connected to the sign locally.</li> </ul>
	<ul> <li>Central – the sign is under control of the central system.</li> </ul>
	<ul> <li>Central Override – local mode has been overridden by central (for example, in the case that a technician accidentally left the sign set to local mode); in this mode, commands from the local control panel are ignored.</li> </ul>
	To put a sign into Central Override mode, right-click the DMS entity in the Entity Tree and select <b>Central Override</b> .
Display Type	The display technology used by the sign:
	Bulb
	Drum
	ELD
	Fiber Optics
	Flip Disk
	Shuttered
	<ul> <li>Other</li> </ul>
Voltage	The sign battery voltage, in volts. The range is 0 to 655.35.
Line Voltage	The AC line voltage, in volts. The range is 0 to 255.
Brightness	The current brightness level of the sign. The range is 0 (off) to 255 (brightest).

# Time

Field	Description
Last	The time of day reported by the sign for the last "Get Time" request (in HH:MM:SS format).
Last Update	The last time Centracs polled the sign for status information (in HH:MM:SS format).
Error	The time drift between Centracs and the sign.

This section of the window also includes buttons to request the current time from the sign or set the time on the sign.

#### Notifications

For more details about time drift and the information shown in the Time section, refer to *Synchronizing the Time* on page 6-17.

#### Notifications

The unlabeled section at the lower-left corner of the window contains messages to notify you of various conditions, such as a communication problem, a message error, or a sign voltage error. For example:

Message Error		

It tells you at a glance whether the DMS device is reporting any errors. A red dot to the left of an error type tells you that the DMS is currently reporting an error of that type. To see more details, hold your mouse pointer over the error.

For a brief explanation of each error type, refer to *Dynamic Message Sign* on page 4-8.

(You can also set up alert triggers for these error types. For details, refer to *Using Triggers* on page 4-25.)

#### Comms

The Comms section is a summary of the communications status between Centracs and the DMS device. Hover the mouse over the colored bar on the bottom to see more details; click it to open the Comm Statistics graph. For more information, refer to *Viewing Comms on the Status Display* on page 6-53.

Activating a DMS Message from the Library •

# Activating a DMS Message from the Library

At any time, you can activate a DMS message from the Permanent or Changeable library.

```
Note • To activate a custom message, use the Quick Message action (page 9-13).
```

#### To activate a message from the libraries:

1 From the Entity Tree or Map Viewer, right-click the sign and select Activate Message. This window opens:

Sign @ Eastwood Transit Center - Activate Message			
Message Library	✓ Permanent ✓ Changeable		
Message		•	
Activation Priority	255		
Duration	1 O Minutes O Hours O Days O No end		
	00		
Preview:			
	ок Са	ancel	

- 2 For Message Library, select the type(s) of messages to show in the Message dropdown list (below). For example, if you select Permanent, the dropdown list shows only the messages in the Permanent message library on this sign.
- **3** From the Message dropdown list, select the message to show on the DMS. A preview of the message is then shown at the bottom of the window.
- 4 Enter the Activation Priority for the message. In order for this message to supercede the message currently shown on the sign, the Activation Priority must be greater than or equal to the Run Time Priority of the current message. (The Run Time Priority of the current message is shown on the DMS Status display.)
- 5 In the Duration field, enter the length of time to show the message on the sign. Use the radio buttons to specify whether the duration you entered is in minutes, hours, or days. Or click the "No end" option to run this action indefinitely (i.e., until another message with a higher activation priority supersedes it).
- 6 Click OK.

**Note** • You can also send the Activate Message action via the scheduler or a manual command. Because this action is considered to be an instantaneous action in Centracs, it disappears from the Manual Commands or Scheduler Entries window as soon as it runs. Centracs sends the Duration settings to the sign, and the sign controls when the message is removed from the display.

Activating the Blank Message

# **Activating the Blank Message**

At any time you can send the "blank" message to one or more signs. The Blank Message Location field on the Sign MULTI Configuration window (page 3-34) specifies the message that Centracs sends for the Blank Sign action.

#### To activate the "blank" message:

From the DMS Status display, click **Blank Sign**.

Or

From the Entity Tree, right-click the sign and select **Blank Sign**.

Or

From the Map Viewer, right-click the sign and select **Blank Sign**.

Or

• To blank multiple signs at the same time, use the scheduler or create a manual command for the Blank Sign action.

Unlike the Activate Message action, the Blank Sign action does not have options for Activation Priority or Duration. For the Blank Sign action, the Activation Priority is automatically set to 255 (the highest priority), and the Duration is automatically set to "No end".

Creating a Quick Message

# **Creating a Quick Message**

At any time, you can activate a custom message on the DMS rather than activating a message from the libraries.

#### To activate a quick message:

1 From the DMS Status display, click **Quick Message**.

#### Or

From the Entity Tree, right-click the sign and select **Quick Message**.

#### Or

From the Map Viewer, right-click the sign and select **Quick Message**.

This window opens:

— Sign @ Eastwood	Transit Center - Quick Message	
Edit Message		
Activation Priority	255	
Duration	1 O Minutes O Hours O Days O No end	
	ОК Саг	ncel

- 2 Enter the Activation Priority for the message. In order for this message to supercede the message currently shown on the sign, the Activation Priority must be greater than or equal to the Run Time Priority of the current message. (The Run Time Priority of the current message is shown on the DMS Status display.)
- 3 In the Duration field, enter the length of time to show the message on the sign. Use the radio buttons to specify whether the duration you entered is in minutes, hours, or days. Or click the "No end" option to run this action indefinitely (i.e., until another message with a higher activation priority supersedes it).

- Creating a Quick Message
  - 4 Click Edit Message. The Edit DMS Message window opens:

Edit DMS Message		
A Default 🔹 🗐 🕻	🛛 🖃 🚍 Fields 🗸	
	Page 1 of 1	0
[m]		
Runtime Priority	1 Beacon	
	OK	Cancel

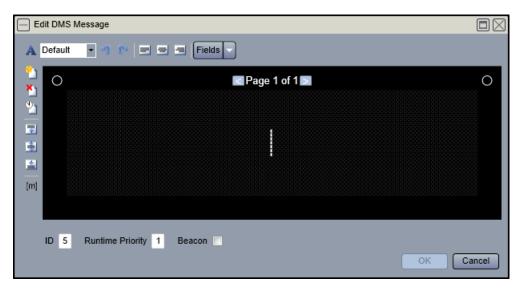
- 5 Define the text and properties for the quick message. You can enter multiple lines and multiple pages, you can change the fonts, justification, etc. For details on how to use the message editor, refer to *Using the DMS Message Editor* on page 9-15.
- 6 Click OK.
- 7 From the Quick Message window, click **OK** again.

The current quick message is always stored in the Changeable library, in the position specified by the Quick Message Location field on the Sign MULTI Configuration window (refer to *DMS MULTI Configuration* on page 3-34).

Using the DMS Message Editor •

# Using the DMS Message Editor

You can use the DMS Message Editor to edit Changeable messages, add Changeable messages, and create Quick messages:



**Note** • If you edit a message that is already active on the sign, you must reactivate the message in order for your changes to take effect on the sign.

#### To use the DMS message editor:

- 1 In the ID field (if shown), enter the number that identifies this message on the DMS device, i.e., the location for this message in the Changeable library. (Two messages can have the same ID only if they have different message types i.e., Permanent versus Changeable.) If you are creating a Quick message, the ID is automatically set to 1, and the ID field is not shown.
- 2 In the Runtime Priority field, enter a number from 1 to 255 that specifies the importance of the message, where 1 is the lowest priority and 255 is the highest priority. When this message runs, another message can override it only if the Activation Priority of the new message is greater than or equal to the Runtime Priority of this message; otherwise, the sign rejects the new message.
- 3 To flash the beacons when the sign shows this message, check the Beacon option.

Using the DMS Message Editor

4 In the black matrix, enter the text for the message. You can enter multiple lines and multiple pages, you can change the fonts, justification, etc.:

Action	Steps
To select text	Use the mouse to click and drag over the text, or hold down the Shift key and use the arrow keys to move the cursor.
To add a line break	Press Enter.
To add another page	Place your cursor at the location for the new page, then click 🖺.
To delete a page	Place your cursor in the page, then click 🎦.
To change how long each page is shown	Click To open the Page Timing window. Under the Time section, the On value specifies how long the page will be shown, and the Off value specifies how long the sign will be blank in between. To change these values, turn off the Default checkboxes. If you want to specify different timings for each page, turn off the "Use a single timing for all pages" option; otherwise, a single set of On/Off timing values will be used for all pages. (Note that this option is available only if multiple pages have been defined for the message.) For example:
To navigate to another page	Click <pre>If or the previous page, or Image for the next page.</pre>

Using the DMS Message Editor •

Action	Steps	
To change the horizontal justification	Click I for left justification, I for center justification, or for right justification. Justification. You can use more than one horizontal justification within the same message, and even within the same line. For example:	
	I-70 Ski Resort Access - Skyline VAIL PASS CLOSED ASPEN CHAINS REQ KEYSTONE HIGH WIND	
To change the vertical justification	Click 🔄 for top justification, ဲ for middle justification, or in for bottom justification. The entire message must use the same vertical justification.	
To change the font	Select the text to be changed, then select a font from the dropdown list beside the <b>N</b> .	
To insert a dynamic field	Click the down arrow beside the <b>Fields</b> dropdown. A list of available fields is shown. For example, you can use dynamic fields to show the current date, time, or temperature on the sign.	
To see the MULTI	Click III. (Click IIII again to close the MULTI box).	
syntax	For details about MULTI tags and syntax, refer to the NTCIP 1203 standard, "Object Definitions for Dynamic Message Signs (DMS)".	
To undo a change you made	Click 🔟. To undo multiple changes, click 🔟 multiple times.	
To redo a change you undid	Click 🎦 . To redo multiple changes, click 🎦 multiple times.	

• Viewing the Device Status Window

If Centracs detects an error in your message (for example, if you enter a character that is not supported by the font you selected), the MULTI box containing the syntax of your message is shown below the black matrix:

Edit DM	S Message	
A Defau	It 🔹 🐠 🖙 🚍 Fields 🗸	
21 (	) Repage 1 of 1 set	0
<u>i</u>		
<u> </u>		
[m]		
MUL		
ID	** is not a valid character in font: IDI	ancel

To see details about the error, hover the mouse pointer over the MULTI box, as shown above. Correct the error, then click **m** to close the MULTI box.

5 When the message is complete, click **OK**.

**Note** • The up/down arrows on the keyboard are not fully supported in the editor.

#### Viewing the Device Status Window

You can view the current communications status of all your DMS devices at once, using the Device Status window. Refer to page 6-24.

# 10

# **Generating Reports**

# **Overview**

I

I

I

I

In Centracs you can generate a number of useful reports, described below.

# Centracs Enterprise Reports

Report	Description
Comm Reports	
Comm Statistics Report	Shows various statistics about the communications between Centracs and your field devices. Refer to page 10-20.
Hourly Comm Statistics	The percentage of communications that failed for each signal during each hour of the day. Refer to page 10-26
System Reports	
Alerts Log	A list of the alerts that have been triggered by the systen within a specified time range. Refer to page 10-18.
Device Configuration	The current communications settings for each field device defined in the Entity Tree. Refer to page 10-23.
Entity Hierarchy	A printable view of the Entity Tree. Refer to page 10-24
Entity Notes	A list of the notes that have been defined for entities in the system. Refer to page 10-25.
System Activity	An audit trail of all the user activity in the Centracs application. Refer to page 10-50.
System Events	A list of all events that Centracs has logged within a specified date/time range. Refer to page 10-51.
User Login	A list of the logins to and logouts from the Centracs clien application within a specified time range. Refer to page 10-60.

I

Centracs Enterprise Reports

Report	Description
Users and Recipients	A list of all the people <del>(and remote S2S and C2C systems, if any)</del> that are configured as users and/or recipients in your database. Refer to page 10-61.
Detection Reports	
Detector Fault Status	A list of all existing detector faults. (For ASC/2, ASC/3, and Cobalt controllers only.) Refer to page 10-22.
Level of Service Link Report	A set of graphs that show historical Volume, Occupancy, Speed, V+kO, and Level of Service data for a collection of detectors. Refer to page 10-28.
Raw Detector Data Report	A list of the raw vehicle data collected from polls to the signal controllers. Refer to page 10-31.
Travel Time Link Report	A set of graphs that show the speed and travel time data for a specific BlueTOAD link pair during multiple date ranges. You can use this report to see changes in trends over time. You can plot data points every hour, every half hour, every quarter hour, or every 5 minutes within the specified date ranges. Refer to page 10-56.
VOS Daily Report	A set of graphs that show the volume, occupancy, and speed data for one or more vehicle detectors during a specified date range; you can plot data points every day, week, or month within the date range. Refer to page 10-62.
VOS Hourly Report	A set of graphs that show the volume, occupancy, and speed data for one or more vehicle detectors during a specified date range; you can plot data points every hour, every half hour, every quarter hour, or every 5 minutes within the date range. Refer to page 10-65.
VOS Multi-Date Hourly Report	A set of graphs that show the volume, occupancy, and speed data for one or more vehicle detectors during multiple date ranges; you can plot data points every hour, every half hour, every quarter hour, or every 5 minutes within the specified date ranges. Refer to page 10-69.
VOS Multi-Date Daily Report	A set of graphs that show the volume, occupancy, and speed data for one or more vehicle detectors during multiple date ranges; you can plot data points every day, week, or month within the specified date ranges. Refer to page 10-74.

Centracs Enterprise Reports

Report	Description
Signal Reports	
Signal Changes	A log of all signal events (Phase Green, Pattern Change, Ped Walk, etc.) that have occurred within a specified time period. Refer to page 10-33.
Signal Detector Events	A historical list of detector-related faults (such as Max Presence and No Activity faults) during a specified time period. Refer to page 10-34.
Signal Events	A historical list of controller-related events and errors (such as Local Flash Active and Cycle Fault) during a specified time period. Refer to page 10-36.
Signal MMU Events	Information about events reported by the MMU (Malfunction Management Unit) for one or more signals Refer to page 10-38.
Signal Upload and Compare	A list of the outcomes of all "Signal Upload and Compare" actions during a specified time period. Refer to page 10-44.
Split Monitor	Statistics about the number of cycles that occurred, the average of the actual cycle lengths, and the minimum and maximum cycle lengths during a specified time period for a specific signal; it also shows a bar graph of the average splits for each phase during this time period Refer to page 10-46.
Time Drift	A list of the outcomes of all "Time Drift Check" actions during a specified time period. Refer to page 10-53.
Time Drift History	
Traffic Responsive	Monitors Traffic Responsive performance on the system Refer to page 10-55.

I

I

I

L

I

I

• Centracs DCMS Reports

# Centracs DCMS Reports

For more information about these reports, refer to *Data Collection Reports* on page 17-42.

Report	Description
Data Collection Reports	
All Detector Data	Shows the following data for each selected device's detectors: Total Volume, Average Occupancy, Arithmetic Mean Speed, Average Flow Rate, Average Vehicle Headway, Average Vehicle Gap, 85% Speed.
Arithmetic Mean Speed	Shows the time mean speed for each detector during each hour of the day.
Average 85th Percentile Speed	(For G4/SX-300 RTMS only.) Shows the average travel speed of 85% of the traffic.
Average Vehicle Counts Classification	Shows the raw numbers of vehicles counted of each type, during each hour of the day, and averages them.
Average Vehicle Gap	(For G4/SX-300 RTMS only.) Shows the average number of seconds between vehicles, for each hour of the day.
Average Vehicle Headway	Shows the average time between vehicles for each detector during each hour of the day.
Average Vehicle Occupancy	Shows the average occupancy for each detector during each hour of the day.
Average Vehicle Volume	Shows the average number of vehicles for each detector during each hour of the day.
Average Vehicle Volume Classification	(For G4/SX-300 RTMS only.) Shows the raw numbers of vehicles counted of each type, during each hour of the day, and averages them.
Comparison Report	Allows you to generate various graphs and data tables to compare Autoscope data for two different dates or for two different date ranges.
Peak Hour Volume Report	Shows the 60-minute period that had the highest total volume.
Station Report	Allows you to generate various graphs and data tables for a single date or a single date range.
Total Vehicle Counts Classification	Shows the raw numbers of vehicles counted of each type, during each hour of the day.

Centracs MMS Reports •

Report	Description
Total Vehicle Volume	Shows the total number of vehicles for each detector during each hour of the day.
Total Vehicle Volume Classification	(For G4/SX-300 RTMS only.) Shows the raw numbers of vehicles counted of each type, during each hour of the day, and totals them.

# Centracs MMS Reports

I

I

For more information about these reports, refer to *MMS Reports* on page 19-88.

	Report	Description
1	MMS Reports	
	Asset and Inventory Counts	For each Location, and for each asset/inventory type, this report shows the number of 'In Service' assets/ inventory, the number of 'Out of Service' assets/ inventory, and the percent that are out of service. The report also shows overall totals for the entire System.
L	Assets and Inventory Out of Service	Graphically shows the number and percentage of assets/ inventory that are currently marked as Out of Service.
I	Assets Nearing Expected Failure	Shows assets that are nearing the end of their expected service life.
I	Assets Past Expected Failure	Shows assets that have passed the end of their expected service life.
1	Average Response	Shows statistics about Call ticket handling.
T	Dispatch History	Shows status information about the tickets for each Region and Location. You can filter the report to show call tickets, work orders, tickets found on-site, or all of the above.
L	Moved Assets	Shows assets that have been moved in Centracs from one Location to another.
I	PM Coming Due	Shows the last modified date, due date, and number of days until the due date for all Preventive Maintenance Checklists that have been scheduled and are still open.
I	PM Progress	Shows the current status, due date, and last modified date for all Preventive Maintenance Checklists that have been scheduled and are still open.

• Centracs MMS Reports

Report	Description
Project Activity	You can generate four different Project Activity reports:
	Call Tickets
	Work Order Tickets
	<ul> <li>Found Tickets (submitted by a technician via the mobile app)</li> </ul>
	Preventive Maintenance (PM)
System Age Dashboard	Graphically shows you the overall age and health of the assets in your system (green = young, red = old).
System Performance	Graphically shows you the number of:
Dashboard	assets out of service
	<ul> <li>assets nearing expected failure</li> </ul>
	<ul> <li>assets past expected failure</li> </ul>
	<ul> <li>outstanding call tickets</li> </ul>
	<ul> <li>outstanding work orders</li> </ul>
System, Region, and Location Values	Shows the original value and the current depreciated value of each asset in the system — grouped by Region, then by Location. The report shows assets only (not inventory, because Centracs does not calculate depreciation for inventory items).
Trending Count	Allows you to track the number of new tickets opened and the number of tickets closed over a specified date range. You can run the report for Call tickets or for Work Orders.
Trending Response	Shows statistics about Call ticket handling.

You can run these reports on demand or on a schedule — for example, you may choose to schedule the System Activity report to run at the end of each day.

With each report, you can format it, print it, save it to a file, and/or email it to a recipient.

**Note** • External 'Server-to-Server' entities are not included in the Centracs reports.

# Using the Toolbar

I

+ Configurable Re	port Options			
Start Date & Time:	3/9/2018 15 14:29	End Date & Time:	3/9/2018 15 15:29	
User(s):	acox,adamico,bgriggs,carı 🗸	Login Type:	User Logged In,User Logir 🗸	
				View Rep
User Log	▶ H   + ⊗ ©   <b>⇔</b> 🔲	A N • 100% •	Find   Next	
User Log		A W • 100% •	Find   Next	
User Log		A <b>_ ₩,</b> •   100% •	Find   Next	
User Log Time Range: 3/9/2018 2:29:20 PM ·	in	Full Name	Find   Next	
User Log Time Range: 3/9/2018 2:29:20 PM ·	<b>in</b> 3/9/2018 3:29:20 PM			
User Log Time Range: 3/9/2018 2:29:20 PM	in 3/9/2018 3:29:20 PM User Login :	Full Name	≎ Details	

The report toolbar is highlighted below:

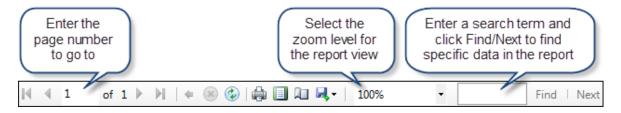
The report toolbar offers options to scroll through the pages of a report, print it, save it, and so on:

lcon	Function
°[1	Show/Hide Parameter Area – for reports that include parameters to filter the report data, this toggle option shows or hides the parameter area at the top of the window.
	First Page – takes you to the first page of the report.
4	Previous Page – takes you to the previous page of the report.
	Next Page – takes you to the next page of the report.
	Last Page – takes you to the last page of the report.
<b></b>	Back to Parent Report – in the Users and Recipients report (page 10-61), you can launch the User Login report (page 10-60) as a child report; in the Hourly Comm Statistics report (page 10-26), you can launch the Comm Statistics report (page 10-20) as a child report. This button then returns you to the original report.

Running a Report on Demand

lcon	Function
×	Stop Rendering – cancels the report generation.
٢	Refresh – regenerates the report.
	Print – launches the Windows <sup>®</sup> Print window.
	Print Layout – shows a print preview of the report.
	Page Setup – sets the paper size, margins, and orientation of the report before you print or export it.
-	Export – saves the report to a file (XML, CSV, PDF, HTML, XLS (or XLSX), TIF, or DOC (or DOCX)).

There are also three entry fields on the toolbar:



## Running a Report on Demand

#### To generate a report now:

1 From the main menu, click the Reports menu and select one of the available reports.

Some reports generate automatically at this point. Other reports require you to specify the types of data to be included in the report.

- 2 If the chosen report includes fields at the top of the window to filter the data to be included in the report, specify the settings for each filter option.
- 3 Click View Report.

#### Saving Your Report Parameters

If you frequently run the same report with the same parameter settings, you can save your settings as a "configurable report" so you never have to enter them again. For example, you can create a configurable Comm Statistics report that shows the communications for a specific set of devices for the previous day. You can then schedule Centracs to automatically run this report each morning and email it to you. (For details about scheduling reports, refer to *Scheduling a Report to Run* on page 10-12.)

Saving Your Report Parameters •

**Note** • The Users and Recipients report, Entity Hierarchy report, and Detector Fault Status report do not have configurable options.

#### To add a configurable report:

- 1 From the Reports main menu, select one of the available reports.
- 2 On the report window, click 🗄 to expand the Configurable Report Options:

Configurable Report Options								
Name User Login			✓ Shared					
Report Time Period	Default	•						
			Save Close					
Start Date & Time:	3/9/2018 15 14:29	End Date & Time:	3/9/2018 15 15:29					
User(s):	acox,adamico,bgriggs,carı 🗸	Login Type:	User Logged In,User Logiı 👻					
			View Report					

- 3 Change the Name field to describe the new report. For example, you might choose to include the time period of the report in the name to distinguish it from the standard report of the same name.
- 4 From the Report Time Period dropdown, specify one of the options below:
  - Default uses the default date/time parameters for the report you chose. For example, when you first open the Comm Statistics report, the report is set to show data for the most recent sixty minutes by default.
  - Configured Time uses a hard-coded date/time period. After you select this option, enter the specific date/time values into the report's date/time fields.
  - Hour includes data from one or more prior full hours. (Step 5 below allows you to specify the number of hours to include.) For example, if you set the report to run at 10:05 and to include 2 hours of data, it includes data for 08:00 to 10:00.
  - Day includes data from one or more prior full days. (Step 5 below allows you to specify the number of days to include.) For example, if you set the report to run at 3pm on Wednesday and to include 1 day of data, it includes data for Tuesday at 00:00 through Wednesday at 00:00. (To run the report for the most recent 24 hours, use the Hour option instead.) Note that the Day option is almost identical to the Beginning to End of Day (BTEOD) option, except that the BTEOD option ends at 23:59 instead of 00:00.
  - Week includes data from one or more prior full weeks, starting on Monday. (Step 5 below allows you to specify the number of weeks to include.) For example, if you set the report to run on Tuesday the 14th and to include 1 week of data, it includes data for Monday the 6th through Sunday the 12th. To run the report for the most recent 7 days, use the Day option instead.

- Saving Your Report Parameters
  - Month includes data from one or more prior full months. (Step 5 below allows you to specify the number of months to include.) For example, if you set the report to run on the 15th day of January and to include 2 months of data, it includes data for the entire months of November and December. To run the report for the most recent 30 days, use the Day option instead.
  - Year includes data from the prior full year. For example, if you set the report to run on the 31st day of May 2016, it includes data for January 2015 through December 2015. To run the report for the most recent twelve months (in this example, June 2015 through May 2016), use the Month, Week, or Day option instead. That is, run the report for 12 Months, 52 Weeks, or 365 Days.
  - Beginning to End Of Day includes data from one or more prior full days. (Step 5 below allows you to specify the number of days to include.) For example, if you set the report to run at 3pm on Wednesday and to include 1 day of data, it includes data for Tuesday from 00:00 to 23:59. (To run the report for the most recent 24 hours, use the Hour option instead.) Note that the Beginning to End of Day (BTEOD) option is almost identical to the Day option, except that the BTEOD option ends at 23:59 instead of 00:00.

Comm Statistics						
Configurable Re	port Options					
Name Comm Stati			Shared			
Report Time Period	Default	•	)			
	Default Configured Time Hour				s	ave Close
Start Date & Time	Day Week	6		01/16/2012 3:36:05 PM		View Report
Columns to Displa	Month Year	-0	/pe:	ACT, NTCIP	•	
Device Managers	ACT DM1, NTCIP DM1	Comm Servers:	•	Comm Server 1, Comm Se	rve 🔻	

- 5 If you selected the Hour, Day, Week, or Month option, a numeric field appears to the right. Enter the number of hours, days, weeks, or months to include in the report. For example, for the Hour option, if you enter 3 hours and if the report runs at 10:05, it includes data for 07:00 to 10:00.
- 6 If you leave the Shared checkbox enabled, the new report can be viewed, run, changed, or deleted by any user in the system (if they have the proper reporting permissions in their Application Role). To make the report private so that only you can use and maintain it, disable the Shared option.
- 7 Enter values for the other report parameters as appropriate. For example, on the Comm Statistics report, set the Columns to Display, Device Manager Type, Device Managers, Comm Channels, and Devices parameters.
- 8 Click **View Report** to save the values into the report.
- 9 Click Save.

The new report now appears in the Reports menu, under the Shared Reports submenu or the My Reports submenu.

Changing or Deleting a Configurable Report

# Changing or Deleting a Configurable Report

If one or more configurable reports have been saved in the system, they can be edited or deleted on the Manage Configurable Reports window.

**Note** • To delete a configurable report, you must have the System Configuration permission in your Application Role (page 20-19).

#### To manage a configurable report:

1 From the main menu, select **Reports ▶ Manage Configurable Reports...** The report management window opens:

Manage Configurable Reports		
Comm Statistics - YESTERDAY	_	•
Name Comm Statistics - YESTERDAY		✓ Shared
Report Time Period Day 1	day(s)	
Source Report Comm Statistics		Close Delete

- 2 From the dropdown list at the top, select a configurable report.
- **3** To make changes to the report, you can change the name, time period, and/or visibility (shared or private) of the report, then click **Apply** or **OK**. Or to delete the report, click **Delete**.

**Note** • You cannot change the Source Report field. To change the original report on which a configurable report is based, you must delete and re-add the configurable report.

#### To change report-specific parameters for a configurable report:

- 1 From the **Reports** ▶ **Shared Reports** or **Reports** ▶ **My Reports** menu, select one of the configured reports.
- 2 Change the parameters as needed, then click **View Report** to save the values into the report.
- 3 Click Save.

#### To create a new configurable report from an existing one:

- 1 From the **Reports** ▶ **Shared Reports** or **Reports** ▶ **My Reports** menu, select one of the configured reports.
- 2 Enter a name for the new report.
- 3 Change the parameters as needed, then click **View Report** to save the values into the report.
- 4 Click Save As.

Scheduling a Report to Run

#### Scheduling a Report to Run

#### To configure a report to run on a schedule:

- 1 From the main menu, select **Control ▶ Scheduler...** The Scheduler Entries window opens.
- 2 Click Add... The New Schedule Entry window opens.
- 3 Enter a name for this schedule entry, such as "Generate Daily Alerts Log Report".
- 4 In the Action dropdown list, expand the "Common" list of actions, then select **Generate Report**.
- 5 Select a report from the standard reports lists, or from the Shared Reports or My Reports list. (For information about "Shared Reports" and "My Reports", refer to Saving Your Report Parameters on page 10-8.)
- 6 Make sure the Enabled checkbox is checked.
- 7 From the Format dropdown, select the file format for the generated report:
  - Comma-separated values file (.csv)
  - Microsoft Excel spreadsheet (.xls)
  - Web page (.html)
  - Adobe Acrobat file (.pdf)
  - Graphic file (.tif)
  - Microsoft Word document (.doc)
  - Extensible Markup Language file (.xml)
- 8 If you want the report emailed to one or more people:
  - a Click to the right of the "Email Recipient" box.
  - b Select the recipient(s) to whom the report will be emailed. You can select one or more individual recipients, and/or one or more User Roles. If you select a User Role, then all users who are assigned that role AND who have been set up as a recipient will receive the report. To select more than one recipient/role at a time, hold the Ctrl or Shift key while you select them, or to select all, press Ctrl-A.
  - c After you have made your selections, click do nove them to the "Selected" side of the window, and click **OK**.

**Note** • Recipients of reports must also have an email address specified in Centracs. For details, refer to *Defining Recipients* on page 20-73.

- 9 If you want to save the report to a local folder or network location:
  - a Click to the right of the "Save To" box.

Scheduling a Report to Run •

- **b** Select the folder where you want to save the report file after it runs (or click "Make New Folder" to create a new folder for the report).
- c Click OK.
- **10** On the New Schedule Entry window, specify the date range for this schedule (such as a Start date of today's date, and an End date of "No end") in the Range box.
- **11** In the Times box, specify the time of day at which the report will be generated.
- **12** In the Recurrence box, specify how frequently the report will be generated (such as every weekday).
- 13 To enter any exceptions, such as holidays or vacation dates, expand the "Exceptions" section of the window and specify the days or dates. For details on how to add exceptions, refer to Using the Scheduler on page 7-11.
- 14 Click OK.

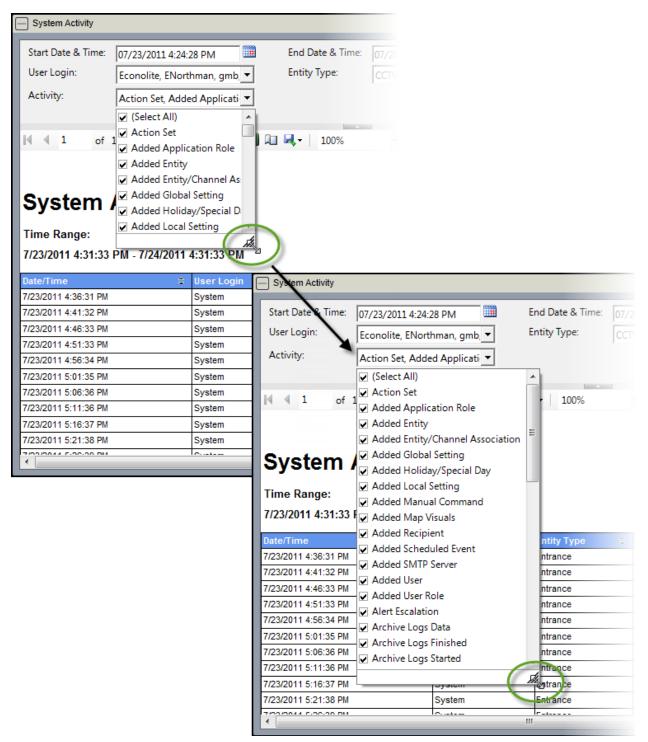
Your new report schedule is now shown in the Scheduler Entries table.

Stretching a Dropdown List

# Stretching a Dropdown List

#### To expand a dropdown list:

Most of the reports use dropdown lists. To expand a list for easier viewing, click the bottom-right corner and drag it:



Sorting Report Data •

# Sorting Report Data

#### To reorder the rows in the report:

Click the sort arrows in the column header. To sort in the opposite order, click them again.

$\sim$		sort buttons		
Time Range:		$\mathcal{T}$	$\rightarrow$	
7/19/2011 9:23:15 AM - 7/19/20	011 9:23 15 PM	A 1		=
Date/Time	🗘 User Login	Full Name		
7/19/2011 10:01:05 AM	LafeyetteR	Lafayette Reynolds	User Logged In	
7/19/2011 10:02:47 AM	kam	КМас	User Logged In	
7/19/2011 10:03:29 AM	<b>SS</b>	Sue Sylvester	User Logged Out	
7/19/2011 10:18:05 AM	System		Invalid Login: m	-
•			•	Þ

To see the sort arrows, you must *not* be in Print Layout view.

The sample below shows that the report is currently sorted by user ID, in ascending order.

lime Range: 7/19/2011 9:23:15 AM - 7/	9:23:15 PM	S			^		
Date/Time	÷	User Login	0	Full Name	¢	Details	E
7/19/2011 1:01:53 PM		ENorthman		Eric Northman		User Logged In	
7/19/2011 10:02:47 AM		kam		КМас		User Logged In	
7/19/2011 10:01:05 AM		LafevetteR		Lafavette Revnolds		User Loaged In	-

**Note** • Some columns cannot be sorted.

Saving a Report to a File

### Saving a Report to a File

#### To save a copy of a report:

1 Click the Export icon on the report toolbar.

A dropdown list shows the file format options:

- Comma-separated values file (.csv)
- Microsoft Excel spreadsheet (.xls or .xlsx)
- Web page (.html)
- Adobe Acrobat file (.pdf)
- Graphic file (.tif)
- Microsoft Word document (.doc or .docx)
- Extensible Markup Language file (.xml)
- 2 Select the type of file to export the data to.
- 3 When prompted, specify a name and location for the export file.

The file is added to the location you specified, and you can open it in the appropriate application, print it, email it, etc.

#### Filtering by Date

Many of the Centracs reports allow you to enter a date range to filter the data:

Start Date:	11/12/2015		End Date:	11/12/2015 11:59:59 PM	
-------------	------------	--	-----------	------------------------	--

In this example, the End Date shows a date and a time (11:59:59 PM), whereas the Start Date shows only a date. If the time is not shown, it indicates a time of 00:00:00 (midnight). So in this example, the report would include data for 11/12/2015 00:00:00 AM through 11/12/2015 11:59:59 PM.

#### Hiding the Parameters

#### To hide the parameter area at the top of a report:

Click the small arrow button above the toolbar, as shown below:

User Login Start Date & Time: 07/19/2011 9:23:15 AM User(s): Econolite, ENorthman, g	End Date & Tim	ne: 07/19/2011 9:23:15 PM	View Report
I I of 1 ▶ I I ← ⊗ ۞   Time Range:	🚓 🗐 🔍 🔍 ( <sup>h</sup> ) 100% Show or Hi	Find     Find	Next
7/19/ 🔲 User Login			
Date         I         I         of 1         I         I         €           7/19/2         7/19/2         Time Range:         7/19/2         7/19/2         7/19/2011 9:23:15 AM - 7/19/20100 9:2000 9:2000000000000000000000000000	© 😳   🚑 🗐 ᡅ 🔍 -   9:23:15 PM	100% -	Find Next
Date/Time \$	User Login 📀	Full Name 🗘 🗘	Details
7/19/2011 1:01:53 PM	ENorthman	Eric Northman	User Logged In
7/19/2011 10:02:47 AM	kam	КМас	User Logged In 🗧
7/19/2011 10:01:05 AM	LafeyetteR	Lafayette Reynolds	User Logged In
7/19/2011 11:30:53 AM	LafeyetteR	Lafayette Reynolds	User Logged Out
7/19/2011 10:18:10 AM	ptp	Phineas T. Prune	User Logged In
7/19/2011 10:03:29 AM	88	Sue Sylvester	User Logged Out
			Tanna Eal Tanana 🖡 🖡

To show the parameters, click the button above the toolbar again.

Alerts Log

## **Alerts Log**

The Alerts Log is a list of all the alerts that have been triggered within the time range you specify, along with any actions that have been taken on those alerts. The report shows the date and time at which the alert originally occurred, the entity name and event name associated with the alert, and the severity of the alert (Information, Warning, or Critical).

When an alert is originally generated, the Ack State is "New". If someone acknowledges or closes the alert, the Ack State is changed to "Acknowledged" or "Closed", the Ack User column is populated with the user ID of that person, and the Ack/Close Time column is populated with the date and time at which this action was done. If someone unacknowledges the alert, the Ack State is set back to "New". Because Centracs does not require Informational alerts to be acknowledged by a person, they are treated as if they have already been acknowledged, and are shown in the report with an Ack State of "Acknowledged".

A full history of each alert is kept in the log. For example, an alert that has been acknowledged and then closed will be shown in the log three times — one time as New, one time as Acknowledged, and one time as Closed.

You can filter the report by date and Entity State, which specifies whether to include only active entities, only deleted entities, or both.

You can sort the information by any column (by default, the report is sorted by date/time).

By default, the report shows up to 500 alerts that match your selection criteria. If your database has a large number of alerts, select 250 from the "Row Limit" dropdown to increase the efficiency of the report. If necessary, you can also select a number larger than 500, or you can choose to show all alerts.

Alerts Log •

Configurable Report	t Options						
Entity Type:	12/28/2010 8:57: Aries, CCTV, Cen Active		d Date & Time: ow Limit:	12/29/2010 11:5 500	57:33 AM		View Report
4 4 1 of 3	▶ ¥   ∉ (	8 🕲   🌲 🔲 💷 🛤	-   100%	•	Find   Next		
Alerts Lo	og 🛛						
Time Range:							
12/28/2010 8:57:33 A	AM - 12/29/2010	11:57:33 AM					
12/28/2010 8:57:33 A Event Created At	M - 12/29/2010 Criticality	11:57:33 AM Event Name	Ack State	Ack User	Ack/Close Time	Entity Name	EventDetails
vent Created At			Ack State Acknowledged	Ack User	Ack/Close Time	Entity Name Woodmen @ N Union Blvd (ASC/3)	Event Details
vent Created At 2/28/2010 9:31:46 AM 2/28/2010 11:31:46	Criticality	Event Name		Ack User Econolite User	Ack/Close Time 1/7/2011 2:35:21 PM		Event Details
vent Created At 2/28/2010 9:31:46 AM 2/28/2010 11:31:46 M	Criticality Information	Event Name Detector Fault - ON	Acknowledged			Woodmen @ N Union Blvd (ASC/3)	Event Details
vent Created At 2/28/2010 9:31:46 AM 2/28/2010 11:31:46 M 2/28/2010 6:29:40 PM	Criticality Information Information	Event Name Detector Fault - ON Detector Fault - ON	Acknowledged Closed			Woodmen @ N Union Blvd (ASC/3) Woodmen @ N Union Blvd (ASC/3)	Event Details
ivent Created At (2/28/2010 9:31:46 AM (2/28/2010 11:31:46 AM (2/28/2010 6:29:40 PM (2/29/2010 8:22:23 AM	Criticality Information Information Information	Event Name Detector Fault - ON Detector Fault - ON Detector Fault - OFF Flash: Local Manual -	Acknowledged Closed Acknowledged			Woodmen @ N Union Blvd (ASC/3) Woodmen @ N Union Blvd (ASC/3) Woodmen @ N Union Blvd (ASC/3)	Event Details
	Criticality Information Information Information Critical	Event Name Detector Fault - ON Detector Fault - ON Detector Fault - OFF Flash: Local Manual - ON Flash: Local Manual -	Acknowledged Closed Acknowledged New	Econolite User	1/7/2011 2:35:21 PM	Woodmen @ N Union Blvd (ASC/3) Woodmen @ N Union Blvd (ASC/3) Woodmen @ N Union Blvd (ASC/3) Woodmen @ Chapel (ASC/3)	Event Details
vent Created At 2/28/2010 9:31:46 AM 2/28/2010 11:31:46 AM 2/28/2010 6:29:40 PM 2/29/2010 8:22:23 AM 2/29/2010 8:25:01 AM	Criticality Information Information Critical Critical Critical	Event Name Detector Fault - ON Detector Fault - ON Detector Fault - OFF Flash: Local Manual - ON Flash: Local Manual - ON	Acknowledged Closed Acknowledged New Acknowledged	Econolite User	1/7/2011 2:35:21 PM 1/2/2010 8:25:01 AM	Woodmen @ N Union Blvd (ASC/3) Woodmen @ N Union Blvd (ASC/3) Woodmen @ N Union Blvd (ASC/3) Woodmen @ Chapel (ASC/3) Woodmen @ Chapel (ASC/3)	Event Details

# **Note** • Events that are not configured to generate alerts are not included in this report; those events are included in the System Events report (page 10-51).

**Note** • For alerts on the numbered preempt events (i.e., Preempt Emergency Vehicle ##, Preempt Railroad ##, Preempt Other ## — for example, Preempt Railroad 01), the Details column shows the preempt description that is *currently* in effect for that preempt. (If the preempt description has been changed since the alert was generated, the preempt description in the Details column will not be the same as the preempt description that was in effect when the alert was triggered.) If the default preempt descriptions have been overridden for a specific signal, the override description is shown in the report; if not, the default description is shown in the report. For more information, refer to *Preempts* on page 20-5 and *Customizing the Preemptor Descriptions for a Signal* on page 3-42.

Comm Statistics Report

#### **Comm Statistics Report**

The Communication Statistics report contains various stats about the communications between Centracs and your field devices. For each device, the report shows:

- Attempts the number of communication attempts made within the specified date/ time range.
- **Failures** the number of those attempts that failed.
- Comm Success % the calculated success rate percentage of all communications (polling and non-polling comms) with this device:

```
Comm Success % = ((Attempts - Failures) / Attempts) * 100
```

- Poll Success % the calculated success rate percentage of all polls to this device. SEE MY NOTES AT BOTTOM OF POLLING COMMS VS NONPOLLING COMMS TOPIC
- Poll Period Avg the average time between polls to this device (in minutes, seconds, and milliseconds). The Primary Poll Rate specified for the communication channel in Centracs is the *intended* poll rate; the Poll Period Avg is an average of the *actual* poll rates for the specified date/time range.
- **Content Failures** the number of incoming poll packets from the device that were not the correct size or did not contain the correct information.

**Note** • The Attempts, Failures, and Comm Success % values include both polling and non-polling comms. For more information, refer to *Overview of Polling Comms vs. Non-polling Comms* on page 20-47.

The report also shows the device manager, comm channel, and jurisdiction that each device is assigned to.

You can sort the information by any column (by default, it is sorted by Entity Name).

**Note** • This report can also be launched for a specific hour from the Hourly Comm Statistics report (page 10-26). To return to the parent report, click the "Back to Parent Report" icon.

Comm Statistics Report •

Configurable Report Options											
Start Date & Time: 3/1/201	4 9:58:35 AM		End Date & Ti	me: 3/14	/2014 10:58:35	AM 🛄				View Re	por
Columns to Display: Attemp	ts, Failures, Con	nm St 🔻	Device Manag	er Type: NTC	P	•					_
evice Managers: Device	Manager 1	•	Comm Servers	: Com	m Server 1, Co	omm Serve 🔻					
omm Channels:	CIP, LE IP Chann	el, LE 💌	Devices:	Anni	ie Goolahee @	Bad Billy					
	🗧 🛞 🚱	🔅 🔲 🕮 🖌	k - 🕴 100%	-	F	ind Next					
Communicat	tion St	atistics	-								
Communicat	tion Sta	atistics	5								
	tion Sta	atistics	5								
ïme Range:			5								
ime Range:			5								
ime Range: 1/2014 9:58:35 AM - 3/14/2			Comm Success %	Poll Success %	Poll Period Avg	Content Failures	Device Manager	Comm Server	Channel	Jurisdiction Name	
ime Range: /1/2014 9:58:35 AM - 3/14/2 ntity Name nnie Goolahee @ Bad Billy	014 10:58:35 A	М	Comm	Poll Success % 93			Device Manager Device Manager 1	Comm Server 1		Jurisdiction Name	
ime Range: 11/2014 9:58:35 AM - 3/14/2 ntity Name mie Goolahee @ Bad Billy ratt (504) mie Goolahee @ OlafWay	014 10:58:35 A Attempts	M Failures	Comm Success %		Avg	Failures			IP - NTCIP		-
ime Range: 11/2014 9:58:35 AM - 3/14/2 ntity Name nnie Goolahee @ Bad Billy att (504) nnie Goolahee @ Olaf Way 01) nnie Goolahee @ Sweet Trav	014 10:58:35 A Attempts 477564	M Failures 33219	Comm Success % 93	93	Avg 0:05.0246	Failures 0	Device Manager 1	Comm Server 1	IP - NTCIP IP - NTCIP	General	-
ime Range: 1/2014 9:58:35 AM - 3/14/2 ntity Name mie Goolahee @ Bad Billy at (504) nnie Goolahee @ Olaf Way 01) nnie Goolahee @ Sveet Trav 02) nnie Goolahee @ Tofutti Klein	014 10:58:35 A Attempts 477564 421916	M Failures 33219 39345	Comm Success % 93 91	93 92	Avg 0:05.0246 0:05.0136	Failures 0 0	Device Manager 1 Device Manager 1	Comm Server 1 Comm Server 1	IP - NTCIP IP - NTCIP IP - NTCIP	G eneral G eneral	-
Communicat Time Range: V1/2014 9:58:35 AM - 3/14/2 Entity Name Annie Goolahee @ Bad Billy ratt (504) Annie Goolahee @ Olaf Way 501) Annie Goolahee @ Sweet Trav 502) Annie Goolahee @ Tofutti Klein we (503) Sign @ Eastwood Transit Center Skyline)	014 10:58:35 A Attempts 477564 421916 477145	M <b>Failures</b> 33219 39345 33198	Comm Success % 93 91 93	93 92 93	Avg 0:05.0246 0:05.0136 0:05.0248	Failures 0 0 0	Device Manager 1 Device Manager 1 Device Manager 1 Device Manager 1	Comm Server 1 Comm Server 1 Comm Server 1	IP - NTCIP IP - NTCIP IP - NTCIP IP - NTCIP	General General General	

**Note** • The "CommStatisticsLogPeriod" Global Setting defines the interval at which communication statistics are logged, and can affect what you see in this report. For example, if "CommStatisticsLogPeriod" is set to 15 minutes and you try to see comm stats for the last ten minutes, the report may not show any data at all, and you must wait until the comm stats are logged again to run the report. Similarly, if you run the report for the last hour, keep in mind that the data may or may not include the most recent 15 minutes (or whatever interval the Global Setting is set to). For more information about this Global Setting, refer to *Overview of Global Settings* on page 20-54.

Detector Fault Status Report

#### **Detector Fault Status Report**

For ASC/2, ASC/3, and Cobalt controllers, the Detector Fault Status report is a printable list of the existing detector faults, which are also shown on the Detector Fault Status monitoring window (page 6-48). All detectors are monitored, regardless of whether they are defined in the Entity Tree.

**Note** • Detector faults are reported to Centracs only if:

the "shortAlarmStatus" object is included in the polling packet definition. For more information, refer to *Configuring Polling Packets* on page 20-50.

and

the "ActivateDetectorDiagnostics" Global Setting is set to "true". Without this setting, the Detector Fault Status window is disabled. (It may be necessary to stop and start the Centracs Core service on the server machine in order for changes to this parameter to take effect.)

The first column shows the date and time at which the detector fault data was last polled. The polling frequency is determined by the settings in the Polling Packet Editor (page 20-50) and the Servers/Comms Configuration window (page 20-36). For each faulted detector, this report also shows the signal name, the detector number (i.e., the Controller Reference number in the Entity Configuration for the detector), the detector name (if any), the detector type, and the fault(s) for that detector.

You can sort the report by any column.

Detector Fault Status						
◀ ◀ 1 of 1 ▶ ▶	+ 🛞 🚱   🖨 🔲 💷 💐	•   100%	Find ↓ N	Vext		
Detector Fau	lt Status					• III
Date/Time of Last Poll	Signal Name	Detector ID	Detector Name	Detector Type	Fault Type(s)	
8/11/2011 4:53:17 PM	Garden of the Gods @ IH25	1	Vehicle	Vehicle	No Activity Fault	
<		m				

**Note** • For a history of all detector faults that have occurred during a specific time range (both existing and resolved faults), run the System Events report for all the "Detector" events types (NTCIP controllers only), or run the Signal Detector Events report (NTCIP and ACT controllers). Refer to *System Events Report* on page 10-51 or *Signal Detector Events Report* on page 10-34.

Device Configuration Report

#### **Device Configuration Report**

The Device Configuration report shows the current communications settings for each field device defined in the Entity Tree. For descriptions of the fields on this report, refer to *Entity Configuration - Signals* on page 3-36.

These devices are *not* shown in the report:

- Devices without any configured communication settings (on the Entity Configuration window)
- Devices from external Server-to-Server systems

**Note** • To show CCTV devices, be sure that "None" is selected in the Device Managers and Port Profile dropdown lists, and that "CCTV Channel" is selected in the Comm Channels dropdown, and that the CCTV devices are selected in the Devices dropdown.

In addition to the data filter options at the top, you can also select which columns to include in the report.

You can sort the data by any column.

The last row of the report shows the total number of devices being shown. Using the filter options at the top, this Total row can be used as a quick way to determine the total number of devices in Centracs, the total number of devices on a specific channel, the total number of devices of a specific type, etc.

<ul> <li>Configurable Report Option</li> </ul>	ns										
	Channel, I	n, Channel, De 💌 P - NTCIP, LE ! 💌 , Autoscope P 💌	Device Port Pro Devices	ofile: Cer	rice Manager ACT, ntracs ntroller 501 (Benne	1	-				View Re
(	4	8 🕲   🖨 🔲	🛍 🖬 - 🛛	100%	•	Find	Next				
Device Con	figu										
Device Name	Туре	Jurisdiction	Channel	Device Manager	IP/Port	Drop	1º/2º/3º Poll Rates	Retries	Mode	Port Profile	Version
Controller 501 (Bennett St @ 2nd St)	ASC3	General	IP - NTCIP	Device Manager NTCIP	127.0.0.1:501	0	10000/30000/ 0	3	Online	Centracs	12.60.73
Controller 502 (W Carr Ave @ N B St)	ASC3	General	IP - NTCIP	Device Manager NTCIP	127.0.0.1:502	0	1000 / 30000 / 0	3	Online	Centracs	12.60.73
<b>C</b>	ASC3	General	IP - NTCIP	Device Manager NTCIP	127.0.0.1:503	0	1000 / 30000 / 0	3	Online	Centracs	12.60.73
Controller 503 (Bennett St @ S B St)							4000 100000 10	3	Online	Centracs	
Controller 503 (Bennett St @	Oasis	General	Serial - ACT	Device Manager ACT	COM 1	1	1000 / 30000 / 0	3	Online		
Controller 503 (Bennett St @ S B St)	O asis	General General	Serial - ACT		COM 1 127.0.0.1:161	0	30000 / 30000 / 0 0	3	Online	Centracs	00.46.00 09/19/05

1°=Primary

2°=Secondary

3°=Tertiary

**Drop=Serial Drop Address** 

Entity Hierarchy Report

### **Entity Hierarchy Report**

The Entity Hierarchy report depicts the relationships between all entities defined in the Entity Tree. Within each level of the tree, entities are sorted by name. This report is useful to print a copy of your Entity Tree.

When you open the report, collections of entities are collapsed by default. To expand them, click the  $\boxplus$  button next to the collection name. Note that when you print the report, any entities that are collapsed and hidden from view do not print. In order to print *all* entities, make sure you have expanded all the collections first.

4 1 of 1 🕨 🕅   🗢 🛞 🚱   🌐	🔲 🛍 🔍 - 📔 100%	Find   Next
ntity Hierarchy		
ity Relationship	Туре	Description
rado Springs	System	
Briargate	Section	Briargate Blvd
COS Traffic Cams	URL	Colorado Springs Traffic Cam Website
New Signals in Testing	Group	Downtown COS
Woodmen	Section	Woodmen Rd
Woodmen-East	Subsection	East of I-25
Woodmen-West	Subsection	West of I-25
Woodmen @ Chapel	Signal	ASC/2
Woodmen @ Chapel-1	Vehicle Detectors	
Woodmen @ Chapel-2	Vehicle Detectors	
Woodmen @ Chapel-3	Vehicle Detectors	
Woodmen @ Chapel-4	Vehicle Detectors	
Woodmen @ Chapel-5	Vehicle Detectors	
Woodmen @ Chapel-6	Vehicle Detectors	
Woodmen @ Chapel-7	Vehicle Detectors	
Woodmen @ Chapel-8	Vehicle Detectors	
Woodmen @ Powers	Signal	Oasis
Woodmen @ Rockrimmon	Signal	W4
Woodmen-West-EB	Link	Eastbound
Woodmen-West-WB	Link	Westbound
Woodmen CCTVs	Group	
Woodmen @ Academy SW	CCTV	Advanced CCTV
Woodmen @ Chapel NW	CCTV	Axis

#### **Entity Notes Report**

The Entity Notes report is a list of all the entity-related notes that users have added to Centracs. You can filter the notes by the entity type, entity name, and/or the user who created the note. You can sort the notes by any column (by default, the report is sorted by Creation Date/Time); however, if you sort by the Notes column, any HTML formatting will be removed from the notes.

Entity Notes				
Configurable Report O	ptions			
Entity Type: Link, Sect User Login: Econolite	tion, Signal, Vehicl , kam	€ ▼ Entity Name: Bria	rgate (Briargate Blvd), W 💌	View Report
≪	- ▶   + ⊗ (	ا الله 🗐 💷 🔍 - 📔 🕼	6 •	Find Next
Entity Not	tes			
	Entity Type	Creation Date/Time	User Login	Notes
Briargate (Briargate Blvd)	Section	12/23/2010 6:30:48 PM	Econolite	<ul> <li>Entity added to system 12/16 by Jebediah Dunphy</li> <li>Entity name changed 12/28 by Jan M. Vincent</li> </ul>
WB Woodmen @ N Union 3	Vehicle Detectors	12/29/2010 10:45:14 AM	Econolite	Entity added to system 12/28 by Phil Dunphy     Entity comms configured 12/29 by Gary Dell'Abate
Woodmen @ Austin Bluffs (ASC/3)	Signal	12/29/2010 10:42:38 AM	Econolite	<ul> <li>Entity added 12/11 by Luke N. Laura</li> <li>Entity name change 12/28 by Sonny Hooper</li> </ul>
Woodmen-West-WB (Westbound)	Link	8/7/2011 2:25:45 PM	kam	<ul> <li>Entity added to Centracs on 7/1 by Irwin Fletcher</li> <li>Entity name changed on 7/14 by G. Bluth</li> </ul>
•				4

The User Login column shows the user who added the note (which may or may not be the last person who edited the note). The Creation Date/Time column shows when the note was added.

**Note** • This report does not show notes for entities that have been deleted.

**Note** • The Entity Name dropdown contains only entities that have notes defined in the system.

Hourly Comm Statistics

### **Hourly Comm Statistics**

The Hourly Comm Statistics report shows the percentage of communications that were successful for each signal during each hour of the day.

In the fields at the top, enter the start date and end date for the report (do not enter times), and select the signal(s) to be included in the report. If the date range you enter contains more than one day, the report averages the values for each hour of the day for the entire date range.

Green boxes that show 100% indicate that there were no comm failures during that hour, or that communications were not attempted during that hour. If any poll attempts failed, the box shows a number lower than 100% along with the appropriate color:

- Green = good comms
- Yellow = marginal comms
- Red = bad comms

To determine whether the measured comms were "good", "bad", or "marginal", Centracs uses the FilteredCommMarginal and FilteredCommBad Global Settings. (For details about these Global Settings, refer to *Communications Status* on page 20-47.) For example, if you set FilteredCommMarginal to 95% and FilteredCommBad to 75%, then:

- Green = 95%-100% successful comms
- Yellow = 75%-95% successful comms-SEE MY NOTES AT BOTTOM OF POLLING COMMS-VS NONPOLLING COMMS TOPIC
- Red = 0%-75% successful comms

+ Configurable Report Options															
Start Date: 01/02/2011				End Date	01/08	/2011								View	Repor
Signal Name(s): Woodmen @	ο Austin P	Rhuffs ( 🔻													
- produiter e			1												
4 4 <b>4 4 4 5</b> 5						-								1	
4 4 1 of 1 ▶ ▶	4 20	ها 😨		1 🔤 - 🗌	100%		•		Find	Next					
Hourly Com	mur	nica	tion	Sta	atiet	tice									
	nui	nca	uon		21131	แนอ									
11/7/2014 - 11/9/2014															
11/1/2014 - 11/9/2014															
	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:0
Signal Name Woodmen @ N Union Blvd															
Signal Name	0:00 98%	1:00 98%	2:00 98%	3:00 99%	4:00 98%	5:00 98%	6:00 99%	7:00 98%	8:00 98%	9:00 98%	10:00 98%	11:00 97%	12:00 98%	13:00 97%	14:0 999
Signal Name Woodmen @ N Union Blvd															
Signal Name Woodmen @ N Union Blvd (ASC/3) Woodmen @ N Academy	98%	98%	98%	99%	98%	98%	99%	98%	98%	98%	98%	97%	98%	97%	999
Signal Name Woodmen @ N Union Blvd (ASC/3) Woodmen @ N Academy (ASC/3)	98% 100%	98% 100%	98% 100%	99% 100%	98% 100%	98% 100%	99% 100%	98% 100%	98% 100%	98% 100%	98% 100%	97% 100%	98% 100%	97% 97%	99% 100
Signal Name Woodmen @ N Union Blvd (ASC/3) Woodmen @ N Academy (ASC/3) Woodmen @ Chapel (ASC/2)	98% 100% 2%	98% 100% 2%	98% 100% 2%	99% 100% 2%	98% 100% 3%	98% 100% 2%	99% 100% 2%	98% 100% 2%	98% 100% 2%	98% 100% 3%	98% 100% 2%	97% 100% 4%	98% 100% 3%	97% 97% 2%	999 100 2%
Signal Name Woodmen @ N Union Blvd (ASC/3) Woodmen @ N Academy (ASC/3) Woodmen @ Chapel (ASC/2) Woodmen @ Rockrimmon (W4)	98% 100% 2% 98%	98% 100% 2% 98%	98% 100% 2% 98%	99% 100% 2% 98%	98% 100% 3% 98%	98% 100% 2% 98%	99% 100% 2% 98%	98% 100% 2% 98%	98% 100% 2% 98%	98% 100% 3% 98%	98% 100% 2% 100%	97% 100% 4% 100%	98% 100% 3% 100%	97% 97% 2% 98%	999 100 2% 969
Signal Name Woodmen @ N Union Blvd (ASC/3) Woodmen @ N Academy (ASC/3) Woodmen @ Chapel (ASC/2) Woodmen @ Rockrimmon (W4) Woodmen @ Powers (Oasis)	98% 100% 2% 98% 3%	98% 100% 2% 98% 2%	98% 100% 2% 98% 2%	99% 100% 2% 98% 3%	98% 100% 3% 98% 2%	98% 100% 2% 98% 3%	99% 100% 2% 98% 2%	98% 100% 2% 98% 3%	98% 100% 2% 98% 2%	98% 100% 3% 98% 3%	98% 100% 2% 100% 2%	97% 100% 4% 100% 4%	98% 100% 3% 100% 3%	97% 97% 2% 98% 2%	999 100 2% 969

For more details about a specific hour, click the column header for that hour. The Comm Statistics report (page 10-20) for that hour opens.

**Note** • Due to the width of this report, use legal-sized paper when you print it.

• Level of Service Links Report

### Level of Service Links Report

The Level of Service Links report is a set of graphs that show historical Volume, Occupancy, Speed, V+kO, and Level of Service data for a collection of detectors.

**Note** In order for Centracs to collect data for this report, you must turn on the Enable Logging option for the Link (refer to *Entity Configuration - Links* on page 3-54). If Enable Logging is turned off, you can only get Link data via the Real-time Link Status window (refer to page 6-45).

The top of the report shows the detectors included in the Link, and shows the current settings for Max Volume, Max Speed, Max V+kO, and the occupancy scaling factor (k). For details about these settings, refer to *Entity Configuration - Links* on page 3-54. Each page of the report holds one of these graphs: what is the point of showing the current settings? they might have been changed since the data was written

- Volume vs Time
- V+kO vs Time
- Occupancy vs Time
- Speed vs Time
- Level of Service vs Time

Scroll through the pages of the report to see the various graphs.

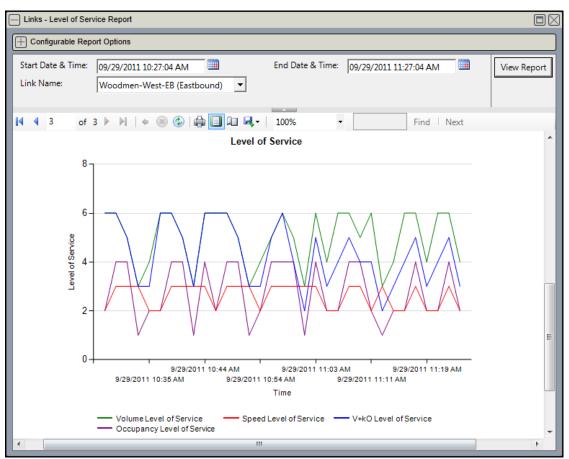
Level of Service Links Report •

Links - Level of Service Report	
Configurable Report Options	
Start Date & Time:       09/12/2011 2:44:05 PM         Link Name:       Woodmen-West-EB (Eastbound)	View Report
🕅 🖣 1 of 3 🕨 🔰   🗢 🛞 🕼 🔲 💷 🔍 💘 🕴 100% 🔹 👘 Find   Next	
Level of Service Link Report	^
Link: Woodmen-West-EB	
Description: Eastbound	
Detectors: Woodmen @ Chapel-1, Woodmen @ Chapel-2, Woodmen @ Chapel-4	
DefaultSettings	
Max Volume: 1000 Max V+k0: 1000 Max Speed: 45(mph) k Constant: 1	
Volume	
6000 (upp 4000 2000 2000	E
0 9/12/2011 2:46 PM 9/12/2011 2:50 PM	
Time	
	-

Volume vs Time

#### **Generating Reports**

• Level of Service Links Report



#### Level of Service vs Time

The Level of Service graph is a visual representation of the efficiency with which the roadway is serving traffic over time. The link levels defined in your Link Settings window are shown on the Y axis (the scale of this axis may vary depending on how many levels you have configured). Low levels indicate free-flowing traffic or no traffic; high levels indicate traffic congestion.

**Note** • The sample Level of Service graph shown above does not show realistic real-world data; it is used only to illustrate the different aspects of the graph.

#### **Raw Detector Data Report**

The Raw Detector Data report is a list of the raw vehicle data collected from polls to the signal controllers. This raw detector information is used to calculate volume, occupancy, speed, volume-to-capacity ratios, etc. You can filter the report data for specific dates, signals, and/or detectors.

Note • Signals from external Server-to-Server systems are not included in this report.

By default, the report shows up to 500 rows that match your selection criteria. If your database has a large quantity of raw detector data, select 250 from the "Row Limit" dropdown to increase the efficiency of the report. If necessary, you can also select a number larger than 500, or you can choose to show all data.

**Note** • The Detectors dropdown list contains only those detectors that are found in the detector log for your system. For example, a detector that is defined in your system but has never been active is not shown in the dropdown list.

If you want to include data from deleted detectors in the report, enable the "Include Deleted Detectors" option. Otherwise, deleted detectors are excluded.

Raw Detector Data								
+ Configurable Report Options								
Start Date & Time: 08/11/2011 Signal: Woodmen Row Limit: 500	9:58:08 AM @ Chapel (ASC/2	End Date & T	ïme: 08/12/2011 9:58:08 Al Woodmen @ Chapel					liew Report
Raw Detector		🔲 🔍 🔍 -   1009	% •	Find Nex	ĸt			•
Time Range: 8/11/2011 9:58:08 AM - 8/12/20								
Signal	Detector ID	Detector Name	Date/Time	Volume	Occupancy (%)	Polling Period (sec)	Valid	Status
Woodmen @ Chapel (ASC/2)	1	Woodmen @ Chapel-1	8/11/2011 10:59:00 AM	0	0%	60	Yes	ок
	1	Woodmen @ Chapel-1	8/11/2011 11:00:30 AM	14	7%	60	Yes	ок
	1	Woodmen @ Chapel-1	8/11/2011 11:01:30 AM	42	21.5%	60	Yes	ок
	1	Woodmen @ Chapel-1	8/11/2011 11:02:30 AM	55	27.5%	60	Yes	ок
	1	Woodmen @ Chapel-1	8/11/2011 11:03:30 AM	17	8%	60	Yes	ок
	1	Woodmen @ Chapel-1	8/11/2011 11:04:30 AM	15	7.5%	60	Yes	ок
	1	Woodmen @ Chapel-1	8/11/2011 11:05:30 AM	51	24.5%	60	Yes	ок
	1	Woodmen @ Chapel-1	8/11/2011 11:06:30 AM	15	8%	60	Yes	ОК
	1	Woodmen @ Chapel-1	8/11/2011 11:07:30 AM	32	15.5%	60	Yes	ок
۱ ۲	4	Woodmon @ Chanol 1	III	10	0 20/	60	Van	h i

The columns on this report are:

- Signal The signal to which this detector belongs.
- Detector ID The Controller Reference number for this detector. This is set in the Entity Configuration for the detector.
- Detector Name The name defined in Centracs for the detector entity.

Raw Detector Data Report

- **Date/Time** The date and time of the poll.
- Volume The number of vehicles detected since the last poll.
- Occupancy The percent of time that a vehicle was present. what time period is occa % of?
- **Polling Period** The time between polls (in seconds).
- Valid Shows whether the system considers the volume, occupancy, and speed data from this detector to be reliable (in the case of a detector fault, the system considers the data to be unreliable and does not include it in graphs/calculations).
- Status Shows any existing detector faults (otherwise, this column shows "OK").

Below the last row of data for a specific detector, the report shows a total of all the volume counts for that detector.

#### **Signal Changes Report**

The Signal Changes report is a log of all signal events that have occurred within a specified period of time. Examples of signal events include Phase Green, Overlap Green, Ped Walk, Pattern Change, Local Zero, etc.

**Note** • In order to run this report, your system must collect signal change data. To do so, turn on the "Signal Change Logging" action via the scheduler, a manual command, or an action set. (When this action is turned on, Centracs logs a large amount of extra data. For this reason, it is not meant to run indefinitely. Be sure to monitor the disk space on the server while logging is turned on.)

You can filter and sort the report by date, signal name, and signal change type. You can also filter by Entity State, which specifies whether to show only active signals, only deleted signals, or both in the Signal Name(s) dropdown.

By default, the report shows up to 500 rows that match your selection criteria. If your database has a large quantity of signal change data, select 250 from the "Row Limit" dropdown to increase the efficiency of the report. If necessary, you can also select a number larger than 500, or you can choose to show all data.

Signal Changes			
+ Configurable Report Opt	ions		
Entity State: Activ Event(s): Loca	ve 🔽 Sig al Zero, Pattern Change, V N   $\Leftrightarrow \otimes \oslash   \bigoplus [] \square \square$	d Date & Time: 01/31/2011 9:24:14 PM ynal Name(s): Woodmen @ N Academy (A w Limit: 500 100%  Find	d Next
Time Range:	0		
-	1/31/2011 9:24:14 PM	Event	Detail
Time Range: 1/31/2011 5:15:34 PM -	1/31/2011 9:24:14 PM Signal Name		Detail Pattern: 2
Time Range: 1/31/2011 5:15:34 PM - Date/Time	1/31/2011 9:24:14 PM	Event Pattern Change Phase Yellow	
Time Range: 1/31/2011 5:15:34 PM - Date/Time 1/31/2011 5:15:34 PM	1/31/2011 9:24:14 PM Signal Name Woodmen @ N Academy (ASC/3)	Pattern Change	Pattern: 2
Time Range: 1/31/2011 5:15:34 PM - Date/Time 1/31/2011 5:15:34 PM 1/31/2011 5:15:34 PM	1/31/2011 9:24:14 PM Signal Name Woodmen @ N Academy (ASC/3) Woodmen @ N Academy (ASC/3)	Pattern Change Phase Yellow	Pattern: 2 Phase #3
Time Range: 1/31/2011 5:15:34 PM - Date/Time 1/31/2011 5:15:34 PM 1/31/2011 5:15:34 PM 1/31/2011 5:15:34 PM	1/31/2011 9:24:14 PM Signal Name Woodmen @ N Academy (ASC/3) Woodmen @ N Academy (ASC/3) Woodmen @ N Academy (ASC/3)	Pattern Change Phase Yellow Phase Yellow	Pattern: 2 Phase #3 Phase #7
Time Range: 1/31/2011 5:15:34 PM - Date/Time 1/31/2011 5:15:34 PM 1/31/2011 5:15:34 PM 1/31/2011 5:15:34 PM 1/31/2011 5:15:34 PM	1/31/2011 9:24:14 PM Signal Name Woodmen @ N Academy (ASC/3) Woodmen @ N Academy (ASC/3) Woodmen @ N Academy (ASC/3) Woodmen @ N Union Blvd (ASC/3)	Pattern Change Phase Yellow Phase Yellow Phase Red	Pattern: 2 Phase #3 Phase #7 Phase #3
Time Range: 1/31/2011 5:15:34 PM - Date/Time 1/31/2011 5:15:34 PM 1/31/2011 5:15:34 PM 1/31/2011 5:15:34 PM 1/31/2011 5:15:34 PM 1/31/2011 5:15:34 PM	1/31/2011 9:24:14 PM Signal Name Woodmen @ N Academy (ASC/3) Woodmen @ N Academy (ASC/3) Woodmen @ N Academy (ASC/3) Woodmen @ N Union Blvd (ASC/3) Woodmen @ N Union Blvd (ASC/3)	Pattern Change Phase Yellow Phase Yellow Phase Red Phase Red	Pattern: 2 Phase #3 Phase #7 Phase #3 Phase #7
Time Range: 1/31/2011 5:15:34 PM - Date/Time 1/31/2011 5:15:34 PM 1/31/2011 5:15:34 PM 1/31/2011 5:15:34 PM 1/31/2011 5:15:34 PM 1/31/2011 5:15:35 PM	1/31/2011 9:24:14 PM Signal Name Woodmen @ N Academy (ASC/3) Woodmen @ N Academy (ASC/3) Woodmen @ N Academy (ASC/3) Woodmen @ N Union Blvd (ASC/3) Woodmen @ N Academy (ASC/3)	Pattern Change Phase Yellow Phase Yellow Phase Red Phase Red Phase Red	Pattern: 2 Phase #3 Phase #7 Phase #3 Phase #7 Phase #3
Time Range: 1/31/2011 5:15:34 PM - Date/Time 1/31/2011 5:15:34 PM 1/31/2011 5:15:34 PM 1/31/2011 5:15:34 PM 1/31/2011 5:15:34 PM 1/31/2011 5:15:35 PM 1/31/2011 5:15:35 PM	1/31/2011 9:24:14 PM Signal Name Woodmen @ N Academy (ASC/3) Woodmen @ N Academy (ASC/3) Woodmen @ N Academy (ASC/3) Woodmen @ N Union Blvd (ASC/3) Woodmen @ N Academy (ASC/3) Woodmen @ N Academy (ASC/3)	Pattern Change Phase Yellow Phase Yellow Phase Red Phase Red Phase Red Phase Red	Pattern: 2 Phase #3 Phase #7 Phase #7 Phase #7 Phase #3 Phase #7
Time Range: 1/31/2011 5:15:34 PM - Date/Time 1/31/2011 5:15:34 PM 1/31/2011 5:15:34 PM 1/31/2011 5:15:34 PM 1/31/2011 5:15:34 PM 1/31/2011 5:15:35 PM 1/31/2011 5:15:35 PM 1/31/2011 5:15:35 PM	1/31/2011 9:24:14 PM Signal Name Woodmen @ N Academy (ASC/3) Woodmen @ N Academy (ASC/3) Woodmen @ N Academy (ASC/3) Woodmen @ N Union Blvd (ASC/3) Woodmen @ N Academy (ASC/3) Woodmen @ N Academy (ASC/3) Woodmen @ N Academy (ASC/3) Woodmen @ N Union Blvd (ASC/3)	Pattern Change Phase Yellow Phase Yellow Phase Red Phase Red Phase Red Phase Red Phase Red Phase Green	Pattern: 2 Phase #3 Phase #7 Phase #7 Phase #3 Phase #3 Phase #7 Phase #7 Phase #4

Signal Detector Events Report

**Note** • The Event(s) dropdown list contains only those events that are found in the signal changes log for your system. For example, if no signals have changed patterns since the last time the signal changes log was purged, "Pattern Change" is not shown in the dropdown list.

### **Signal Detector Events Report**

The Signal Detector Events report is a historical list of detector-related faults (such as the Max Presence and No Activity faults for NTCIP controllers) during a specified time period.

You can filter the report by date, signal name, detector event type, and entity state. For the Entity State option, specify whether to show only active signals, only deleted signals, or both in the Signal Name dropdown.

**Note** • In order to run this report, you must first upload the logs from the signal controller(s). To do so, run the Upload Controller Logs action via the scheduler, a manual command, or an action set. (Because the Upload Controller Logs action is not supported for Eagle controllers, the report will not contain any data for Eagle controllers.)

<ul> <li>Signal Detector Events</li> </ul>								
Configurable Report C	Options							
Start Date & Time:	08/11/2011 9:51:57 AM	End Date & Ti	me: 08/12/2011 9:51:	57 AM			View Repo	rt
Entity State:	Active	Signal Name:	Eagle, Garden of	the Gods @	•			_
Signal Detector Events:	Erratic Counts, Erratic Count 💌							
	• N   + 🛞 🕲 🖨 🔲 💷 🖳	• 100%	• Find	Next			1	
	tector Events							-
Signal De								
Signal(s):								
Woodmen @ N Acade	emy (ASC/3 ), Woodmen @ N Union Bl	vd (ASC/3), Woo	dmen @ Powers (ASC/3)					
Time Range:								
8/11/2011 9:51:57 AM	- 8/12/2011 9:51:57 AM							
Date/Time	Signal Name	Detector ID	Detector Name	Туре	Phase	Phase Direction	Event	
8/11/2011 10:58:59 AM	Woodmen @ N Academy (ASC/3 )	1		Vehicle			Erratic Counts	Ξ
8/11/2011 10:59:19 AM	Woodmen @ N Union Blvd (ASC/3)	3	WB Woodmen @ N Union 3	Vehicle	6	East	No Activity	
8/11/2011 10:59:20 AM	Woodmen @ N Academy (ASC/3 )	2	SB Academy @ Woodmen (Southbound)	Vehicle	4	South	No Activity	
8/11/2011 11:00:47 AM	Woodmen @ N Academy (ASC/3 )	2	SB Academy @ Woodmen (Southbound)	Vehicle	4	South	No Activity Clear	
8/11/2011 5:05:16 PM	Woodmen @ N Academy (ASC/3 )	2		Vehicle	4	South		
	, ( , , , , , , , , , , , , , , , , , ,		SB Academy @ Woodmen (Southbound)			South	No Activity	-
8/11/2011 5:05:35 PM	Woodmen @ N Academy (ASC/3 )	2		Vehicle	4	South	No Activity	-

With the exception of Eagle controllers, this report includes faults for all other controller types (ASC/3, Cobalt, W4, Oasis, etc.)

Signal Detector Events Report

For each fault, the Type column shows one of these detector types:

- Vehicle
- Pedestrian
- Not reported (this is shown for detectors that are not defined in the Entity Tree)

You can sort the report by any column.

**Note** • To see *current* detector faults for ASC/3, ASC/2, and Cobalt controllers, use the Detector Fault Status window (page 6-48) or the Detector Fault Status report (page 10-22).

Oasis: e.g. Detector status failed cause of high occupancy, Detector status failed cause of too few calls, and Detector status failed cause of too many calls-

W4: e.g. Detector High Volume Error, Detector Low Volume Error, No Error

ASC3: Max Presence, No Activity, Erratic Counts (are there others?)

Signal Events Report

# **Signal Events Report**

The Signal Events report is a historical list of controller-related events and errors (such as Local Flash Active and Cycle Fault) during a specified time period.

**Note** In order to run this report, you must first upload the logs from the signal controller(s). To do so, run the Upload Controller Logs action via the scheduler, a manual command, or an action set. (Because the Upload Controller Logs action is not supported for Eagle controllers, the report will not contain any data for Eagle controllers.)

You can filter and sort the report by date, signal name, and signal event type. You can also filter by Entity State, which specifies whether to show only active signals, only deleted signals, or both in the Signal Name dropdown.

By default, the report shows up to 500 rows that match your selection criteria. If your database has a large quantity of signal event data, select 250 from the "Row Limit" dropdown to increase the efficiency of the report. If necessary, you can also select a number larger than 500, or you can choose to show all data.

Signal Events					
Configurable Report Options	3				
Entity State: Active	•	End: Signal Name: Row Limit:	02/10/2011 5:47:29 PM Woodmen @ Austin Bluffs ( 500	<b>.</b>	View Report
≪ 1 of 1 ▶ ▶	+ 🛞 🚱   🖨 🔲	Al A. 100	% •	Find Next	
Signal Even					*
Signal(s):					
Woodmen @ Austin Bluffs	(ASC/3), Woodmen @ Ch	apel (ASC/2), W	/oodmen @ IH25 W (ASC/3),	Woodmen @ N Acad	emy (ASC/3)
Time Range:					=
2/10/2011 4:47:29 PM - 2/10	)/2011 5:47:29 PM				
Date/Time	Signal Name	Ev	ent	Details	
2/10/2011 04:51:53.8	Woodmen @ N Academy (A	SC/3) Po	wer On		
2/10/2011 04:51:53.8	Woodmen @ N Academy (A	SC/3) Ba	ttery Low		
2/10/2011 04:51:53.8	Woodmen @ N Academy (A	SC/3) Of	fline		
2/10/2011 04:51:53.8	Woodmen @ N Academy (A	SC/3) Po	wer On Flash Active		
2/10/2011 04:51:55.2	Woodmen @ N Academy (A	SC/3) Co	ord Local Free		
2/10/2011 04:51:55.2	Woodmen @ N Academy (A	SC/3) On	line		
2/10/2011 04:51:55.2	Woodmen @ N Academy (A	SC/3) Por	wer On Flash Inactive		
2/10/2011 04:52:00.2	Woodmen @ N Academy (A	SC/3) Co	ordination Active		
2/10/2011 04:52:19.5	Woodmen @ Austin Bluffs (	(ASC/3) Po	wer On		
•	•				•

**Note** • For Oasis controllers, this report contains data from the COORD PLANS, FUNCTIONS, ALARMS, and EVENTS logs on the controller.

Signal Events Report •

explain event types; diff betw power up and power on events? power down and power off? Henry already gave me answer; how does Comm Fail event relate to Centracs Comm Fail?

For selected event types, the Details column contains more information. For example, for preempt and alarm events, the Details column shows the preempt or alarm number reported by the controller; for Oasis plan changes and function changes, it shows the source of the change, the new plan or function, etc.

Signal MMU Events Report

### **Signal MMU Events Report**

This report contains information about events reported by the MMU (Malfunction Management Unit) for one or more signals. The date and time of the event(s) is shown at the top of the report.

If the event is a phase conflict (as shown below), The Red/Yellow/Green rows show the current state of each phase at the time of the event. In this example, the MMU detected a conflict because phases 1, 2, 5, and 6 cannot all be green at the same time. IS THIS RIGHT? IS TOP SECTION WORKING RIGHT?

You can filter the report by date, signal name, and entity state. For the Entity State option, specify whether to show only active signals, only deleted signals, or both in the Signal(s) dropdown.

**Note** In order to run this report, you must first upload the logs from the signal controller(s). To do so, run the Upload Controller Logs action via the scheduler, a manual command, or an action set. (Because the Upload Controller Logs action is not supported for Eagle controllers, the report will not contain any data for Eagle controllers.)

Signal MMU Events	
Configurable Report Options	
2/11/2011 7.51.50 AM	ad Date & Time: 2/12/2011 7:51:56 PM III View Report gnal(s): Woodmen @ N Academy
🗄 📴 🛐   🕅 🔌 1 🛛 of 1 🕨 🕅   🗢 🔕 🛃   🚑 🚺	□ □ □ · 100% • Find   Next
Signal MMU Events	
Signal: Woodmen @ N Academy	Date/Time: 2/11/2011 12:42:24 PM
Channel 1 2 3 4 5 6 7	8 9 10 11 12 13 14 15 16
Red · · X X · · X	X
Yellow	
Green XXXX.	
Output Relay Failure	Conflict X
Controller Voltage Monitor	Red Failure
+24V Mon I	Diagnostic Failure X
+24V Mon II	Min Clearance Failure
+24V Mon Inhibit	Port 1 Timeout
Reset	Start Up Flash
Red Enable	Local Flash
•	4

The event types are (in alphabetical order):

- +24V Mon 1 A voltage of less than 20 volts DC (nominal) is detected at the +24V I input. Two +24 volt DC inputs are monitored for ensuring adequate supply voltage in the controller assembly. If the voltage at either input falls below 18 volts DC, the output relay transfers to the fault state for the duration of the low voltage condition.
   24 Volt I & II faults are not latched; therefore, when the voltage at both inputs goes back to the nominal value, the output relay goes back to the non-fault state. A reset is NOT required to go back to normal monitoring.
- The +24V MONITOR I and +24V MONITOR II inputs are provided for monitoring two-+24Vdc supplies in the cabinet assembly. Should loss of proper voltage occur at either of these inputs, the MMU 16E will enter the fault mode, transfer the OUTPUT relaycontacts to the Fault position, and illuminate the appropriate 24V 1 or 24V 2 indicator.

Signal MMU Events Report

The MMU-16E will automatically reset the OUTPUT relay when the correct inputvoltages are restored to both of these inputs. But the MMU-16E will stay in the faultmode for at least the time determined by the Minimum Flash programming........ Avoltage higher than +22 volts DC applied to both of the +24V MONITOR inputs will besensed by the MMU-16E as adequate for operation of the cabinet assembly. A voltage less than +18 volts DC applied to either of the +24V MONITOR inputs will be sensed asinadequate for proper operation. When a +24V MONITOR input is sensed asinadequate for more than 175 msec, the MMU-16E will enter the fault mode andtransfer the OUTPUT relay contacts to the Fault position. When a +24V MONITORinput is sensed as inadequate for less than 125 msec, the MMU-16E will not transferthe OUTPUT relay contacts to the Fault position. A +24Vdc failure during theprogrammed Minimum Flash time or during an MMU-Power Failure will not cause a fault condition.

- +24V Mon II A voltage of less than 20 volts DC (nominal) is detected at the +24V IIinput. (Econolite: less than +18VDC as measured by the MMU).....
- +24V Mon Inh -+24 Volt DC monitoring may be disabled by placing a logic true voltage at the 24 Volt Monitor Inhibit input. A logic true voltage is a level less than 8 VDC. A voltage of more than 16 VDC at the 24 Volt Monitor Inhibit input, or if the input is left unconnected, enables monitoring at the +24 VDC I and II inputs. (Econo: The +24 VDC Monitor Inhibit input to the MMU is active).....+24Vdc Monitor Inhibit Input -A +24V MONITOR INHIBIT input is provided to inhibit the operation of the +24Vdc Monitor. Application of a logic TRUE (low) state to this input will disable the operation of the +24Vdc Monitor. The 24V-1 and 24V-2 indicators will flash one time every 2seconds if the +24V MONITOR INHIBIT input is TRUE.
- Conflict (Econolite: The MMU senses two or more signals in conflict)Green, Walk, or Yellow indications were detected on conflicting channels. A conflict occurs when two channels which are not permitted to be active at the same time become so. Two channels that are permitted to be active at the same time are called compatible or permissive. Channels not permitted together are termed conflicting. Permissive channels are programmed in pairs by installing jumpers in the programming card. If there are no jumpers installed, each channel conflicts with all others.......A conflict occurs when conflicting channels are active together for 450 milliseconds or longer. If the conflicting channels are active for shorter than 200 milliseconds, noconflict occurs. When a conflict is detected and the output relay transfers, the faultcondition continues (or is "latched") until the NM512 is reset. A fault may be resetmanually by pressing the reset button or reset electrically by cycling the Reset input. A conflict fault is latched; therefore, it is NOT cleared by cycling power. Only a resetwill clear a conflict fault.

Signal MMU Events Report •

CONTROLLER UNIT VOLTAGE MONITOR (CVM) or FAULT MONITOR (FM) output from the Controller Unit. When the TRUE (low) state is absent for more than 175 msec, the MMU-16E will enter the fault mode, transfer the OUTPUT relay contacts to the Faultposition, and illuminate the CVM/WATCHDOG indicator. When a the TRUE (low) state is absent for less than 125 msec, the MMU-16E will not transfer the OUTPUT relay contacts to the Fault position. The MMU-16E will automatically reset the OUTPUT relay when the True (low) state is restored to the input. But the MMU-16E will stay in the fault mode for at least the time determined by the Minimum Flash programming. A CVM failure during the programmed Minimum Flash time or during an MMU

- Diag Failure The DIAGNOSTIC indicator will illuminate when the MMU-16E hasdetected an internal diagnostic failure. Due to the nature of these hardware/firmwarefailures, other indicators that may also be shown may not be valid for trouble shooting. purposes. Refer to Section 2.8. If a Type Fault is detected the DIAGNOSTIC indicator will be illuminated and the TYPE 12 indicator will flash at a rate of 2Hz. Refer to Section 3.10. The MMU-16E is supplied with a resident series of self check diagnosticcapabilities which monitor for correct operation of the MMU-16E both at power-upand continuously during operation. Should an internal diagnostic error occur, otherfault indicators that may be shown at the same time as the DIAGNOSTIC indicator may not be valid due to the nature of these hardware and/or firmware failures. On powerup. the MMU-16E verifies the operation of all memory components including RAM, EPROM, and nonvolatile EEPROM. During operation the MMU-16E continuously does a check sum verification of the nonvolatile memory components at 3.8K bytes persecond. When either diagnostic test fails, the MMU-16E will enter the fault mode,transfer the OUTPUT relay contacts to the Fault position, and illuminate the DIAGNOSTIC indicator. An MMU Power Failure will reset the Diagnostic fault state of the monitor (refer to Section 2.6). Due to the nature of these hardware/firmwarefailures, other fault indicators that may be shown at the same time as the DIAGNOSTIC indicator may not be valid.
- Fail-Out Rly the output relay is in a fault state.??
- Local Flash the local/cabinet flash input on the MMU is TRUE.
- Min Clear Failure The RED ENABLE input, when activated, enables the Red Fail-Monitoring functions of the unit causing the monitor to trigger when it detects the absence of voltage on all three (four) of the field signal inputs of a channel. It also enables the Minimum Yellow Change/Red Clearance Monitoring function whichverifies that the Yellow Change plus Red Clearance interval between the end of anactive Green signal and the start of the next conflicting Green signal is proper. The MMU-16E will verify that the Yellow Change interval is at least 2.7 \_+0.1 seconds. The Yellow Change interval is the duration of time in which the Yellow field signal input is active in a sequence from Green to Yellow to Red. When this minimum interval is not satisfied the MMU-16E will enter the fault mode, transfer the OUTPUT relay contactsto the Fault position, and illuminate the CLEARANCE FAIL indicator. The MMU-16E will-

Signal MMU Events Report

stay in the fault mode until the unit is reset by the RESET button or the EXTERNAL RESET input. \*\*\*\*The CLEARANCE FAIL indicator will be illuminated when a Minimum-Yellow Change Fault is detected

- Port 1 Timeout When operating in the Type 16 mode and connected to a TS2-Controller Unit, the MMU-16E has the ability to exchange information in astandardized format with the Controller Unit using Port 1. For details about messageformats, refer to Section 3.3.1, NEMA Traffic Controller Assemblies Standards-Publication TS2-1998. The information transmitted from the Controller Unit to the MMU-16E contains these message types: load switch driver commands (Type 0), timeand date (Type 9). The information transmitted from the MMU-16E to the Controller-Unit contains these message types: field signal status and fault status (Type 129), channel compatibility programming (Type 131). The load switch driver command-(Type 0) and field signal status (Type 129) messages are exchanged approximatelyevery 100 msec...... The electrical interface used for Port 1 conforms to the requirements of the Electronic Industries Association EIA-485 Standard. It is designedfor balanced digital multipoint bus systems and provides fully differential signaloperation. The baud rate used is 153.6K bit per second. The Port 1 connector intermates with a 15 pin D type connector, AMP Incorporated part number 205206-1 or equivalent. The Port 1 connector pin assignments are shown in Section 8.4, 8.5. The data and clock communications protocol used for Port 1 is a subset of the Synchronous Data Link Control (SDLC) Protocol, as specified by International Business Machines-Corporation Document GA27-3093-3 (June 1986). This protocol uses sophisticatederror checking computations to verify message integrity. In addition, the Eberle Design MMU-16E adds enhanced communications diagnostics and error handling capabilities to make sure proper communications occur......Port 1 Timeout - Whena Type 0 message from the Controller Unit has not been correctly received for 300msec, the MMU-16E will enter the fault mode, transfer the OUTPUT relay contacts tothe Fault position, and illuminate the PORT 1 FAIL indicator. When receipt of a Type 0message again occurs, the MMU-16E will exit the fault state and transfer the OUTPUT relay contacts to the normal position, except when three Port 1 faults have occurred in a calendar day. After the third Port 1 fault in a calendar day, the MMU-16E will stayin the fault mode until the unit is reset by the RESET button or the EXTERNAL RESET input. Loss of AC Line after the third Port 1 fault will exit the fault state and reset the Port 1 fail count to 2. A PORT 1 timeout failure during the programmed Minimum Flash time or during an MMU Power Failure will not cause a latched fault condition.
- Red Enable (Econo: The red enable input to the MMU is active) The presence of the proper operating voltage at this input enables Red Fail Monitoring, Minimum Yellow-Change/Red Clearance Monitoring, and Dual Indication Monitoring.
- Red Failure (Econolite: One or more channels do not show a green or yellow or red as sensed by the MMU) No inputs were active on at least one channel. The NM512 is capable of monitoring channels for the absence of voltage on all four inputs of a channel. This feature is enabled by AC voltage being present on the RED ENABLE input. If there are no active inputs on any channel for 1000 milliseconds and the RED ENABLE input is active, the monitor recognizes a red failure fault. Red failure is a latched fault; it causes the output relay to transfer and must be reset to restore normal monitoring..... When voltages on all inputs (G, Y, R, (W)) to a channel are sensed as

Signal MMU Events Report

inactive for more than 1000 msec, the MMU-16E will enter the fault mode, transferthe OUTPUT relay contacts to the Fault position, and illuminate the RED FAIL indicator. The MMU-16E will stay in the fault mode until the unit is reset by the RESET button orthe EXTERNAL RESET input. When voltages on all inputs to a channel are sensed asinactive for less than 700 msec, the MMU-16E will not transfer the OUTPUT relaycontacts to the Fault position. Red Fail Monitoring will be disabled when the RED-ENABLE input is not active. In the Type 16 mode, Red Fail Monitoring will also bedisabled if the PORT 1 DISABLE input is False (high) and the LOAD SWITCH FLASH bit is set to "1" in the Type 0 message from the Controller Unit......The RED FAILindicator will flash one time every 2 seconds if the RED ENABLE input is not active, orin the Type 16 mode, if the LOAD SWITCH FLASH bit is set to "1" in the Type 0 message from the Controller Unit.

- Reset reset input has been activated???
- Start Up Flash min. flash time after startup was exceeded??? the output relay is held in the "fault" or non-operating state for a short period after AC power is applied to the monitor. This period is called the minimum flash delay and it is user programmable

Signal Upload and Compare Report

# Signal Upload and Compare Report

The Signal Upload and Compare report shows the outcome of all "Signal Upload and Compare" actions during a specified time period. The "Signal Upload and Compare" action compares the current settings on a controller with the current settings stored in the Centracs database for that controller. To resolve any differences found, you can upload the settings from the controller and save them to the Centracs database, or download the Centracs settings to the controller — whichever is appropriate. The "Signal Upload and Compare" action is run via a manual command, schedule entry, or action set.

#### **Note** • This feature of Centracs is not supported for Eagle EPAC or Tek-TS controllers.

You can filter the report by date/time range, entity type, entity name, entity state, and the result of the comparison (Difference Found, No Difference, etc.). For the Entity State option, specify whether to show only active entities, only deleted entities, or both in the Entity Name(s) dropdown.

— Signal Upload and Con	npare				
Configurable Report	Options				
Start Date & Time: 08	8/12/2011 9:53:34 AM	End Date & Ti	ime: 08/12/2011 10:53:34 AM	v 🛄	View Report
Entity Type(s): G	roup, Section, Signal, Subs	Entity State:	Active 💌		
Entity Name(s):	olorado Springs, Conventi	Results		<b>-</b>	
	olorado springs, conventi		1		
≪ 4 1 of 1	) N   4 🛞 🚱   🖨	100%	•	Find Next	
Signal Ur	load and (	Comparo			•
Signal Op		Joinpare			
Time Range:					
5	04010044 40 50 04				=
8/12/2011 9:53:34 AI	M - 8/12/2011 10:53:34 /	АМ			
Date/Time	Entity Name	Description	Result	Segment Differenc	es 📃
8/12/2011 10:44:03 AM	Colorado Springs		Request		
8/12/2011 10:44:12 AM	Garden of the Gods @ 25	W4	STMP Not Configured		
8/12/2011 10:44:12 AM	Woodmen @ Powers	ASC/3	No Difference		
8/12/2011 10:44:12 AM	Woodmen @ Chapel	ASC/2	No Difference		
8/12/2011 10:44:12 AM	Woodmen @ IH25 W	ASC/2	No Difference		
8/12/2011 10:44:12 AM	Woodmen @ N Academy	ASC/3	No Difference		
8/12/2011 10:44:12 AM	Woodmen @ Austin Bluffs	ASC/3	Difference Found	Phase Timing, Overla	p, TSP
8/12/2011 10:44:12 AM	Woodmen @ Rockrimmon	ASC/3	Difference Found	Coordinator, Sequence	e, Time Base
8/12/2011 10:44:12 AM	Woodmen @ N Union Blvd	ASC/3	Difference Found	Coordinator	
8/12/2011 10:44:12 AM	Woodmen @ Rangewood	Oasis	No Difference		
•					+

You can sort the report by any column.

Signal Upload and Compare Report

The columns on this report are:

- **Date/Time** The date and time the "Signal Upload and Compare" action ran.
- Entity Name The name assigned to the signal in the Entity Configuration window.
- Description The description assigned to the signal in the Entity Configuration window.
- Result Information about the success or failure of the "Signal Upload and Compare" action. For example, Difference Found means that discrepancies were found between Centracs and the controller; No Difference means that no discrepancies were found; results such as STMP Not Configured, STMP Bad Packet, and Comm Server Timeout indicate a communication problem between Centracs and the controller.

The report also includes a *Request* row for each entity that was specified in the "Signal Upload and Compare" action — i.e., a row with a Result value of *Request*. This row tells you when the action was requested. If you ran the action for a collection of signals, such as a Section, the report would list one *Request* row for the Section name, and then one result row for each signal in the Section. If you ran the action for three individual signals, the report would list three *Request* rows and three result rows. In the example above, the action ran for the "Colorado Springs" System, so there is only one *Request* row. This demo System contains nine signals, so there are nine result rows.

Note that it may take a bit of time for the results to be gathered. In the example above, the action was requested at 10:44:03AM, and the results were completed after approximately 10 seconds.

Segment Differences – A list of any segments in which differences were found between the current settings on the controller and the current settings stored in Centracs for the controller. For details about which settings are contained in each segment for ASC/3 and Cobalt controllers, refer to ASC/3 and Cobalt Controller Segments on page A-8. Split Monitor Report

#### **Split Monitor Report**

The Split Monitor report is divided into three sections. For a specified signal, pattern, and time period:

- The first section contains summary information, such as the number of cycles that occurred during this time period, the programmed cycle length, the average of the actual cycle lengths, and the minimum and maximum cycle lengths during this time period.
- The second section contains bar graphs that show the programmed and actual phase times.
- The third section contains a detailed list of the actual splits, programmed splits, actual cycle length, and programmed cycle length for each cycle and phase during the selected time period. This section is optional, and can be turned on or off with the "Show Split Table" option. (Note that if you turn this option on, report generation may be slower, and the report may be very long.)

For more information about the Split Monitor feature of Centracs, and for a description of each field on the summary page, refer to *Using Split Monitor* on page 6-26.

In order to run this report, your system must collect split monitor data. (To do so, turn on the "Split Monitor Logging" action via the scheduler, a manual command, or an action set.) The Signal Name dropdown shows only the signals for which split monitor data exists in Centracs. If there are no signals with data, the messages below are displayed in the dropdowns:

~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	┍╌ <b>┦</b> ┟╱┍┶╌╱╲╲╱╌╱╼┦ <sup>┝</sup> ╲┍┶┶╱╾╲┡╲╱╌╱╌ <sub>╲</sub> ┻╲╱	~^~~	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	····································
Signal Name:	No Split Monitor Signals Available 💌	Coordinator Pattern:	No Coord Patterns Available 💌	
L		······································	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	

**Note** • The Coordinator Pattern dropdown list includes only the patterns available for the selected controller.

#### **Generating Reports**

Split Monitor Report •

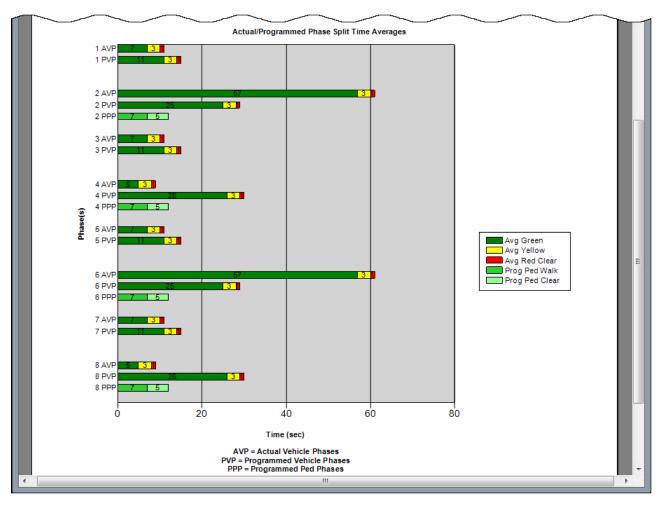
Sample of report section 1:

Split Monitor			
Configurable Report Options			
Start Date & 02/06/2011 8:25:55 PM Time:		End Date & 02/12/2011 9:25:55 Time:	5 PM
Signal Name: Woodmen @ N Union Blvd	(ASC/3)	Coordinator 1 Pattern:	•
Show Split Table: ⓒ True 〇 False		Pattern.	
I of 141 I Split Monitor Signal Name: Woodme	n @ N Union Blvd (A SC/3)	Find   Next	Â.
Cycle Length Programmed: 90 sec Actual Average: 95.44 sec Minimum: 31 sec Maximum: 240 sec	•	tern Lern Show n: 1 2/12/2011 9:25:55 PM	
	III		4

The values in the Cycle Length section are in seconds. The Duration Viewed value is shown in days, hours, minutes, and seconds (DD.HH:MM:SS).

**Note** • For Oasis controllers, in the Coordinator Pattern dropdown list and in the Pattern Shown field, the offset is shown after the pattern number. For example, '63-2' indicates pattern 63 and an offset of 2.

Split Monitor Report



Sample of report section 2:

For each phase, two or three bars are shown:

- The first bar represents the Actual Vehicle Phases (AVP) average. This is an average of the actual cycle lengths and the splits (green, yellow, and red clear) for all cycles included in the analysis. The values are shown in seconds. The numbers shown in each bar are the average green, yellow, and red times (in seconds) for that phase.
- The second bar represents the Programmed Vehicle Phases (PVP) average. This shows the programmed splits for the pattern (min green, green, yellow, and red clear), in seconds. If multiple patterns are included in the report, the programmed splits are averaged. The entire length of the bar (including min green, green, yellow, and red clear) shows the overall split length that is configured in the controller for this phase. The numbers shown in each bar are the green, yellow, and red times (in seconds) configured for that phase.
- The third bar, if shown, represents the Programmed Pedestrian Phases. This is the programmed Ped Walk (darker green) and Ped Clear (lighter green) times for the pattern, in seconds. If multiple patterns are included in the report, the programmed-times are averaged.

Split Monitor Report •

#### Sample of report section 3:

Actual/Programmed	Split Values																
Date/Time	1	2	3	4	5	6	7	8	9	10	-11	12	13	14	15	16	Cycle
2/6/2011 8:27:05 PM	10/15	70/30	10/15	9/30	10/15	70/30	10/15	9/30									99/90
2/6/2011 8:28:44 PM	10/15	69/30	9/15	11/30	10/15	69/30	9/15	11/30									98/90
2/6/2011 8:30:22 PM	10/15	70/30	10/15	9/30	10/15	70/30	10/15	9/30									99/90
	Lieur	00.00	0.00		1.000	00.00		1100		1		1	1	1	1	1	00100

Each row in the table represents one cycle. Columns 1-16 represent the phases for that cycle. Under each phase, the table shows the actual split for that cycle compared to the programmed split. The last column shows the actual and programmed cycle lengths.

In the first row of the example shown above, the programmed split for phase 2 was 30 seconds, but the actual split was 70 seconds for this particular cycle. The programmed cycle length was 90 seconds, but the actual was 99 seconds.

You can sort this table in ascending or descending chronological order by clicking on the Date/Time column header.

System Activity Report

# **System Activity Report**

The System Activity report is an audit trail of all the user activity in the Centracs application. You can filter the data by date/time range, by entity type, and by user ID. Optionally, you can also specify which types of actions and operations to include in the report. You can sort the report by any column (by default, the information is sorted by date/time).

If you only want to see data for one or more specific signals, set the "Use Signal Filter" option to Yes, then select the signal(s) from the Signals dropdown list.

**Note** • The Activity dropdown list contains only those activities that are found in the audit logs for your system. For example, if no entities have been deleted from your system since the last time the audit logs were purged, "Deleted Entity" is not shown in the dropdown list.

When you run this report, you must select at least one item from the Activity list. You can use the (Select All) option as a toggle to turn all options on and off.

System Activity					
+ Configurable Report O	ptions				
Start Date & Time: 12/	/21/2010 3:07:11 PM	End Date	e & Time: 12/23/2010 3:07:11 PM		View Repor
		Circular,			- Hen Report
Use Signal Filter: No	· ·	Signals:	Old Bitty Ln @ Olaf Way, N	€ ▼	
Jser Login: CD	OTR6, Econolite, Falco	Entity Ty	/pe: Aries, CCTV, Centracs, DMS	•	
			J		
Activity. Ac	tion Set, Added Applic	tati 💌			
		🌐 💷 🔍 -	100% • Fi	nd Next	
System A	ourrey				
Time Range:					
5					
010410040 0 07 44 D	M 42/20/2040 2:07	-11 DM			
2/21/2010 3:07:11 P	WI - 12/29/2010 3:07				
2/21/2010 3:07:11 P	WI - 12/29/2010 3:07				
	User Login	Entity Type	Entity	Activity	Details
)ate/Time			Entity Woodmen @ Chapel (ASC/2)	Activity Get Time	Details
0ate/Time 2/21/2010 3:09:31 PM	User Login	Entity Type		-	Details
ate/Time 2/21/2010 3:09:31 PM 2/21/2010 3:10:06 PM	User Login System	Entity Type Signal	Woodmen @ Chapel (ASC/2)	Get Time	Details
0ate/Time 2/21/2010 3:09:31 PM 2/21/2010 3:10:06 PM 2/21/2010 3:10:06 PM	User Login System System	Entity Type Signal Signal	Woodmen @ Chapel (ASC/2) Woodmen @ Chapel (ASC/2)	Get Time Assert Phase Call	Details EB Woodmen @ Academy
Date/Time 2/21/2010 3:09:31 PM 2/21/2010 3:10:06 PM 2/21/2010 3:10:06 PM 2/21/2010 3:25:27 PM	User Login System System System	Entity Type Signal Signal Signal	Woodmen @ Chapel (ASC/2) Woodmen @ Chapel (ASC/2) Woodmen @ Chapel (ASC/2)	Get Time Assert Phase Call Assert Ped Call	
Late/Time 2/21/2010 3:09:31 PM 2/21/2010 3:10:06 PM 2/21/2010 3:10:06 PM 2/21/2010 3:25:27 PM 2/21/2010 4:49:08 PM	User Login System System System Econolite	Entity Type Signal Signal Signal Vehicle Detectors	Woodmen @ Chapel (ASC/2) Woodmen @ Chapel (ASC/2) Woodmen @ Chapel (ASC/2) EB Woodmen @ Academy (Eastbound)	Get Time Assert Phase Call Assert Ped Call Edited Entity	
Date/Time 2/21/2010 3:09:31 PM 2/21/2010 3:10:06 PM 2/21/2010 3:10:06 PM 2/21/2010 3:25:27 PM 2/21/2010 4:49:08 PM 2/21/2010 4:49:11 PM	User Login System System System Econolite System	Entity Type Signal Signal Signal Vehicle Detectors Signal	Woodmen @ Chapel (ASC/2) Woodmen @ Chapel (ASC/2) Woodmen @ Chapel (ASC/2) EB Woodmen @ Academy (Eastbound) Woodmen @ N Union Blvd (ASC/3)	Get Time Assert Phase Call Assert Ped Call Edited Entity Get Time	
Date/Time 12/21/2010 3:09:31 PM 12/21/2010 3:10:06 PM 12/21/2010 3:10:06 PM 12/21/2010 3:25:27 PM 12/21/2010 4:49:08 PM 12/21/2010 4:49:11 PM 12/21/2010 4:49:11 PM	User Login System System System Econolite System System	Entity Type Signal Signal Signal Vehicle Detectors Signal Signal	Woodmen @ Chapel (ASC/2) Woodmen @ Chapel (ASC/2) Woodmen @ Chapel (ASC/2) EB Woodmen @ Academy (Eastbound) Woodmen @ N Union Blvd (ASC/3) Woodmen @ N Union Blvd (ASC/3)	Get Time Assert Phase Call Assert Ped Call Edited Entity Get Time Assert Phase Call	
Date/Time 12/21/2010 3:09:31 PM 12/21/2010 3:10:06 PM 12/21/2010 3:10:06 PM 12/21/2010 3:25:27 PM 12/21/2010 4:49:08 PM 12/21/2010 4:49:01 PM 12/21/2010 4:49:11 PM 12/21/2010 4:49:11 PM 12/22/2010 10:40:13 AM	User Login System System System Econolite System System System	Entity Type Signal Signal Signal Vehicle Detectors Signal Signal Signal	Woodmen @ Chapel (ASC/2) Woodmen @ Chapel (ASC/2) Woodmen @ Chapel (ASC/2) EB Woodmen @ Academy (Eastbound) Woodmen @ N Union Blvd (ASC/3) Woodmen @ N Union Blvd (ASC/3)	Get Time Assert Phase Call Assert Ped Call Edited Entity Get Time Assert Phase Call Assert Ped Call	EB Woodmen @ Academy
Date/Time 12/21/2010 3:09:31 PM 12/21/2010 3:10:06 PM 12/21/2010 3:10:06 PM 12/21/2010 3:25:27 PM 12/21/2010 4:49:08 PM 12/21/2010 4:49:11 PM 12/21/2010 4:49:11 PM 12/22/2010 10:40:13 AM 12/22/2010 10:42:17 AM	User Login System System System Econolite System System System Econolite	Entity Type Signal Signal Signal Vehicle Detectors Signal Signal Signal Centracs	Woodmen @ Chapel (ASC/2) Woodmen @ Chapel (ASC/2) Woodmen @ Chapel (ASC/2) EB Woodmen @ Academy (Eastbound) Woodmen @ N Union Blvd (ASC/3) Woodmen @ N Union Blvd (ASC/3)	Get Time Assert Phase Call Assert Ped Call Edited Entity Get Time Assert Phase Call Assert Ped Call Added User Role	EB Woodmen @ Academy
12/21/2010 3:07:11 P Date/Time 12/21/2010 3:09:31 PM 12/21/2010 3:10:06 PM 12/21/2010 3:10:06 PM 12/21/2010 3:25:27 PM 12/21/2010 4:49:08 PM 12/21/2010 4:49:11 PM 12/21/2010 4:49:11 PM 12/22/2010 10:40:13 AM 12/22/2010 10:42:31 AM 12/22/2010 10:46:54 AM	User Login System System System Econolite System System System Econolite Econolite	Entity Type Signal Signal Signal Vehicle Detectors Signal Signal Signal Centracs Centracs	Woodmen @ Chapel (ASC/2) Woodmen @ Chapel (ASC/2) Woodmen @ Chapel (ASC/2) EB Woodmen @ Academy (Eastbound) Woodmen @ N Union Blvd (ASC/3) Woodmen @ N Union Blvd (ASC/3)	Get Time Assert Phase Call Assert Ped Call Edited Entity Get Time Assert Phase Call Assert Ped Call Added User Role Edited User Role	EB Woodmen @ Academy C2C Administrator C2C Administrator-Fountain
Date/Time 12/21/2010 3:09:31 PM 12/21/2010 3:10:06 PM 12/21/2010 3:10:06 PM 12/21/2010 3:25:27 PM 12/21/2010 4:49:08 PM 12/21/2010 4:49:11 PM 12/21/2010 4:49:11 PM 12/22/2010 10:40:13 AM 12/22/2010 10:42:17 AM 12/22/2010 10:42:31 AM	User Login System System System Econolite System System Econolite Econolite Econolite	Entity Type Signal Signal Signal Vehicle Detectors Signal Signal Signal Centracs Centracs Centracs	Woodmen @ Chapel (ASC/2) Woodmen @ Chapel (ASC/2) Woodmen @ Chapel (ASC/2) EB Woodmen @ Academy (Eastbound) Woodmen @ N Union Blvd (ASC/3) Woodmen @ N Union Blvd (ASC/3)	Get Time Assert Phase Call Assert Ped Call Edited Entity Get Time Assert Phase Call Assert Ped Call Added User Role Edited User Role Added User Role	EB Woodmen @ Academy EB Woodmen @ Academy C2C Administrator C2C Administrator-Fountain C2C Administrator-Falcon
Date/Time 12/21/2010 3:09:31 PM 12/21/2010 3:10:06 PM 12/21/2010 3:10:06 PM 12/21/2010 3:25:27 PM 12/21/2010 4:49:08 PM 12/21/2010 4:49:11 PM 12/21/2010 4:49:11 PM 12/22/2010 10:40:13 AM 12/22/2010 10:42:31 AM 12/22/2010 10:42:31 AM 12/22/2010 10:46:54 AM	User Login System System Econolite System System System Econolite Econolite Econolite Econolite	Entity Type Signal Signal Signal Vehicle Detectors Signal Signal Signal Centracs Centracs Centracs Centracs Centracs	Woodmen @ Chapel (ASC/2) Woodmen @ Chapel (ASC/2) Woodmen @ Chapel (ASC/2) EB Woodmen @ Academy (Eastbound) Woodmen @ N Union Blvd (ASC/3) Woodmen @ N Union Blvd (ASC/3)	Get Time Assert Phase Call Assert Ped Call Edited Entity Get Time Assert Phase Call Assert Ped Call Added User Role Edited User Role Added User Role Added User	EB Woodmen @ Academy EB Woodmen @ Academy C2C Administrator C2C Administrator-Fountain C2C Administrator-Falcon Falcon, CO
Date/Time [2/21/2010 3:09:31 PM [2/21/2010 3:10:06 PM [2/21/2010 3:10:06 PM [2/21/2010 3:25:27 PM [2/21/2010 4:49:08 PM [2/21/2010 4:49:01 PM [2/21/2010 4:49:11 PM [2/22/2010 10:40:13 AM [2/22/2010 10:42:17 AM [2/22/2010 10:42:31 AM [2/22/2010 10:46:54 AM [2/22/2010 12:17:37 PM	User Login System System Econolite System System System Econolite Econolite Econolite Econolite Econolite	Entity Type Signal Signal Signal Vehicle Detectors Signal Signal Signal Centracs Centracs Centracs Centracs Centracs Signal	Woodmen @ Chapel (ASC/2) Woodmen @ Chapel (ASC/2) Woodmen @ Chapel (ASC/2) EB Woodmen @ Academy (Eastbound) Woodmen @ N Union Blvd (ASC/3) Woodmen @ N Union Blvd (ASC/3)	Get Time Assert Phase Call Assert Ped Call Edited Entity Get Time Assert Phase Call Assert Ped Call Added User Role Edited User Role Added User Role Added User Edited Entity	EB Woodmen @ Academy EB Woodmen @ Academy C2C Administrator C2C Administrator-Fountain C2C Administrator-Falcon Falcon, CO Woodmen @ Rockrimmon

Activities that are not associated with an entity (such as changes to Global or Local Settings) are shown in the report with an Entity Type of "Centracs". Activities associated with an entity that has been deleted from the system are shown in the report with an Entity of "<Entity Deleted/Unknown>".

#### **System Events Report**

The System Events report shows all events that Centracs has logged within a specified date/time range (if they are enabled on the Events tab of the Alerts and Events window). This report offers a way to see all signal events, detector events, and Link-related events in one view.

Note • If an event type is not enabled on the Events tab of the Alerts and Events window (page 4-2), Centracs does not monitor that event type; therefore, events of that type are not included in this report. The only exception is if a trigger has been added for the event — events with triggers are included in the report regardless of whether they are enabled on the Alerts and Events window.

You can filter the report to include or exclude specific event types, such as communication problems and signals in flash. You can also filter it to include or exclude specific entities or specific entity types (signals, links, and/or detectors). You can sort the report by date/ time, entity type, entity name, or event name.

By default, the report shows up to 500 rows that match your selection criteria. If your database has a large quantity of system event data, select 250 from the "Row Limit" dropdown to increase the efficiency of the report. If necessary, you can also select a number larger than 500, or you can choose to show all data.

For an explanation of the event types included in this report, refer to *Events* on page 4-2.

**Note** • The Events dropdown list contains only those events that are found in the event log for your system. For example, if no signals have gone into flash mode since the last time the event log was purged, "Flash: ANY ON" is not shown in the dropdown list.

System Events Report

System Events				
Configurable Rep	ort Options			
Start Date & Time:	08/01/2011 9:27:10 AM	End Date & Time: 08/07	7/2011 5:28:33 PM	View Report
Entity Type(s):	Centracs, DMS, Link, Sig	nal, 👻 Entity Name(s): 🛛 WB V	Woodmen @ Academy 💌	
Events:	Collection Pattern Moni	itor I 💌 Row Limit: 500	•	
4 1 of 3	15 🕨 📔   🗢 🛞 😨	🖨 🔲 💷 🔍 -   100%	▼ Find   Next	
System	Events			
Time Range				
- Time Range: B/1/2011 9:27:10 A	M - 8/7/2011 5:28:33 PM	1		
8/1/2011 9:27:10 A		Entity	Event Name	Details
8/1/2011 9:27:10 A Date/Time	M - 8/7/2011 5:28:33 PM	-	Event Name Current Coordination Pattern	Details Coordination Pattern changed to 2
	M - 8/7/2011 5:28:33 PM Entity Type	Entity		Coordination Pattern
8/1/2011 9:27:10 A Date/Time X3/2011 4:55:13 PM	M - 8/7/2011 5:28:33 PM Entity Type Signal	Entity Woodmen @ Powers (Oasis)	Current Coordination Pattern	Coordination Pattern
V1/2011 9:27:10 A )ate/Time V3/2011 4:55:13 PM V3/2011 4:55:13 PM V3/2011 4:55:13 PM	M - 8/7/2011 5:28:33 PM Entity Type Signal Signal	Entity Woodmen @ Powers (Oasis) Woodmen @ Powers (Oasis)	Current Coordination Pattern Power Restart	Coordination Pattern changed to 2 Transition began at 8/3/2011 4:55:13 PM to enter new pattern from current pattern
8/ <b>1/2011 9:27:10 A</b> Date/Time V3/2011 4:55:13 PM	M - 8/7/2011 5:28:33 PM Entity Type Signal Signal Signal	Entity Woodmen @ Powers (Oasis) Woodmen @ Powers (Oasis) Woodmen @ Powers (Oasis)	Current Coordination Pattern Power Restart Transition - ON	Coordination Pattern changed to 2 Transition began at 8/3/2011 4:55:13 PM to enter new pattern from current pattern number 2.
V1/2011 9:27:10 A Date/Time V3/2011 4:55:13 PM V3/2011 4:55:13 PM V3/2011 4:55:13 PM	M - 8/7/2011 5:28:33 PM Entity Type Signal Signal Signal Signal	Entity Woodmen @ Powers (Oasis) Woodmen @ Powers (Oasis) Woodmen @ Powers (Oasis) Woodmen @ Powers (Oasis)	Current Coordination Pattern Power Restart Transition - ON Unit Control: Backup Mode - ON	Coordination Pattern changed to 2 Transition began at 8/3/2011 4:55:13 PM to enter new pattern from current pattern number 2. N/A Coordination Pattern

**Note** • This report shows detector faults for NTCIP controllers only. To see detector faults for both NTCIP *and* ACT controllers, use the Signal Detector Events report (page 10-34). To see *current* detector faults for ASC/3, ASC/2, and Cobalt controllers, use the Detector Fault Status window (page 6-48) or the Detector Fault Status report (page 10-22).

**Note** • For the numbered preempt events (i.e., Preempt Emergency Vehicle ##, Preempt Railroad ##, and Preempt Other ## — for example, Preempt Railroad 01), the Details column shows the preempt description that is *currently* in effect for that preempt. (If the preempt description has been changed since the event occurred, the preempt description in the Details column will not be the same as the preempt description that was in effect when the event occurred.) If the default preempt descriptions have been overridden for a specific signal, the override description is shown in the report; if not, the default description is shown in the report. For more information, refer to *Preempts* on page 20-5 and *Customizing the Preemptor Descriptions for a Signal* on page 3-42.

## **Time Drift Report**

The Time Drift report shows the outcome of all Time Drift Check actions during a specified time period. The Time Drift Check action is run via a manual command, schedule entry, or action set.

"Time drift" measures any difference between the current time according to Centracs and the current local time on the field controllers.

You can filter the report by date and Entity State, which specifies whether to include only active signals, only deleted signals, or both.

Time Drift							
Configurable Report O	ptions						
Start Date & Time:       08/11/2011 11:10:34 AM       End Date & Time:       08/11/2011 11:20:34 AM       View Report         Entity State:       Active							
I							
Time Drif	t				^		
Time Range: 8/11/2011 11:10:34 AM - 8/11/2011 11:20:34 AM							
Date/Time	Signal Name	Description	Drift Exceeded	Details			
8/11/2011 11:11:51 AM	Woodmen @ N Academy	ASC/3	No	0s, Time below Maximum Drift of 1s	Ξ		
8/11/2011 11:11:51 AM	Woodmen @ Austin Bluffs	Oasis	No	0s, Time below Maximum Drift of 1s			
8/11/2011 11:11:51 AM	Woodmen @ Rangewood	ASC/3	No	0s, Time below Maximum Drift of 1s			
8/11/2011 11:11:51 AM	Woodmen @ Chapel	ASC/2	No	0s, Time below Maximum Drift of 1s			
8/11/2011 11:11:51 AM	Woodmen @ IH25 W	ASC/2	No	0s, Time below Maximum Drift of 1s			
8/11/2011 11:11:51 AM	Woodmen @ Rockrimmon	W4	No	0s, Time below Maximum Drift of 1s			
8/11/2011 11:11:51 AM	Woodmen @ Black Forest	W4		No Response			
8/11/2011 11:11:51 AM	Woodmen @ N Union Blvd	ASC/3	No	0s, Time below Maximum Drift of 1s			
8/11/2011 11:11:51 AM	Woodmen @ Powers	Oasis	No	0s, Time below Maximum Drift of 1s	-		
· .				·	F.		

The columns on this report are:

- **Date/Time** The date and time the Time Drift Check action ran.
- **Signal Name** The name assigned to the signal in the Entity Configuration window.
- **Description** The description given to the signal in the Entity Configuration window.
- Drift Exceeded Shows whether the drift on the signal was larger than the "Maximum drift" value specified when the Time Drift Check action was requested (Yes or No).

- Time Drift Report
  - Details The difference between the time on the Centracs server and the time on the signal controller, in seconds. This column also shows the "Maximum drift" value that was specified when the Time Drift Check action was requested. Results such as STMP Not Configured, STMP Bad Packet, and Comm Server Timeout indicate a communication problem between Centracs and the controller.

In the sample report shown above, the Time Drift Check action ran for the entire-"Colorado Springs" entity. Because this is a System entity and not a signal, there can be nodrift, and the Detail column is blank. This row simply tells you that the action started forthe entire System at 9:52:10 AM. The rows below it show the signals within that Systemthat Centracs checked, along with the results of each check.

You can sort the report by any column.

Note that the following signals are not included in a Time Drift Check, and therefore not included in this report:

- Signals without any configured communication settings (on the Entity Configuration window)
- Signals from external Server-to-Server systems

## **Traffic Responsive Report**

**Note** • To see real-time traffic algorithm data as the algorithm runs, use the Traffic Responsive monitoring window (page 13-16).

You can use the Traffic Responsive report to monitor threshold-based Traffic Responsive performance on the system.

To run the report, specify the time period and the traffic algorithm to analyze. You can also specify which columns to include in the report. (Some columns are not shown on the sample report below.)

Optionally, set the "Only Show Pattern Change" option to Yes to only include rows that have the Pattern Set column set to Yes (i.e., where a new pattern was sent to the controllers). Set the "Only Show Change Recommended" option to Yes to only include rows that have the Change Recommended column set to Yes (i.e., where TR made a recommendation to change the pattern (regardless of whether the pattern was actually sent to the controllers)).

The report is sorted by Date/Time.

Start Date & T		ions																
	lime:	01/06/20	11 8:25:46 AN		End Date	& Time:		01/06/2011	1 8:25:46 P	M	1							View Rep
Fraffic Algorit	thm:	Woodme	n Rd Corrido	r 🔻	Columns t	to Display:		Raw Inbou	und, Raw C	Dutbour 🔻	1							
Only Show Pa	attern Chang	e: Yes	•		Only Show	w Change Ree	ommended:	Into	•	•	-							
4 1	of 5 🕨	▶   ← ⊗	📀   🖨 [	1 💷 🔍 - 🛛	100%	•	F	ind Next										
Time Range Algorithm N Date/Time		11 8:25:46 A Woodmen Raw			Smoothed	Smoothed	Smoothed	Smoothed	Cycle %	Offset %	Split %	Cycle	Offset	Split	Pattern	Offeet	Pattern	Message
	Inbound																	
	inbound	Outbound	Inbound	Outbound	Sidestreet	Occ1	Occ2	Arterial	Cycle %	Unset A	Split %	Level	Level	Level	Pattern	Unset	Set	lineboug
	11.77	Outbound 245.00	Inbound 11.67	Outbound 244.54	Sidestreet 0.00				48.91	4.56	100				1	1		
:30:01 AM /6/2011						Occ1	Occ2	Arterial				Level	Level	Level			Set	
:30:01 AM /6/2011 :40:02 AM	11.77	245.00	11.67	244.54	0.00	Occ1 0.00	Occ2 0.00	Arterial 244.54	48.91	4.56	100	Level 2	Level 1	Level	1	1	Set No	
30:01 AM 6/2011 40:02 AM 6/2011 50:03 AM 6/2011	11.77 12.05	245.00 245.00	11.67 11.97	244.54 244.90	0.00	0.00 0.00	0.00 0.00	Arterial 244.54 244.90	48.91 48.98	4.56 4.66	100	Level 2 2	Level 1 1	Level 1 1	1	1	Set No No	
:30:01 AM /6/2011 :40:02 AM /6/2011	11.77 12.05 12.14	245.00 245.00 243.98	11.67 11.97 12.11	244.54 244.90 244.17	0.00	0.00 0.00 0.00	0.00 0.00 0.00	Arterial 244.54 244.90 244.17	48.91 48.98 48.83	4.56 4.66 4.72	100 100 100	Level 2 2 2	Level 1 1 1	Level 1 1 1	1 1 1	1 1 1	Set No No No	
1/6/2011 3:30:01 AM 1/6/2011 3:40:02 AM 1/6/2011	11.77 12.05	245.00 245.00	11.67 11.97	244.54 244.90	0.00	0.00 0.00	0.00 0.00	Arterial 244.54 244.90	48.91 48.98	4.56 4.66	100	Level 2 2	Level 1 1	Level 1 1	1	1	Set No No	

Smoothed Occ1 = Smoothed Occupancy Override 1 Smoothed Occ2 = Smoothed Occupancy Override 2 Occ Ovrrd 1 Level = Occupancy Override 1 Level Occ Ovrrd 2 Level = Occupancy Override 2 Level

add more details

Note • Due to the width of this report, use legal-sized paper when you print it.

• Travel Time Links Report

# **Travel Time Links Report**

**Note** • This report contains historical link data. To get *current* link data, use the BlueTOAD Link Pair Status window (refer to page 14-13).

For a specific BlueTOAD link pair, the Travel Time Link report graphs speed and travel time data for multiple date ranges. You can use this report to see changes in trends over time. You can plot data points every hour, every half hour, every quarter hour, or every 5 minutes within the specified date ranges.

**Note** • The data for this report is logged in the database at five-minute intervals; this interval is not configurable.

Travel Time Link Report								
Configurable Report Options								
Links:	Pairing (9287) (Colonial Blvd & Metro Pkwy to Daniels Pkwy & Metro Pkwy)	Series 1 Start Date:	6/10/2012	[	View Report			
Starting Hour:	0:00	Series 1 End Date:	6/10/2012 11:59:59 PM					
Number of Hours:	24	Series 2 Start Date:	6/9/2012					
Interval:	60 min 💌	Series 2 End Date:	6/9/2012 11:59:59 PM					
Number of Ranges:	2	Show Series Average:	Yes					
Show Speed:	Yes	Show Travel Time Log Table:	No					
Show Travel Time:	Yes							
4 4 1 of		Find J. Next			_			
IT I OT	1 🕨 🕅   🗢 🛞   🦣 🗐 🛺 💐 🕴 100% 🔹	Find Next						

#### To generate the report:

- **1** In the Links dropdown, select a BlueTOAD link pair.
- 2 Enter the hour of the day at which to start plotting points. For example, if you select 13:00, the first data point will be for 1pm.
- 3 Enter the number of hours to plot for each day. For example, if you select 13:00 as the Starting Hour and 6 for the Number of Hours, the graph will include data for 1pm to 7pm.
- 4 Select the interval at which data points will be plotted during the date ranges (5 minutes, 15 minutes, 30 minutes, or 60 minutes).
- 5 To include more than two date ranges, select the *total* number of ranges (up to 8) from the dropdown. The report will use the pattern of the first two ranges you specified to calculate the other date ranges. If Series 1 is earlier than Series 2, any other ranges go forward in time; if Series 1 is later than Series 2, any other ranges go backwards in time. For example, if you select 4 from the dropdown, and if the first two ranges you specified are:

```
Series 1: 1/29/2016 - 1/31/2016
Series 2: 1/26/2016 - 1/28/2016
```

Travel Time Links Report

the report will set the other two ranges to be:

1/23/2016 - 1/25/2016
and
1/20/2016 - 1/22/2016
If the first two ranges are reversed:
Series 1: 1/26/2016 - 1/28/2016
Series 2: 1/29/2016 - 1/31/2016
the report will set the other two ranges to be:
2/1/2016 - 2/3/2016

and

2/4/2016 - 2/6/2016

Each series will be represented on the graphs by a separate line. For example, if you select four series, each graph will have four lines.

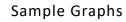
- 6 Specify which graphs to generate:
  - Show Speed For each series of dates, this graph shows the average speed at different times of the day on this section of roadway.
  - Show Travel Time For each series of dates, this graph shows the average travel time at different times of the day on this section of roadway.
- 7 In the Series 1 and Series 2 fields, enter the start and end dates for the first two date ranges (or use the calendar pop-ups to select dates from the calendar). For best results, set each range to contain the same number of days.
- 8 For the "Show Series Average" option, specify whether to include a line to show the average of the other lines.
- **9** For the "Show Travel Time Log Table" option, specify whether to show a table that lists the data used to generate the graphs.
- 10 Click View Report.

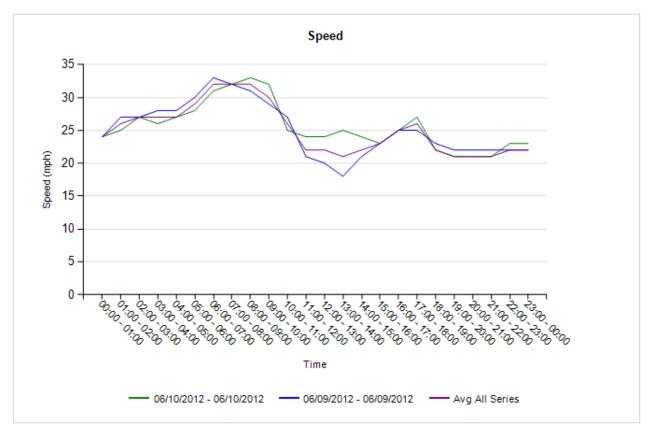
On the graphs, if the date ranges contain more than one day, then each data point represents the average of all the days in the range for that time of the day (hour, half hour, etc.).

**Note** • If an interval does not have data (for example, if there was a communications problem during that time), a point is not plotted on the graphs for that interval.

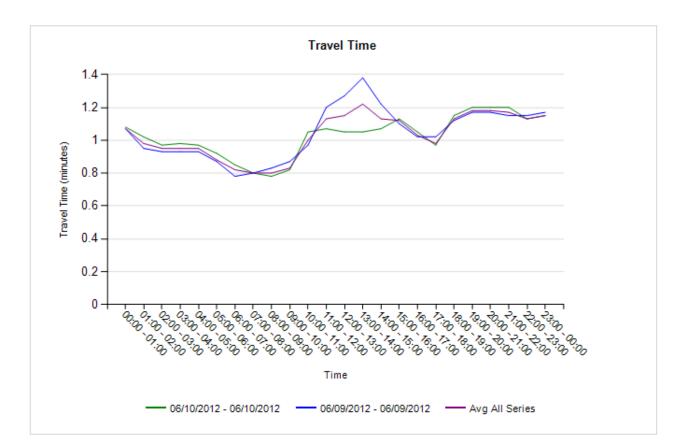
#### **Generating Reports**

Travel Time Links Report





Travel Time Links Report



A downward spike indicates a lack of data at that time, for any of the reasons below:

- None of the passing vehicles had a Bluetooth<sup>™</sup>-enabled device
- There were no passing vehicles (because traffic was stopped or because no cars were present)
- Communications were down

**Note** • A straight horizontal line on the graphs often indicates stale data (for example, if no vehicles with Bluetooth devices have been detected for an extended period of time).

• User Login Report

## **User Login Report**

The User Login report is a historical list of all logins, logouts, and failed login attempts to Centracs for the date/time range you specify.

You can filter this list for one or more specific users, or you can see all users. You can specify whether you want to see logins, logouts, and/or failed login attempts. You can sort the information by Date/Time, User Login, Full Name, or Details (by default, the report is sorted by Date/Time).

For failed login attempts, the Details column shows the name of the machine from which the login was attempted, the user ID that was attempted, and the reason the login failed.

Note • To see a list of only those users who are currently logged into the system, use the Monitoring ▶ Current Users option from the main menu. For details, refer to *Monitoring Users* on page 20-31.

+ Configurable Rep	ort Options					
Start Date & Time: User(s):	07/19/2011 9:23:14 Econolite, ENorthm		End Date & Time: Login Type:	07/19/2011 9:23:14 PN User Logged In, User		View Report
∢	1 ▶ ୬   ∉ ⊗	۵ 🖨 🖬	100%	•	Find   Next	
User Lo	J					
7/19/2011 9:23:14	4 AM - 7/19/2011 9	:23:14 PM				=
7/19/2011 9:23:14 Date/Time		:23:14 PM User Login	Full Name	3	Details	
			Full Name		Details User Logged In	
Date/Time	AM	User Login				
Date/Time 7/19/2011 10:01:05 /	AM I	User Login LafeyetteR	Lafayette	Reynolds	User Logged In	
Date/Time 7/19/2011 10:01:05 / 7/19/2011 10:02:47 /	AM I AM I AM I	User Login LafeyetteR kam	Lafayette K Mac	Reynolds	User Logged In User Logged In	
Date/Time 7/19/2011 10:01:05 / 7/19/2011 10:02:47 / 7/19/2011 10:03:29 /	AM AM AM	User Login LafeyetteR kam ss	Lafayette K Mac Sue Sylve	Reynolds ster Prune	User Logged In User Logged In User Logged Out	
Date/Time 7/19/2011 10:01:05 A 7/19/2011 10:02:47 A 7/19/2011 10:03:29 A 7/19/2011 10:18:10 A	AM A	User Login LafeyetteR kam SS ptp	Lafayette K Mac Sue Sylve Phineas T.	Reynolds ster Prune Reynolds	User Logged In User Logged In User Logged Out User Logged In	

**Note** • This report can also be launched for a specific user from the Users and Recipients report (page 10-61). To return to the parent report, click the "Back to Parent Report" icon.

## **Users and Recipients Report**

The Users and Recipients report is a list of all the people (and remote S2S and C2Csystems, if any) that are configured as users and/or recipients in your database. For each person, the report shows all of the contact information that has been entered into the system, the assigned security roles and jurisdictions, and the last date/time they logged into Centracs.

For details about user/recipient configuration, refer to *Defining Users* on page 20-24 and *Defining Recipients* on page 20-73.

Users and Rec	ipients									
<b>∛ ∛</b> 1	of 2 🕨 🔰	🗧 🛞 🚱	با يا 🗋 🖨	• 100%	•	Find   Next				
Users and Recipients										
User Login	First Name	Last Name	User Role	Application Roles	Jurisdiction Roles	Email / SMS	Phone 1 / Phone 2	Recipient Jurisdictions	Last Login	
<u>co</u>	Chips	O'Toole	Supervisor- TEL User Role	Supervisor App Role	TELLER	Email: COT@econolite.com		Teller County	8/10/2011 10:11:22 PM	
<u>dsh</u>	David	St. Hubbins	Supervisor- ALL User Role	Supervisor App Role	COS, DEN, TELLER	Email: dsh@econolite.com	Phone 1: 970-483-2722	All	8/10/2011 10:14:11 PM	
ENorthman	Eric	Northman	Supervisor- COS User Role	Supervisor App Role	COS	Email: enorth@econolite.com	Phone 1: 719-293-8427	Colorado Springs	8/10/2011 10:11:44 PM	
<u>es</u>	Emil	Schaufhausen	COS Admin- Black Forest	Administrator App Role	COS	Email: dr.emil@econolite.com	Phone 1: 970-232-9808	Colorado Springs	8/10/2011 10:11:50 PM	=
fl	Forrest	Lawrenceton	Supervisor- ALL User Role	Supervisor App Role	COS, DEN, TELLER	Email: ForrLawr@econolite.com		All	8/11/2011 3:24:48 PM	
jaj	James	Jesenfen	Administrator User Role	Administrator App Role	COS, DEN, TELLER	Email: jamesjes@econolite.com		Colorado Springs	8/10/2011 10:13:04 PM	
Ü	James		COS Admin- Woodland Park	Administrator App Role	cos	Email: jamesjos@econolite.com SMS: 3139874039@tmobile.net	Phone 1: 888-374-6090 Phone 2: 970-768-0021	All	8/10/2011 10:10:36 PM	
<u>LafeyetteR</u>	Lafayette	Reynolds	Supervisor- DEN User Role	Supervisor App Role	DEN	Email: lafayette@econolite.com	Phone 2: 970-382-3128	Denver		
laj	Lawrence	Jamison	Administrator User Role	Administrator App Role	COS, DEN, TELLER	SMS: 8883746090@vz.net		All	8/10/2011 10:14:19 PM	-
•					III				+	

You can sort the report by any column except Phone 1/Phone 2.

The Recipient Jurisdictions column shows the jurisdiction(s) assigned to the Recipient record for this person.

**Note** • To see a list of logins and logouts for a specific user, click the user ID in the first column. The User Login report opens, and shows you their activity during the last 24 hours. You can change the start date to see older activity. To return to the Users and Recipients report, click the "Back to Parent Report" icon.

VOS Daily Report

## **VOS Daily Report**

For one or more vehicle detectors, the VOS Daily report graphs volume, occupancy, and speed data for a specified time period. You can plot data points every day, week, or month within the specified date range.

**Note** • This report contains historical detector data. To get *current* detector data, use the Real-Time Detector Status window (page 6-42).

VOS Daily Report				
Configurable Report Options				
First Day:	7/12/2014	Group, Signal, etc.	30th & Fontanero, Ø's 6 & 1 (F 💌	ew Report
Last Day:	7/17/2014 11:59:59 PM	Series 1:	504 Det 1 (Call Phase(s) 1), 50	
Interval:	1 Day	Series 2:	504 Det 2 (Call Phase(s) 2), 50 💌	
Show Total Volume per Series:	Yes	Series 3:	(None)	
Show Avg Occupancy per Series:	Yes	Series 4:	(None)	
Show Avg Speed per Series:	Yes	Series 5:	(None)	
Show Stacked Volume of All Series:	Yes	Series 6:	(None)	
Show Data Table:	No	Series 7:	(None)	
Include Avg of All Series:	No	Series 8:	(None)	
Include Sum of All Series:	No			
4 4 1 of 1 ▶ ▶    ∉	🛞 🚱 🚔 🗐 🛺 尾 -   100%	-	Find   Next	
				E

#### To generate the report:

- 1 Enter the start and end dates for the report, or use the calendar pop-ups to select dates from the calendar.
- 2 Select the interval at which data points will be plotted during this date range (1 Day, 1 Week, or 1 Month).
- **3** Specify which graphs to generate:
  - Show Total Volume per Series For each series of detectors, this graph shows the total number of vehicles detected during the specified date range.
  - Show Avg Occupancy per Series For each series of detectors, this graph shows the percent of time the detectors were occupied (this is an average of all detectors in the series).
  - Show Avg Speed per Series For each series of detectors, this graph shows the average calculated vehicle speed (this is an average of all detectors in the series). For more details, refer to Speed Calculations in Reports on page 10-78. Note that if the volume/occupancy reported by the detector has an occupancy of zero, that data is not included in the calculations for the Speed graph.

- VOS Daily Report •
- Show Stacked Volume of All Series This graph shows the total volume for each detector series, stacked on top of one another in order to illustrate the total volume of all series combined.
- 4 For the "Show Data Table" option, specify whether to show a table that lists the data used to generate the graphs.
- **5** For the "Include Avg of All Series" option, specify whether to include a line on the Total Volume, Average Occupancy, and Average Speed graphs to show the average of the other lines. this option also shows averaged values in the data table (if enabled).
- 6 For the "Include Sum of All Series" option, specify whether to include a line on the Total Volume graph to show the sum of the other lines.
- 7 In the "Group, Signal, etc." dropdown, select one or more signals and/or groups of signals. When you do, the Series dropdowns are populated with the detectors for those signals only.
- 8 In the Series dropdowns, select the detectors to be included in the report. Each series will be represented on the graphs by a separate line. For example, if you select four series, each graph will have four lines (or five, if you enable the Include Series Avg option). Each series you configure can contain one or more detectors. For example, you can configure one series for Eastbound detectors and a different one for Westbound detectors. For each series you enter, make sure that the None box is unchecked.
- 9 Click View Report.

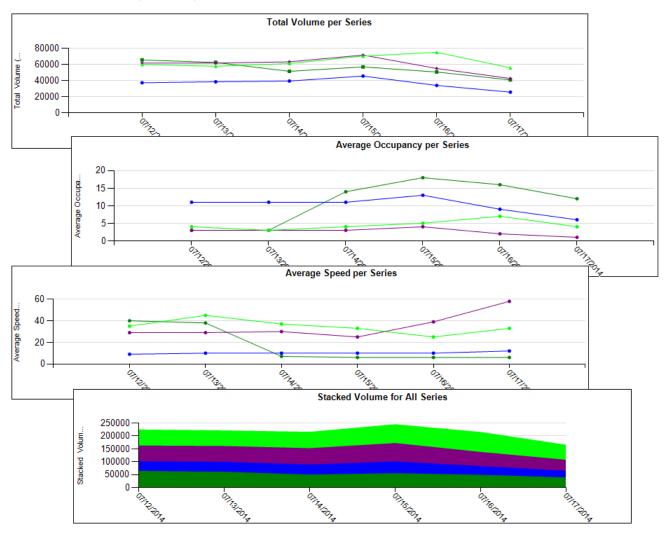
Scroll through the pages of the report to see the various graphs.

**Note** • If an interval does not have data (for example, if there was a communications problem between the controller and the detectors during that time), a point is not plotted on the graphs for that interval.

#### **Generating Reports**

VOS Daily Report

### Sample Graphs



On the Y-axis, "per Period" refers to the polling period for the detectors. VOS data isusually gathered via secondary polling. For more information about polling, refer to-*Configuring Polling Packets* on page 20-50 and *Configuring Communication Channels* on page 20-36.

The Stacked Volume graph is just a different presentation of the data in the Total Volume graph. In the Stacked Volume example above, the combined volume for all four series on July 15th is approximately 250,000 vehicles. In the Total Volume example, if you add the values for all four points on July 15th, you get the same result — approximately 250,000 vehicles for that day.

## **VOS Hourly Report**

For one or more vehicle detectors, the VOS Hourly report graphs volume, occupancy, and speed data for a specified time period. You can plot data points every hour, every half hour, every guarter hour, or every 5 minutes within the specified date range.

**Note** • This report contains historical detector data. To get *current* detector data, use the Real-Time Detector Status window (page 6-42).

Configurable Report Options				
First Day:	11/1/2015	Group, Signal, etc.	30th & Fontanero, Ø's 6 & 1 (F ▼	View Report
Last Day:	11/2/2015 11:59:59 PM	Series 1:	(None)	
Starting Hour:	00:00	Series 2:	(None)	
Number of Hours:	24	Series 3:	(None)	
Interval:	60 min 💌	Series 4:	(None)	
Show Total Volume per Series:	Yes	Series 5:	(None)	
Show Avg Occupancy per Series:	Yes	Series 6:	(None)	
Show Avg Speed per Series:	Yes	Series 7:	(None)	
Show Stacked Volume of All Series:	Yes	Series 8:	(None)	
Show Data Table:	No	Include Sum of All Series:	No	
Include Avg of All Series:	No			
	🖻 🛞 🍪 📫 🔲 🛍 🔍 •   1009	6 •	Find Next	

#### To generate the report:

- 1 Enter the start and end dates for the report, or use the calendar pop-ups to select dates from the calendar.
- 2 Enter the hour of the day at which to start plotting points.
- 3 Enter the number of hours to plot for each day.
- 4 Select the interval at which data points will be plotted during this date range (5 minutes, 15 minutes, 30 minutes, or 60 minutes).
- 5 Specify which graphs to generate (select Yes or No for each):
  - Show Total Volume per Series For each series of detectors, this graph shows the total number of vehicles detected during the specified date/time range. (Note that if you select more than one day, the report averages the values for each hour of the day for the entire date range.)
  - Show Avg Occupancy per Series For each series of detectors, this graph shows the percent of time the detectors were occupied (this is an average of all detectors in the series).

• VOS Hourly Report

- Show Avg Speed per Series For each series of detectors, this graph shows the average calculated vehicle speed (this is an average of all detectors in the series). For more details, refer to Speed Calculations in Reports on page 10-78. Note that if the volume/occupancy reported by the detector has an occupancy of zero, that data is not included in the calculations for the Speed graph.
- Show Stacked Volume of All Series This graph shows the total volume for each detector series, stacked on top of one another in order to illustrate the total volume of all series combined.
- 6 For the "Show Data Table" option, specify whether to show a table that lists the data used to generate the graphs.
- 7 For the "Include Avg of All Series" option, specify whether to include a line on the Total Volume, Average Occupancy, and Average Speed graphs to show the average of the other lines. this option also shows averaged values in the data table (if enabled).
- 8 In the "Group, Signal, etc." dropdown, select one or more signals and/or groups of signals. When you do, the Series dropdowns are populated with the detectors for those signals only.
- 9 In the Series dropdowns, select the detectors to be included in the report. Each series will be represented on the graphs by a separate line. For example, if you select four series, each graph will have four lines (or five, if you enable the Include Series Avgorition). Each series you configure can contain one or more detectors. For example, you can configure one series for Eastbound detectors and a different one for Westbound detectors. For each series you enter, make sure the None box is unchecked.
- **10** For the "Include Sum of All Series" option, specify whether to include a line on the Total Volume graph to show the sum of the other lines.

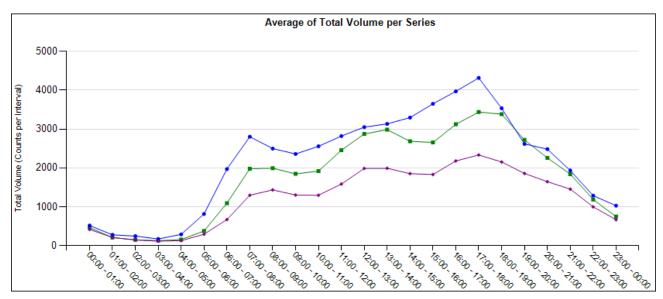
#### 11 Click View Report.

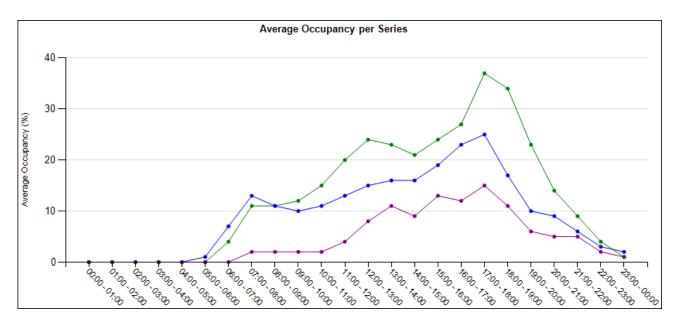
Scroll through the pages of the report to see the various graphs. If the date range contains more than one day, each data point represents the average of all the days in the range for that time of the day (hour, half hour, etc.).

**Note** • If an interval does not have data (for example, if there was a communications problem between the controller and the detectors during that time), a point is not plotted on the graphs for that interval.

VOS Hourly Report

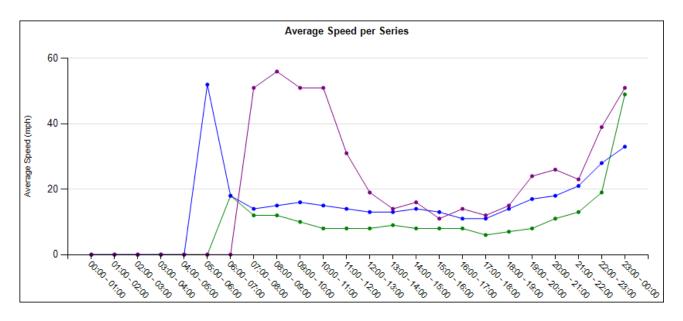


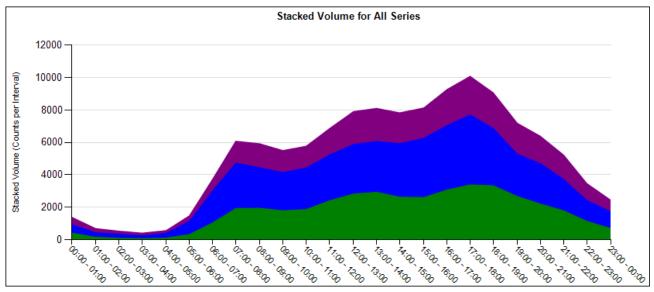




**Generating Reports** 

• VOS Hourly Report





The Stacked Volume graph is just a different presentation of the data in the Total Volume graph. In the Stacked Volume example above, the combined volume for all three series between 17:00 and 18:00 (5:00pm and 6:00pm) is approximately 10,000 vehicles. In the Total Volume example, if you add the values for all three points at 17:00-18:00, you get the same result — approximately 10,000 vehicles during that hour.

On the Y-axis, "per Period" refers to the polling period for the detectors. VOS data is usually gathered via secondary polling. For more information about polling, refer to-*Configuring Polling Packets* on page 20-50 and *Configuring Communication Channels* on page 20-36.

## **VOS Multi-Date Hourly Report**

For one or more vehicle detectors, the VOS Multi-Date Hourly report graphs volume, occupancy, and speed data for multiple date ranges. You can use this report to see changes in trends over time. You can plot data points every hour, every half hour, every quarter hour, or every 5 minutes within the specified date ranges.

**Note** • This report contains historical detector data. To get *current* detector data, use the Real-Time Detector Status window (page 6-42).

- VOS Multi-Date Hourly Report				
Configurable Report Options				
Groups, Signals, etc.	30th & Fontanero, Ø's 6 & 1 (F 💌	Series 1 Start Date:	1/26/2016	View Report
Detectors:	504 Det 1 (Call Phase(s) 1), 50 💌	Series 1 End Date	1/28/2016 11:59:59 PM	
Starting Hour:	00:00	Series 2 Start Date:	1/29/2016	
Number of Hours:	24	Series 2 End Date:	1/31/2016 11:59:59 PM	
Interval:	60 min	Number of Ranges:	4	
Show Total Volume per Series:	Yes	Include Avg of All Series:	No	
Show Avg Occupancy per Series:	Yes	Include Sum of All Series:	No	
Show Avg Speed per Series:	Yes	Show Detector List:	No	
Show Stacked Volume of All Series:	Yes	Show Table Data:	No	
		terror const		
	• 🛞 🚱   🖨 🔲 🛍 🔍 •   100%	•	Find   Next	

#### To generate the report:

- 1 In the "Group, Signals, etc." dropdown, select one or more signals and/or groups of signals. When you do, the Detectors dropdown is populated with the detectors for those signals only.
- 2 In the Detectors dropdown, select one or more detectors to include in the report. If you select multiple detectors, their values will be averaged together.
- **3** Enter the hour of the day at which to start plotting points. For example, if you select 13:00, the first data point will be for 1pm.
- 4 Enter the number of hours to plot for each day. For example, if you select 13:00 as the Starting Hour and 6 for the Number of Hours, the graph will include data for 1pm to 7pm.
- **5** Select the interval at which data points will be plotted during the date ranges (5 minutes, 15 minutes, 30 minutes, or 60 minutes).

• VOS Multi-Date Hourly Report

- 6 Specify which graphs to generate:
  - Show Total Volume per Series For each series of dates, this graph shows the total number of vehicles detected by the specified detectors.
  - Show Avg Occupancy per Series For each series of dates, this graph shows the percent of time the detectors were occupied (this is an average of all the selected detectors).
  - Show Avg Speed per Series For each series of dates, this graph shows the average calculated vehicle speed (this is an average of all the selected detectors). For more details, refer to Speed Calculations in Reports on page 10-78. Note that if the volume/occupancy reported by the detector has an occupancy of zero, that data is not included in the calculations for the Speed graph.
  - Show Stacked Volume of All Series This graph shows the total volume for each date series, stacked on top of one another in order to illustrate the total volume of all series combined.
- 7 In the Series 1 and Series 2 fields, enter the start and end dates for the first two date ranges (or use the calendar pop-ups to select dates from the calendar). For best results, set each range to contain the same number of days.
- 8 To include more than two date ranges, select the *total* number of ranges (up to 8) from the dropdown. The report will use the pattern of the first two ranges you specified to calculate the other date ranges. If Series 1 is earlier than Series 2, any other ranges go forward in time; if Series 1 is later than Series 2, any other ranges go backwards in time. For example, if you select 4 from the dropdown, and if the first two ranges you specified are:

```
Series 1: 1/29/2016 - 1/31/2016
Series 2: 1/26/2016 - 1/28/2016
the report will set the other two ranges to be:
1/23/2016 - 1/25/2016
and
1/20/2016 - 1/22/2016
If the first two ranges are reversed:
Series 1: 1/26/2016 - 1/28/2016
Series 2: 1/29/2016 - 1/31/2016
the report will set the other two ranges to be:
2/1/2016 - 2/3/2016
and
2/4/2016 - 2/6/2016
```

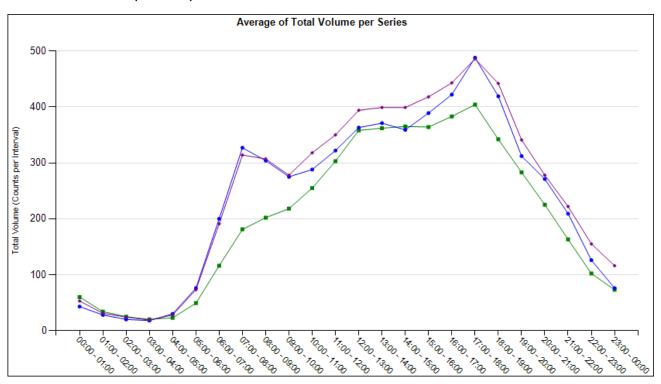
VOS Multi-Date Hourly Report •

Each series will be represented on the graphs by a separate line. For example, if you select four series, each graph will have four lines.

- **9** For the "Include Avg of All Series" option, specify whether to include a line on the Total Volume, Average Occupancy, and Average Speed graphs to show the average of the other lines. this option also shows averaged values in the data table (if enabled).
- **10** For the "Include Sum of All Series" option, specify whether to include a line on the Total Volume graph to show the sum of the other lines.
- 11 For the "Show Detector List" option, specify whether to print the list of detectors at the top of the report.
- **12** For the "Show Table Data" option, specify whether to show a table that lists the data used to generate the graphs.
- 13 Click View Report.

Scroll through the pages of the report to see the various graphs. If the date ranges contain more than one day, then each data point represents the average of all the days in the range for that time of the day (hour, half hour, etc.).

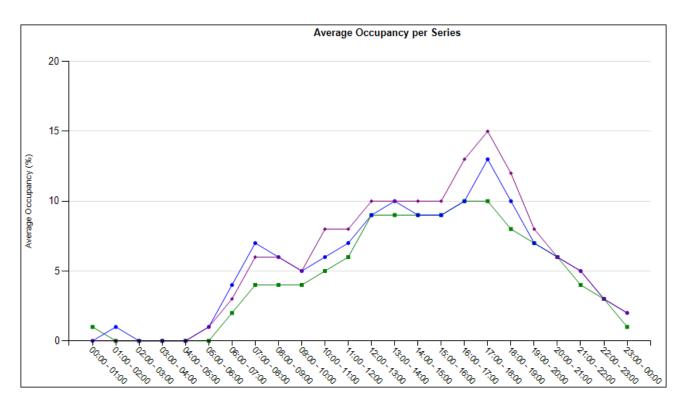
**Note** • If an interval does not have data (for example, if there was a communications problem between the controller and the detectors during that time), a point is not plotted on the graphs for that interval.

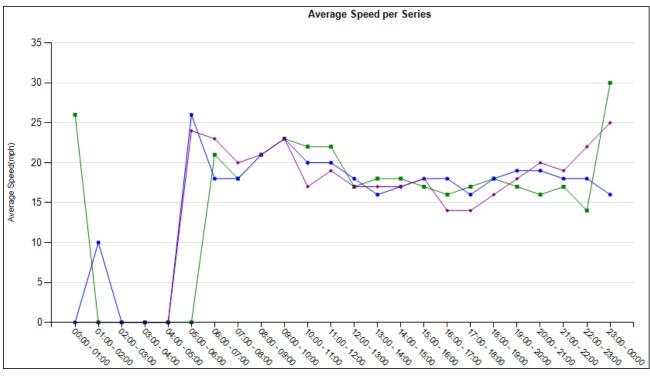


Sample Graphs

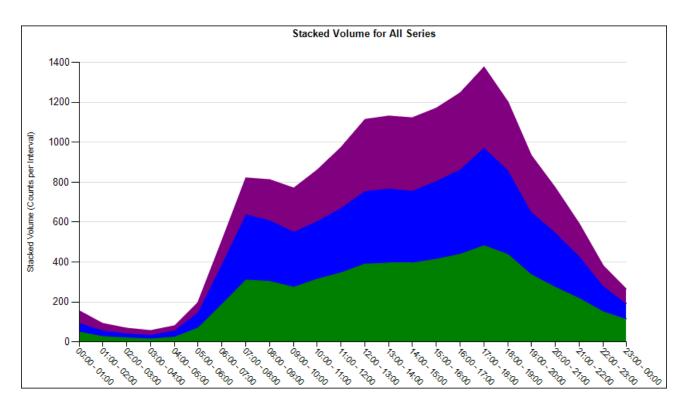
#### **Generating Reports**

#### • VOS Multi-Date Hourly Report





VOS Multi-Date Hourly Report



On the Y-axis, "per Period" refers to the polling period for the detectors. VOS data isusually gathered via secondary polling. For more information about polling, refer to-*Configuring Polling Packets* on page 20-50 and *Configuring Communication Channels* onpage 20-36.

The Stacked Volume graph is just a different presentation of the data in the Total Volume graph. In the Stacked Volume example above, the combined volume for all three series between 17:00 and 18:00 (5:00pm and 6:00pm) is approximately 1380 vehicles. In the Total Volume example, if you add the values for all three points at 17:00-18:00, you get the same result — approximately 1380 vehicles during that hour.

# **VOS Multi-Date Daily Report**

For one or more vehicle detectors, the VOS Multi-Date Daily report graphs volume, occupancy, and speed data for multiple date ranges. You can use this report to see changes in trends over time. You can plot data points as frequently as each day within the specified date ranges.

**Note** • This report contains historical detector data. To get *current* detector data, use the Real-Time Detector Status window (page 6-42).

VOS Multi-Date Daily Report				
Configurable Report Options				
Group, Signal, etc.	30th & Fontanero, Ø's 6 & 1 (F 💌	Series 1 Start Date:	12/1/2015	Report
Detectors:	504 Det 1 (Call Phase(s) 1), 50 💌	Series 1 End Date	12/5/2015 11:59:59 PM	
Interval:	1 Day	Series 2 Start Date:	12/6/2015	
Show Total Volume per Series:	Yes	Series 2 End Date:	12/10/2015 11:59:59 PM	
Show Avg Occupancy per Series:	Yes	Number of Ranges:	3	
Show Avg Speed per Series:	Yes	Include Avg of All Series:	No	
Show Stacked Volume of All Series:	Yes	Include Sum of All Series:	No	
Show Detector List:	No	Show Table Data:	No	
	🛞 😳   🌲 🔲 💷 🔍 +   100%	-	Find   Next	_
				<u>^</u>
				and the second s

#### To generate the report:

- 1 In the "Group, Signal, etc." dropdown, select one or more signals and/or groups of signals. When you do, the Detectors dropdown is populated with the detectors for those signals only.
- 2 In the Detectors dropdown, select one or more detectors to include in the report. If you select multiple detectors, their values will be averaged together.
- 3 Select the interval at which data points will be plotted during the date ranges (1 Day, 1 Week, or 1 Month).
- 4 Specify which graphs to generate:
  - Show Total Volume per Series For each series of dates, this graph shows the total number of vehicles detected by the specified detectors.
  - Show Avg Occupancy per Series For each series of dates, this graph shows the percent of time the detectors were occupied (this is an average of all the selected detectors).
  - Show Avg Speed per Series For each series of dates, this graph shows the average calculated vehicle speed (this is an average of all the selected detectors). For more details, refer to Speed Calculations in Reports on page 10-78. Note that if the volume/occupancy reported by the detector has an occupancy of zero, that data is not included in the calculations for the Speed graph.

VOS Multi-Date Daily Report

- Show Stacked Volume of All Series This graph shows the total volume for each date series, stacked on top of one another in order to illustrate the total volume of all series combined.
- 5 For the "Show Detector List" option, specify whether to print the list of detectors at the top of the report.
- 6 In the Series 1 and Series 2 fields, enter the start and end dates for the first two date ranges (or use the calendar pop-ups to select dates from the calendar). For best results, set each range to contain the same number of days.
- 7 To include more than two date ranges, select the *total* number of ranges (up to 8) from the dropdown. The report will use the pattern of the first two ranges you specified to calculate the other date ranges. If Series 1 is earlier than Series 2, any other ranges go forward in time; if Series 1 is later than Series 2, any other ranges go backwards in time. For example, if you select 4 from the dropdown, and if the first two ranges you specified are:

```
Series 1: 1/29/2016 - 1/31/2016
Series 2: 1/26/2016 - 1/28/2016
```

the report will set the other two ranges to be:

1/23/2016 - 1/25/2016

and

1/20/2016 - 1/22/2016

If the first two ranges are reversed:

Series 1: 1/26/2016 - 1/28/2016

Series 2: 1/29/2016 - 1/31/2016

the report will set the other two ranges to be:

2/1/2016 - 2/3/2016

and

2/4/2016 - 2/6/2016

Each series will be represented on the graphs by a separate line. For example, if you select four series, each graph will have four lines.

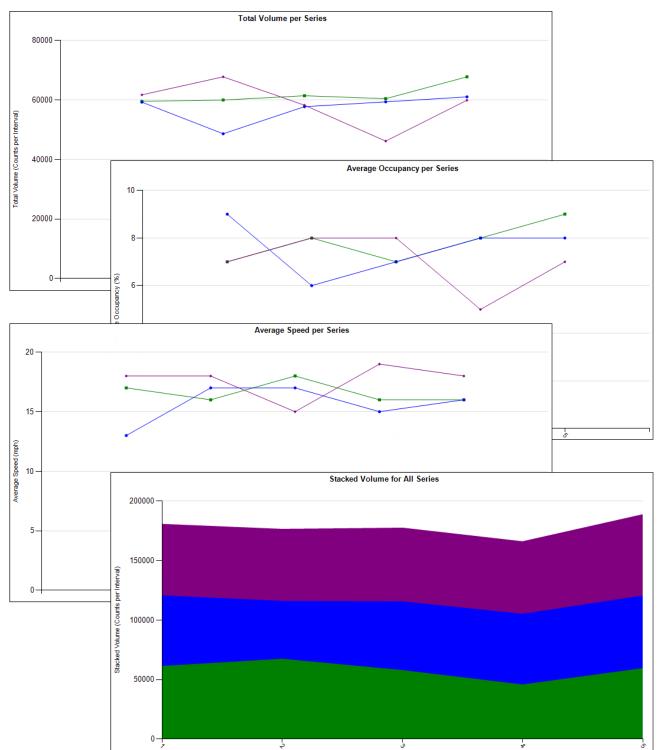
- 8 For the "Include Avg of All Series" option, specify whether to include a line on the Total Volume, Average Occupancy, and Average Speed graphs to show the average of the other lines. this option also shows averaged values in the data table (if enabled).
- **9** For the "Include Sum of All Series" option, specify whether to include a line on the Total Volume graph to show the sum of the other lines.
- **10** For the "Show Table Data" option, specify whether to show a table that lists the data used to generate the graphs.
- 11 Click View Report.

• VOS Multi-Date Daily Report

Scroll through the pages of the report to see the various graphs.

**Note** • If an interval does not have data (for example, if there was a communications problem between the controller and the detectors during that time), a point is not plotted on the graphs for that interval.

VOS Multi-Date Daily Report



## Sample Graphs

• Speed Calculations in Reports

The numbers on the X-axis indicate the day number within each date range. In this particular example, the report parameters were:

Series 1 Start Date:	12/01/2015
Series 1 End Date:	12/05/2015
Series 2 Start Date:	12/06/2015
Series 2 End Date:	12/10/2015
Number of Ranges:	3
Interval:	1 Day

Therefore, Day 1 on the X-axis is December 1st for Series 1 (purple), December 6th for Series 2 (blue), and December 11th for Series 3 (green).

On the Y axis, "per Period" refers to the polling period for the detectors. VOS data is usually gathered via secondary polling. For more information about polling, refer to-*Configuring Polling Packets* on page 20-50 and *Configuring Communication Channels* on page 20-36.

The Stacked Volume graph is just a different presentation of the data in the Total Volume graph. In the Stacked Volume example above, the combined volume for all three series on Day 3 is approximately 175,000 vehicles. In the Total Volume example, if you add the values for all three points on Day 3, you get the same result — approximately 175,000 vehicles for that day.

## **Speed Calculations in Reports**

For Centracs reports that include vehicle speed calculations:

Average Speed = ((Volume \* (Loop Length + Average Vehicle Length)) / ((Occupancy / 200) \* Sample Time (in sec))) \* Speed Unit

where Speed Unit for feet = 3600 seconds / 5280 feet (i.e., 1 hour / 1 mile)

Or

where Speed Unit for meters = 3600 seconds / 1000 meters (i.e., 1 hour / 1 kilometer)

**Note** • The percent Occupancy is divided by 200 instead of 100 due to the way Occupancy values are logged, according to the "detectorOccupancy" object in the NTCIP 1202 standard, "Object Definitions for Actuated Traffic Signal Controller (ASC) Units".

# **Using the MOE Reports**

The optional MOE (Measure of Effectiveness) reports feature in Centracs calculates detailed statistics about the performance of traffic signals and shows these calculations graphically for easy interpretation by the user. Calculations are made from data collected by ASC/3 and Cobalt signal controllers. The MOE reports include:

- MOE Arrival On Green Report graphs the percentage of vehicles that arrived at the signal during the green interval. Refer to page 11-6.
- MOE Cycle Length Report graphs the actual length of each cycle run by the controller during the day. Refer to page 11-8.
- MOE Flow Rate Report graphs the volume of vehicles detected per hour during each time of the day for each phase. Refer to page 11-10.
- MOE Green Times Report graphs the actual length of the green time for each cycle during the day for each phase. Refer to page 11-12.
- MOE PCD Report graphs the arrival time of each vehicle in relation to the actual green, red, and yellow times for the selected phase. Refer to page 11-14.
- MOE Percentage Pedestrian Calls Report graphs the percentage and number of cycles during which a pedestrian call occurred. Refer to page 11-17.
- MOE Split Failures Report graphs the number of times during the day that the volume-to-capacity ratio was larger than or equal to the user-specified Failure Threshold. Refer to page 11-19.
- MOE Volume-to-Capacity Report graphs the volume-to-capacity ratio for each time of the day for each phase. Centracs uses this ratio to determine when split failures occur. Refer to page 11-21.

Each report represents a user-specified 24-hour period (from 00:00:00 to 23:59:59). You can run the reports for any 24-hour period for which data was collected. All MOE reports have an option to print the graphs to a local or network printer.

**Note** • You must get a license key from Econolite Technical Support in order to use the MOE reports feature.

#### Settings

## Settings

To configure the MOE report settings for a signal:

1 From the Entity Tree, right-click the signal and select **MOE Settings**. The MOE Settings window opens.

E	MOE Settings				
	Signal Settings				
	Signal Name	Woodmer	n @ N Unio	n	
	Bin Time (min)	30			
	Counts to Avg.	20			
	R1 Coord. Phase	2 🔻			
	R2 Coord. Phase	6 🔻			
	Phase Settings				
	Phase	1	•		
	Saturation Rate	(veh/hr) 1	000		
	Failure Threshol	± 1			
			Save	Cancel	
				Ganger	

- 2 Set values for the fields below and click Save:
  - Bin Time The number of minutes represented by each data point in the graphs for the Percentage Pedestrian Calls report (page 11-17) and each bar in the bar graphs for the Split Failures report (page 11-19). For example, because each graph on these two reports represents a 24-hour period, if you enter a value of 60 in the Bin Time field, there will be 24 bars or points on each graph (where each one represents a period of 60 minutes). With a value of 30, there will be 48 bars/points. As you increase the Bin Time, the number of bars/points on each graph decreases; as you decrease the Bin Time, the number of bars/points increases.
  - **Counts to Avg.** This is used for the Flow Rate report (page 11-10), Green Times report (page 11-12), and Volume-to-Capacity report (page 11-21), when the Show Average option is turned on (which shows the moving average of the data points). This setting indicates the frequency with which the average values will be calculated i.e., it is the number of data points that will be averaged together to create each section of the moving average line. As you decrease the Counts to Avg number, the average line becomes more jagged; as you increase the Counts to Avg number, the line becomes flatter. For example, if you enter 1, the line for the data points and the line for the moving average are identical. The default is 20.
  - **R1 Coord. Phase** The Ring 1 coordination phase, used to calculate cycle lengths for the Cycle Length report. This value is populated automatically using the coordinated phase programmed on the controller for Ring 1. That phase number

then becomes an option in the dropdown list on the Cycle Length report (refer to page 11-8). (If the controller settings have not been uploaded to Centracs, these fields are disabled, and you must upload the settings from the controller.)

- R2 Coord. Phase The Ring 2 coordination phase, used to calculate cycle lengths for the Cycle Length report. This value is populated automatically using the coordinated phase programmed on the controller for Ring 2. That phase number then becomes an option in the dropdown list on the Cycle Length report (refer to page 11-8). (If the controller settings have not been uploaded to Centracs, these fields are disabled, and you must upload the settings from the controller.)
- Phase The phase to which the next two settings (Saturation Rate and Failure Threshold) will apply.
- Saturation Rate For the Split Failures report (page 11-19) and Volume-to-Capacity report (page 11-21), the maximum capacity of vehicles per hour for the specified phase (for all lanes combined). Centracs uses this number to calculate the volume-to-capacity ratio. To determine the saturation rate, you can use the maximum vehicle count observed during the peak hours for that phase.
- Failure Threshold For the Split Failures report (page 11-19), the point at which the ratio of volume to capacity is considered a split failure (from 0 to 1) for the specified phase. For example, if the Saturation Rate is set to 1000 vehicles per hour and the Failure Threshold is set to 0.9 (i.e., 90%), then a split failure is written if the actual volume of cars for that phase reaches 900 in an hour (900 = 90% of 1000).

You can customize these settings for each signal. In the case of the Saturation Rate and Failure Threshold, you can also customize them for each *phase* of a signal.

#### To turn on MOE data collection in Centracs:

Before you can run the MOE reports, data must be collected on the controllers, then uploaded to Centracs.

**IMPORTANT** • After time, MOE data can consume a large quantity of storage space and cause performance problems in your system. It is recommended that you monitor your storage space, and archive and purge the MOE logs periodically. For details, refer to *Viewing Database Statistics* on page 20-99, *Archiving and Restoring Data* on page 20-89 and *Purging Report Data from the System* on page 20-94.

- 1 In the Entity Configuration window for the signal(s), make sure that the Enable MOE Logging option is turned on. This activates the MOE logging on the controller. Refer to *Entity Configuration Signals* on page 3-36.
- 2 From the main menu, select **Control ▶ Scheduler...** The Scheduler Entries window opens.
- 3 Click Add... The New Schedule Entry window opens.
- 4 In the Action dropdown list, expand the "Common" list of actions, then select **Upload MOE Logs**.

Settings

- 5 Enter a name for this schedule entry, such as "Upload MOE Data from Controllers".
- 6 Make sure that the Enabled checkbox is checked.
- 7 Click ... to the right of the "Entities" box. The Entity Selection window opens.
- 8 You can select one or more Systems, Sections, Subsections, Groups, and/or signals. For instructions on how to use the Entity Selection window, refer to page 3-18. After you have made your selections, click **OK**.
- **9** On the New Schedule Entry window, specify the date range for this schedule entry. You can select the "No end" option to run it indefinitely.
- **10** Specify the Start time for the upload. (The End time can be any time after the Start time.)
- 11 In the Recurrence box, specify how frequently to upload the logs from the controller(s). Because the controllers keep only 24 hours of data, it is recommended that you upload at least a few times per day (but no more frequently than one time per hour).
- 12 To enter any exceptions, such as holidays or vacation dates, expand the "Exceptions" section of the window and specify the days or dates. For details on how to add exceptions, refer to Using the Scheduler on page 7-11.
- **13** Click **OK**.

Your new MOE log upload schedule is now shown in the Scheduler Entries table. Optionally, you can configure an alert for the "MOE Upload Failed" event so you can be notified automatically if an upload problem occurs. For instructions, refer to **Using Triggers on page 4-25**.

**Note** • You can also upload MOE logs on demand via a manual command or an action set, or from the Entity Tree (right-click the signal and select Upload MOE Logs).

**Note** • The MOE log upload is an FTP-based upload. If the FTP username and password have been changed on the controller, you must change them in Centracs to match. You can change them for all controllers on the Default Comm Parameters window (page 20-10) or for a single controller on the Device Communication Configuration window (page 3-44).

Settings •

#### To run an MOE report:

1 From the Entity Tree, right-click a signal and select **MOE Reports**.

#### Or

From the Monitoring menu, select MOE Reports...

A sub-menu is shown with a list of the reports that are available.

- 2 Select one of the available MOE reports.
- 3 When the report window opens, specify the date for which to graph the performance statistics. You can type the date in the Date box, or you can select a date from the dropdown calendar.
- 4 If you launched the report from the Monitoring window, click to the right of the Signal field and select a signal from the Entity Selection window. For details, refer to Using the Entity Selection Window on page 3-18.
- 5 If available, specify any other options, such as the Phase or the type of graph to show.

Arrival On Green Report

## **Arrival On Green Report**

The Arrival On Green report graphs the percentage of vehicles that arrived at the signal during the green interval.

The time of day (in 24-hour format) is plotted on the X-axis, and the percentage of arrivals on green is plotted on the Y-axis. You can choose to plot each data point separately (scatter plot), or plot a continuous line to connect the points (line plot).

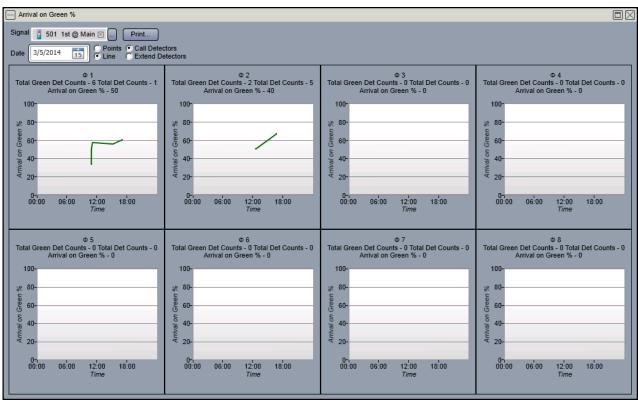
A separate graph is shown for each phase of a standard eight-phase controller.

#### To use this report:

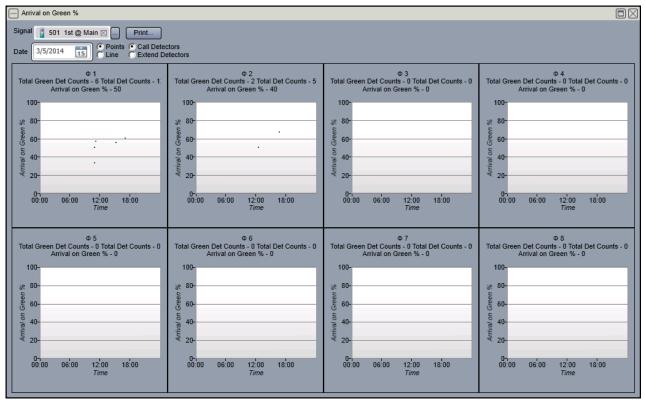
- If a signal is not already selected, click to the right of the Signal field and select a signal from the Entity Selection window. For details, refer to Using the Entity Selection Window on page 3-18.
- Enter a date, or click the calendar icon to select a date.
- To change between a line graph and a scatter plot of the data points, click the Line or Points radio button.
- To see data for detectors at the stop bar, click the Call Detectors radio button; to see data for upstream/advance detectors, click the Extend Detectors radio button. (To determine whether a detector is a Call detector or an Extend detector, Centracs uses the "Distance from Stop Bar" value in the Detector Configuration. If the detector is configured in the controller as a midblock detector that does not call or extend a phase (i.e., does not have a phase assigned), Centracs considers it an Extend detector for the purposes of the MOE reports.)

#### Using the MOE Reports

Arrival On Green Report



Sample line graph



Sample scatter plot

Cycle Length Report

# **Cycle Length Report**

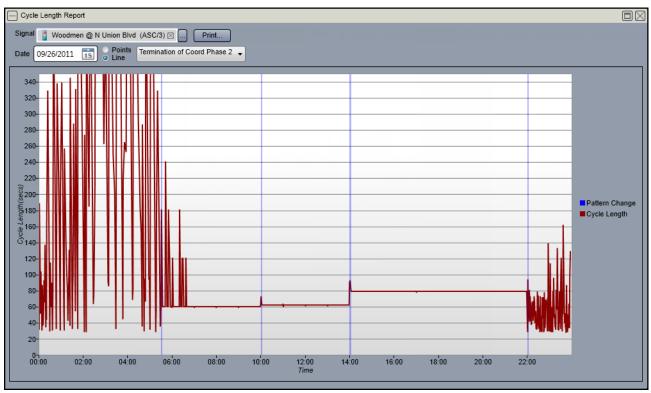
The Cycle Length report graphs the actual length of each cycle run by the controller during the day, in chronological order.

The time of day (in 24-hour format) is plotted on the X-axis, and the length of each cycle in seconds is plotted on the Y-axis. You can choose to plot each data point separately (scatter plot), or plot a continuous line to connect the points (line plot).

The blue vertical lines indicate the times of signal pattern changes.

#### To use this report:

- If a signal is not already selected, click in to the right of the Signal field and select a signal from the Entity Selection window. For details, refer to Using the Entity Selection Window on page 3-18.
- Enter a date, or click the calendar icon to select a date.
- To change between a line graph and a scatter plot of the data points, click the Line or Points radio button.
- From the dropdown list, specify what to base the cycle length calculations on: local zero, the termination of the Ring 1 coordination phase, or the termination of the Ring 2 coordination phase. (The R1 Coord Phase and R2 Coord Phase options on the MOE Settings window control the values shown in the dropdown list; refer to page 11-2.)



Sample line graph

## Using the MOE Reports

Cycle Length Report

Cycle Length Report	
Signal 🚦 Woodmen @ N Union Blvd (ASC/3) 🛛 Print	
Date 09/26/2011 15 Points Termination of Coord Phase 2	
340-	
320-	
300	
260-	
240-	
220-	_
\$200-	_
2200- 1/180- 1/180- 1/180-	Pattern Change Cycle Length
502200- 502200- 502200- 502200- 502200- 502200- 502200- 502200- 502200- 502200- 502200- 502200- 502200- 502200- 502200- 502200- 502200- 502200- 502200- 502200- 502200- 502200- 502200- 502200- 502200- 502200- 502200- 502200- 502200- 502200- 502200- 502200- 502200- 502200- 502200- 502200- 502200- 502200- 502200- 502200- 502200- 502200- 502200- 502200- 502200- 502200- 502200- 502200- 502200- 502200- 502200- 502200- 502200- 502200- 502200- 502200- 502200- 502200- 502200- 502200- 502200- 502200- 502200- 502200- 502200- 502200- 502200- 502200- 502200- 502200- 502200- 502200- 502200- 502200- 502200- 502200- 502200- 502200- 502200- 502200- 502200- 502200- 502200- 502200- 502200- 502200- 502200- 50200- 50200- 50200- 50200- 50200- 50200- 50200- 50200- 50200- 50200- 50200- 50200- 50200- 50200- 50200- 50200- 50200- 50200- 50200- 50200- 50200- 50200- 50200- 50200- 50200- 50200- 50200- 50200- 50200- 50200- 50200- 50200- 50200- 50200- 50200- 50200- 50200- 50200- 50200- 50200- 50200- 50200- 50200- 50200- 50200- 50200- 50200- 50200- 50200- 50200- 50200- 50200- 50200- 50200- 50200- 50200- 50200- 50200- 50200- 50200- 50200- 50200- 50200- 50200- 50200- 50200- 50200- 50200- 50200- 50200- 50200- 50200- 50200- 50200- 50200- 50200- 50200- 50200- 50200- 50200- 50200- 50200- 50200- 50200- 50200- 50200- 50200- 50200- 50200- 50200- 50200- 50200- 50200- 50200- 50200- 50200- 50200- 50200- 50200- 50200- 50200- 50200- 50200- 50200- 50200- 50200- 50200- 50200- 50200- 50200- 50200- 50200- 50200- 50200- 50200- 50200- 50200- 50200- 50200- 50200- 50200- 50200- 50200- 50200- 50200- 50200- 50200- 50200- 50200- 50200- 50200- 50200- 50200- 50200- 50200- 50200- 50200- 50200- 50200- 50200- 50200- 50200- 50200- 50200- 50200- 50200- 50200- 50200- 50200- 50200- 50200- 50200- 50200- 50200- 50200- 50200- 50200- 50200-	<u> </u>
δ <sub>140</sub>	· .
	·
	er e
00-00 02:00 04:00 06:00 08:00 10:00 12:00 14:00 16:00 18:00 20:00 22:00 Time	

Sample scatter plot

Flow Rate Report

## **Flow Rate Report**

The Flow Rate report graphs the volume of vehicles detected per hour during each time of the day for each phase. Centracs uses the volumes of vehicles shown in this graph to calculate the ratios for the Volume-to-Capacity report (page 11-21). A separate graph is shown for each phase of a standard eight-phase controller.

The time of day (in 24-hour format) is plotted on the X-axis, and the number of vehicles per hour is plotted on the Y-axis. You can choose to plot each data point separately (scatter plot), or plot a continuous line to connect the points (line plot).

The blue vertical lines indicate the times of signal pattern changes.

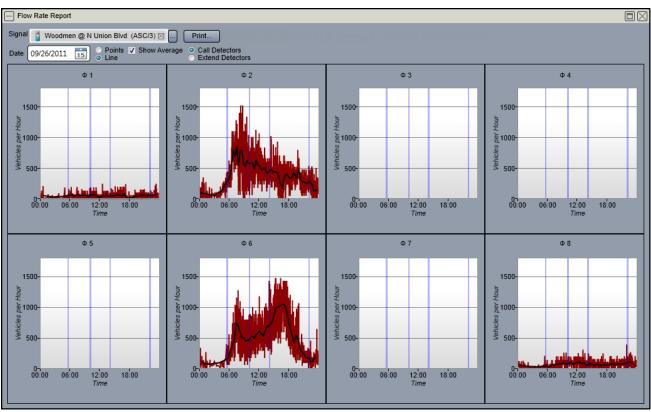
#### To use this report:

- If a signal is not already selected, click to the right of the Signal field and select a signal from the Entity Selection window. For details, refer to Using the Entity Selection Window on page 3-18.
- Enter a date, or click the calendar icon to select a date.
- To change between a line graph and a scatter plot of the data points, click the Line or Points radio button.
- To show a line that represents the moving average of the data points, enable the Show Average checkbox. The frequency with which the average values are calculated is determined by the "Counts to Avg" setting on the MOE Settings window (refer to page 11-2).
- To see data for detectors at the stop bar, click the Call Detectors radio button; to see data for upstream/advance detectors, click the Extend Detectors radio button. (To determine whether a detector is a Call detector or an Extend detector, Centracs uses the "Distance from Stop Bar" value in the Detector Configuration. If the detector is configured in the controller as a midblock detector that does not call or extend a phase (i.e., does not have a phase assigned), Centracs considers it an Extend detector for the purposes of the MOE reports.)

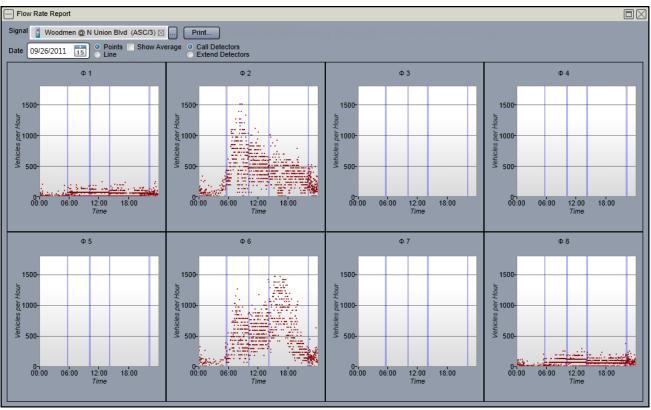
**Note** • If the data extends past the top of the graph, increase the Saturation Rate value on the MOE Settings window (refer to page 11-3).

#### Using the MOE Reports

Flow Rate Report



#### Sample line graph



Sample scatter plot

#### Green Times Report

# **Green Times Report**

The Green Times report graphs the actual length of the green interval for each cycle during the day, in chronological order. A separate graph is shown for each phase of a standard eight-phase controller.

The time of day (in 24-hour format) is plotted on the X-axis, and the length of the green time in seconds is plotted on the Y-axis.

The blue vertical lines indicate the times of signal pattern changes.

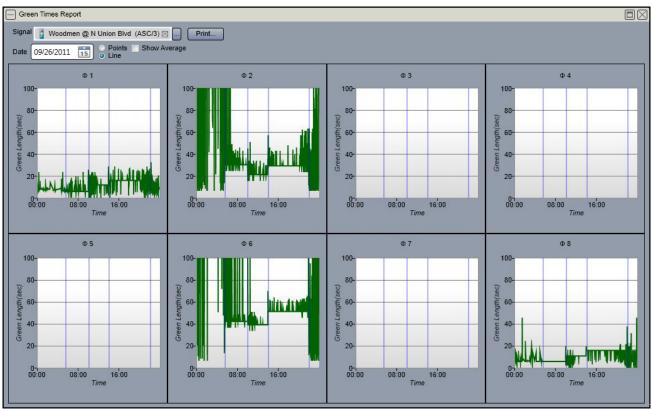
You can choose to plot each data point separately (scatter plot), or plot a continuous line to connect the points (line plot).

## To use this report:

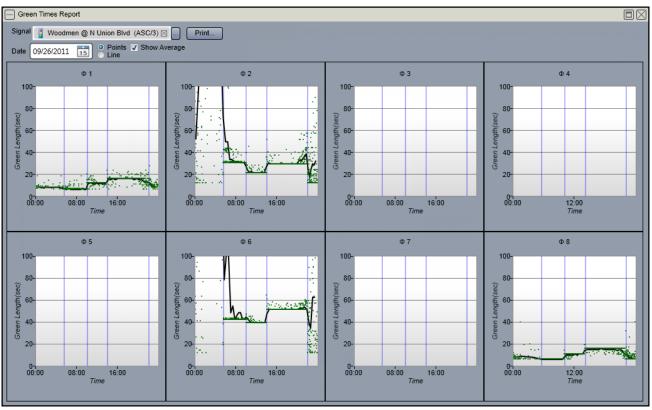
- If a signal is not already selected, click to the right of the Signal field and select a signal from the Entity Selection window. For details, refer to Using the Entity Selection Window on page 3-18.
- Enter a date, or click the calendar icon to select a date.
- To change between a line graph and a scatter plot of the data points, click the Line or Points radio button.
- To show a line that represents the moving average of the data points, enable the Show Average checkbox. The frequency with which the average values are calculated is determined by the "Counts to Avg" setting on the MOE Settings window (refer to page 11-2).

#### Using the MOE Reports

Green Times Report •



#### Sample line graph



Sample scatter plot

*Centracs User Manual* Software Version 2.x - March 2018 PCD Report

# **PCD Report**

The Purdue Coordination Diagram (PCD) report graphs the arrival time of each vehicle in relation to the actual green, red, and yellow times for the selected phase. After you determine whether the majority of vehicles arrive on green, yellow, or red, you can decide whether coordination is warranted and whether the current offsets are effective.

The time of day is plotted on the X-axis, and the Y-axis indicates a point of time within the cycle length; 0 on the Y-axis indicates the start of the cycle (i.e., the start of red) for the selected phase. The blue vertical lines indicate the times of signal pattern changes.

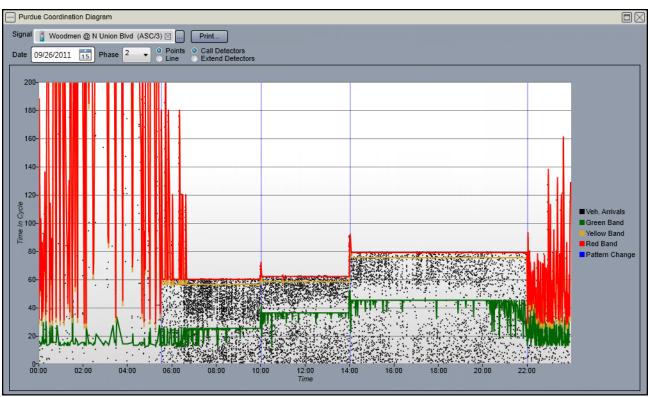
For each cycle, the graph shows green, yellow, and red lines — these indicate the start of the green, yellow, and red for the selected phase. Black dots indicate the detected arrival of vehicles at the signal for the selected phase. The Y coordinate of each black dot indicates the number of seconds after the cycle began that the vehicle was detected.

## To use this report:

- If a signal is not already selected, click to the right of the Signal field and select a signal from the Entity Selection window. For details, refer to Using the Entity Selection Window on page 3-18.
- Enter a date, or click the calendar icon to select a date.
- Select a phase from the dropdown list.
- To change between a line graph and a scatter plot of the data points, click the Line or Points radio button.
- To see data for detectors at the stop bar, click the Call Detectors radio button; to see data for upstream/advance detectors, click the Extend Detectors radio button. (To determine whether a detector is a Call detector or an Extend detector, Centracs uses the "Distance from Stop Bar" value in the Detector Configuration. If the detector is

#### Using the MOE Reports

PCD Report •

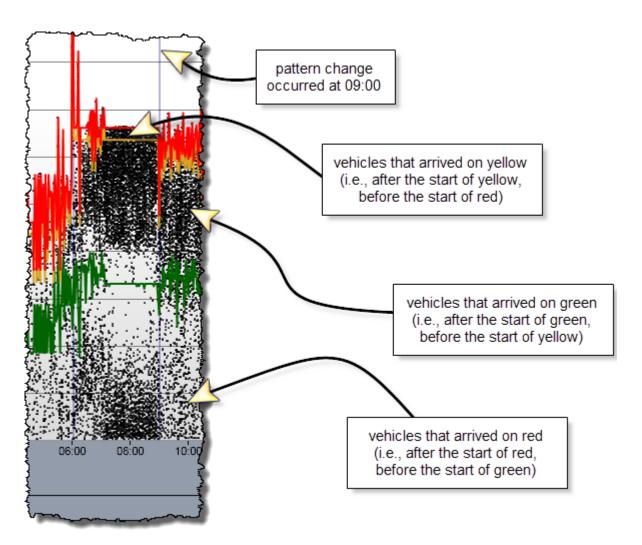


configured in the controller as a midblock detector that does not call or extend a phase (i.e., does not have a phase assigned), Centracs considers it an Extend detector for the purposes of the MOE reports.)

Sample scatter plot

The section of the graph shown below explains how to interpret the vehicle arrival dots. In this example, the vehicle counts are highest after the start of green.

PCD Report



## **Percentage Pedestrian Calls Report**

The Percentage Pedestrian Calls report graphs the number and percentage of cycles during which a pedestrian call occurred. After you monitor how frequently the pedestrian phases are serviced during the day, you can assess their impact on coordination. A separate graph is shown for each phase that has a programmed walk time, including exclusive ped phases.

If you turn on the **Show Counts** option, the graph shows the *number* of cycles that had a ped call; if you turn it off, the graph shows the *percentage* of cycles that had a ped call.

For each graph, the time of day (in 24-hour format) is plotted on the X-axis, and the percentage or number of cycles in that phase that had a ped call is plotted on the Y-axis.

The blue vertical lines indicate the times of signal pattern changes.

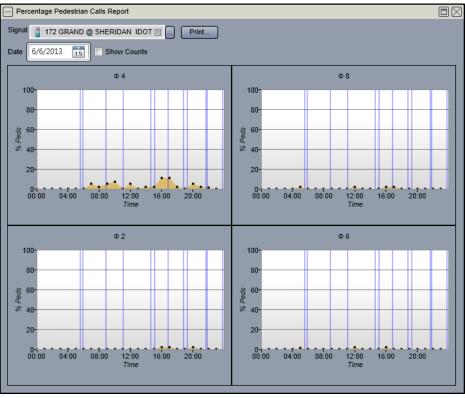
The "Bin Time" value on the MOE Settings window (page 11-2) determines the number of minutes represented by each data point on the graphs. For example, because each graph on this report represents a 24-hour period, if you enter a value of 60 in the Bin Time field, there will be 24 points plotted on each graph (where each point represents a period of 60 minutes). With a value of 30, there will be 48 points. As you increase the Bin Time, the number of points on each graph decreases; as you decrease the Bin Time, the number of points increases.

## To use this report:

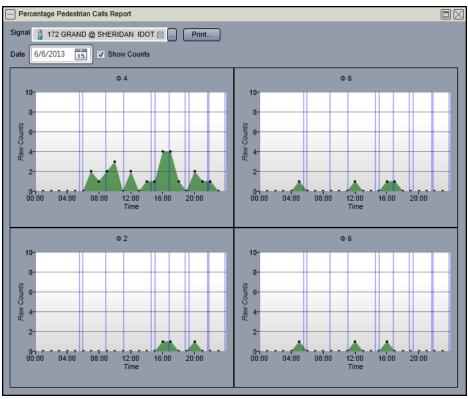
- If a signal is not already selected, click to the right of the Signal field and select a signal from the Entity Selection window. For details, refer to Using the Entity Selection Window on page 3-18.
- Enter a date, or click the calendar icon to select a date.

#### Using the MOE Reports

#### Percentage Pedestrian Calls Report



Sample percentage graph



Sample counts graph

## **Split Failures Report**

The Split Failures report graphs the number of times during the day that the volume-tocapacity ratio was larger than or equal to the user-specified Failure Threshold (page 11-3). A separate graph is shown for each phase of a standard eight-phase controller.

The time of day is plotted on the X-axis, and the number of split failures is plotted on the Y-axis. The blue vertical lines indicate the times of signal pattern changes.

The Bin Time value on the MOE Settings window (page 11-2) determines the number of minutes represented by each bar in the bar graphs. For example, because each graph on this report represents a 24-hour period, if you enter a value of 60 in the Bin Time field, there will be 24 bars on each graph (where each bar represents a period of 60 minutes). With a value of 30, there will be 48 bars. As you increase the Bin Time, the number of bars on each graph decreases; as you decrease the Bin Time, the number of bars increases.

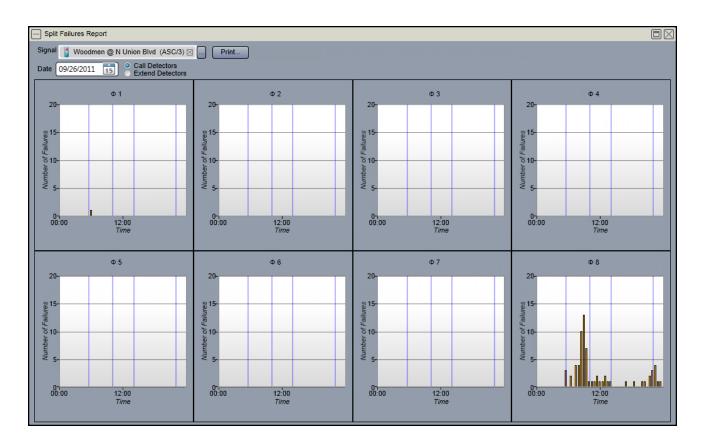
#### Note • If the bars extend past the top of the graph, decrease the Bin Time value.

### To use this report:

- If a signal is not already selected, click to the right of the Signal field and select a signal from the Entity Selection window. For details, refer to Using the Entity Selection Window on page 3-18.
- Enter a date, or click the calendar icon to select a date.
- To see data for detectors at the stop bar, click the Call Detectors radio button; to see data for upstream/advance detectors, click the Extend Detectors radio button. (To determine whether a detector is a Call detector or an Extend detector, Centracs uses the "Distance from Stop Bar" value in the Detector Configuration. If the detector is configured in the controller as a midblock detector that does not call or extend a phase (i.e., does not have a phase assigned), Centracs considers it an Extend detector for the purposes of the MOE reports.)

#### Using the MOE Reports

Split Failures Report



# **Volume-to-Capacity Report**

This report graphs the volume-to-capacity ratio for each time of the day for each phase. Centracs uses this ratio to determine when split failures occur (refer to the *Split Failures Report* on page 11-19). It is calculated as:

*Volume-to-Capacity = actual number of detected vehicles in an hour / capacity* 

Capacity is calculated as:

Capacity = saturation (green time for the phase / cycle length)

where *saturation* is the user-specified Saturation Rate (i.e., the maximum capacity of vehicles per hour for the specified phase, refer to page 11-3).

A separate graph is shown for each phase of a standard eight-phase controller.

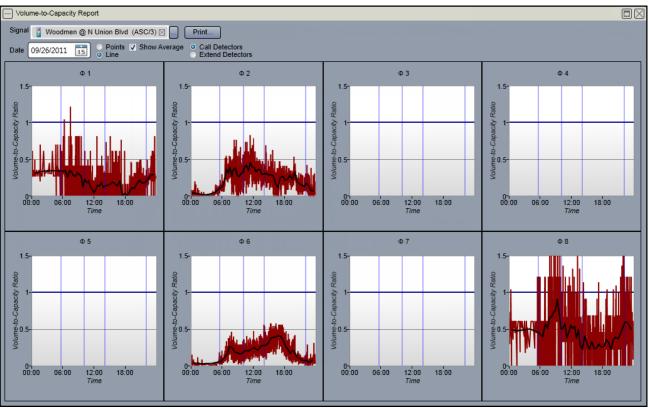
The time of day (in 24-hour format) is plotted on the X-axis, and the volume-to-capacity ratio is plotted on the Y-axis. You can choose to plot each data point separately (scatter plot), or plot a continuous line to connect the points (line plot).

The blue vertical lines indicate the times of signal pattern changes.

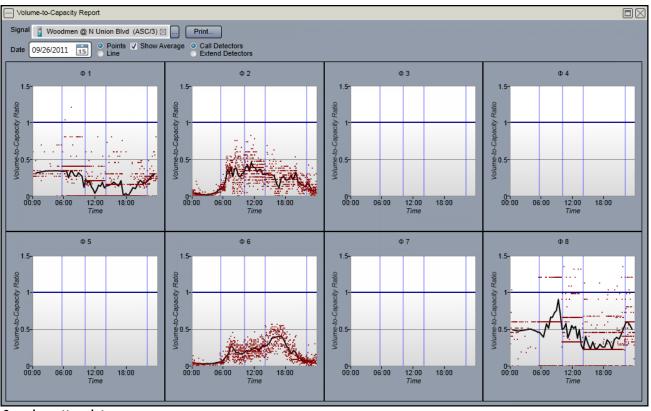
## To use this report:

- If a signal is not already selected, click to the right of the Signal field and select a signal from the Entity Selection window. For details, refer to Using the Entity Selection Window on page 3-18.
- Enter a date, or click the calendar icon to select a date.
- To change between a line graph and a scatter plot of the data points, click the Line or Points radio button.
- To show a line that represents the moving average of the data points, enable the Show Average checkbox. The frequency with which the average values are calculated is determined by the "Counts to Avg" setting on the MOE Settings window (refer to page 11-2).
- To see data for detectors at the stop bar, click the Call Detectors radio button; to see data for upstream/advance detectors, click the Extend Detectors radio button. (To determine whether a detector is a Call detector or an Extend detector, Centracs uses the "Distance from Stop Bar" value in the Detector Configuration. If the detector is configured in the controller as a midblock detector that does not call or extend a phase (i.e., does not have a phase assigned), Centracs considers it an Extend detector for the purposes of the MOE reports.)

• Volume-to-Capacity Report



Sample line graph



Sample scatter plot

# **Using Server-to-Server**

With the Server-to-Server feature (S2S, for short), you can exchange real-time traffic data with the Centracs systems of other agencies. You can configure the permissions for the neighboring agencies such that they can only *view* your entities, or such that they can also issue commands to your entities. You can also control which entities are shared with other agencies.

**Note** • For information about how Centracs resolves scheduling conflicts when multiple commands try to control the same signal at the same time, refer to *Scheduling Conflicts* on page 7-2.

# **Configuring Server-to-Server (S2S)**

To set up two-way communications between two Centracs systems, the procedures below must be performed on *both* of the shared servers (i.e., your server and the other agency's server).

**IMPORTANT** • All shared S2S servers must run the same version of Centracs. If one agency upgrades to a new version, all shared S2S servers must upgrade at the same time.

- Setting Permissions for the External Agency. To configure S2S, the first step is to decide the levels of permissions to grant to users from the other agency. For example, you can grant view-only access, or you can also grant the ability to issue commands to your entities. These permissions are defined as they would be for any Centracs user in your own organization i.e., with roles.
  - a **Configuring Roles.** For instructions on how to add and assign roles, refer to these sections:

Overview of Security on page 20-11 Defining Jurisdiction Roles on page 20-14 Defining Application Roles on page 20-19 Defining User Roles on page 20-23

**Note** • It is irrelevant which Jurisdiction you assign to the external agency's Jurisdiction Role, because you will select which entities you want to share with the external agency in step 4 on page 12-4.

• Configuring Server-to-Server (S2S)

**Note** • Regardless of their permissions, users on remote systems *cannot* edit the Entity Configuration properties of your entities.

b Adding a Centracs User. After the necessary roles have been set up in Centracs, open the Users window (Management ➤ Users...) and add a Centracs user account to be assigned to the external agency. For example, a user name similar to agencynameS2S (e.g., LittletonS2S) or S2Sagencyname (e.g., S2SLittleton) would be appropriate. When you select a User Role from the Role dropdown, you are selecting the role permissions that will be given to that agency. For details on the Users window, refer to Defining Users on page 20-24.

**Note** • You can also set up individual people at the other agency as "Recipients" so that they can receive offline alerts. For details, refer to *Defining Recipients* on page 20-73.

- c Adding a Windows User. After the necessary permissions have been set up in Centracs, you must define a local (non-domain) Windows user name and password for the external server:
  - On the Centracs Core machine, open either the Computer Management screen or the Server Manager screen in Windows, then go to Local Users and Groups. (The method to open these screens depends on your Windows version.)
  - Add a new user, such as *agencyname* (e.g., Littleton). Refer to your Windows documentation for instructions.

When you define the user, turn off the "User must change password at next logon" option, and turn on the "User cannot change password" and "Password never expires" options.

- Provide the new user name and password to the administrator of the external server; the administrator must configure the Server-to-Server Settings window on their Centracs system with this user name and password.
- 2 Defining the External Centracs Server You Want to Access.
  - a From the main menu, select Management ▶ Server-to-Server... The Server-to-Server Settings window opens.

	Server-to-Serve	er Settings						
Specify external servers from which entities will be accessed and shown locally.								
E	Add E	dit X Delete						
Na	me	Location URL	Username					
Eng	glewood	net.tcp://172.20.96.68:5012	JM3-040914\Denver					
					Close			

- Configuring Server-to-Server (S2S) •
- **b** To define a new server, click **+ Add**. The Edit Connection window opens.

Edit Connection	
Connection Name	New
Location URL	net.tcp://server:5012
Server-to-Server remo	ote service endpoint; e.g., net.top://server:5012
Username	
Windows username to	use when connecting to the remote server
Password	
Windows password to	use when connecting to the remote server
	OK Cancel

- c Enter a name for the external server (this can be the host name, IP address, or any unique name), the location URL, and the user name and password given to you by the administrator of the external server.
- d To save your changes, click **OK**.

Server-to-Server Settings									
Specify external servers from which entities will be accessed and shown locally.									
Add Edit X Delete									
Name	Location URL	Username							
Littleton	net.tcp://172.20.96.155:5012	JM2-040914\Denver							
Englewood	net.tcp://172.20.96.68:5012	JM3-040914\Denver							
				Close					

- **3** Assigning Credentials to the External Server. You must associate the external server with its Windows/Centracs credentials:
  - a From the main menu, select Management ▶ External Connections... The External Connections window opens.
  - **b** Click **+Add**. The Add Connection window opens.

E	Add Connection		
	Select ty	ype of connect	ion
	Name	Version	
	Server-to-Server	0.0.0.1	
			OK Cancel

- Configuring Server-to-Server (S2S)
  - c Select Server-to-Server and click OK.

External Connections							
Server-to-Server Littleton	Configure C2C and S2S connections						
Server-to-Server	Type Server-to-Server Name Server-to-Server Littleton						
Server-to-Server Englewood	Connection Credentials						
Server-to-Server	Credentials LittletonS2S						
	Select a set of user permissions to associate with this connection.						
	Windows User Littleton						
The name of the Windows user account that the external service will use to connect with Centracs.							
Entity Sharing							
	Specify External Servers that are allowed to share local entities						
	+ Share X Remove						
	System Root Virtual System Root						
Add X Delete							

- **d** In the Name field, change the default name to a unique name for the external agency's S2S server.
- e Under the Connection Credentials section, use the Credentials field to select the Centracs user account you created earlier.
- **f** Use the Windows User field to enter the Windows user name you created earlier. This is case-sensitive.
- g Click Save.
- **4 Sharing Entities with the External Server.** You must specify the entities that the external agency can see and/or control:
  - a From the main menu, select Management ▶ External Connections... The External Connections window opens.

Configuring Server-to-Server (S2S) •

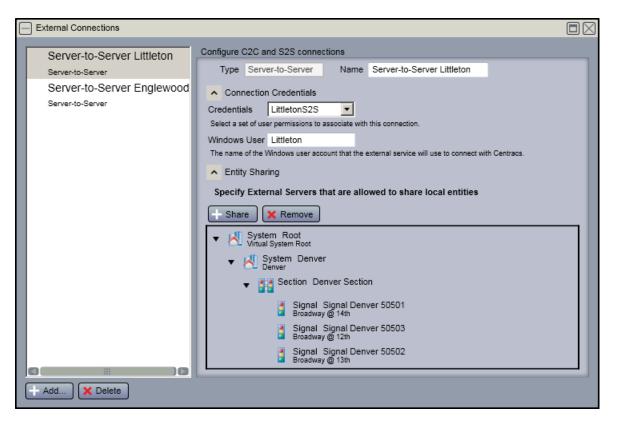
<ul> <li>External Connections</li> </ul>		
External Connections  Server-to-Server Littleton Server-to-Server Server-to-Server Englewood Server-to-Server	Configure C2C and S2S connections          Type       Server-to-Server       Name       Server-to-Server Littleton         Connection Credentials       Credentials       LittletonS2S       Select a set of user permissions to associate with this connection.         Windows       User       Littleton         The name of the Windows user account that the external service will use to connect with Centracs.         Entity       Sharing         Specify       External Servers that are allowed to share local entities	
Add X Delete	System Root     Virtual System Root	

**b** On the left side of the window, select the external server to share entities with:

- **c** Under the Entity Sharing section, click **+ Share...** The Entity Selection window opens.
- d Select one or more entities (Signals, Sections, etc.) to share with the external server. For details, refer to *Using the Entity Selection Window* on page 3-18.

Note that all child entities of the entities you select are also shared. For example, if you share a Section, all Subsections, Groups, Signals, Detectors, etc. under that Section are also shared. If it is necessary to share a parent entity but not all of its child entities, you can add a new Group entity that contains only the entities you want to share. Then select the new Group entity on this window.

• Configuring Server-to-Server (S2S)



The window shows the entities to be shared.

e Click Save.

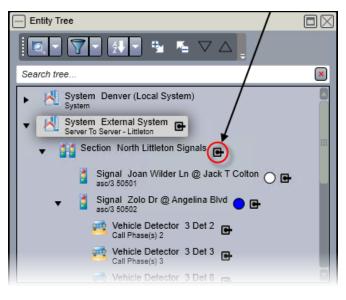
Using Server-to-Server (S2S)

# Using Server-to-Server (S2S)

After the Server-to-Server settings have been configured, you can:

- View the status of the connection to an external server
- View the status of each external device on the Device Status window (page 6-23)
- Send "Set Pattern" and "Set Time" commands to the external server (if permitted by the other agency) using manual commands or the scheduler
- View the other agency's shared entities in the Entity Tree
- View the other agency's shared entities on the map

Entities that have been shared with you by another agency are shown in the Entity Tree along with your own local entities. You can easily identify the external entities by the symbol below:



Hold the mouse over the symbol to see the name of the external system that owns the entity.

As with local entities, you can right-click an external entity to see a list of available commands. For example, if the external agency has granted you permission to send manual commands to their entities, the Manual Command option is available in the list. You can also double-click an external entity to open its status window.

**Note** • In order to perform actions (such as manual commands) on external entities in your system, the Jurisdiction Role assigned to your User ID must have permissions for the Jurisdiction that is configured as the default jurisdiction in your local Centracs system. Otherwise, you can only view them.

External entities are automatically integrated into your local map. In the Map Viewer, you can see both your own local entities and the external entities without any further

• Using Server-to-Server (S2S)

configuration. As with local entities, you can right-click an entity and "zoom" to it on the map.

You are permitted to see the properties of external entities, but not to edit them.

For information on how to see the status of a S2S connection, refer to *Viewing S2S Systems Status* on page 12-9.

You can also use the tools below for external entities:

- Comm Test (page 6-16)
- Device Status (page 6-23)
- Manual Commands (page 7-8)
- Notes (page 3-14)
- Device Collection Monitor (page 6-19)
- Traffic Algorithms (page 13-5)

Note • External entities are not included in the Centracs reports.

Viewing S2S Systems Status

## **Viewing S2S Systems Status**

Each external server is represented by a separate kiew icon in the Centracs status bar. If you have multiple external servers, roll your mouse over each icon to see the server name:



## To get more details:

click the Server-to-Server Status icon in the status bar. The Server-to-Server Status window opens:

Server-to-Server Status	$\Box \boxtimes$
Status Name : Littleton Connected : True	
Organization Information Name : Colorado Springs Location : Fillmore @ Professional Place Function : Development	

## Or

From the main menu, select Monitoring > Server-to-Server Status... The Systems Status window opens.

E	System	s Status		
	Name	Organization	Connected	
	Littleton	Littleton Fillmore @ Professional Plaza Development	True	

Both of these windows show whether your system is currently connected to the external server (True or False), and show some basic information about the external server. Note that the first Name field is populated from the Server-to-Server Settings window

on your system; the Organization information is populated from the Organization Information window (accessed via the **File ▶ Settings** option) on the external system.



# **Using Traffic Responsive**

# Introduction to Traffic Responsive (TR)

The Centracs Traffic Responsive (TR) algorithm offers real-time traffic flow assessment and pattern selection. Based on the threshold-based algorithm specifications from the U.S. Department of Transportation, Centracs TR uses multiple user-specified traffic flow threshold levels to make pattern selections. System detector counts are grouped by location and direction to obtain the level of detail necessary to apply the data to three classifications of thresholds. These three threshold classifications identify different types of traffic patterns, including:

- degree of arterial saturation (cycle threshold)
- inbound verses outbound demand, such as north verses south (offset threshold)
- arterial verses side street demand, such as north-south verses east-west (split threshold)

Also, there are two occupancy override options to identify over-saturated conditions and apply specific patterns to give priority to the saturated movements.



• Introduction to Traffic Responsive (TR)

Unlike adaptive algorithms, such as those in Centracs Adaptive, TR does not change programmed controller values, like split times or offsets. Rather, from the group of patterns that have been configured, TR selects the pattern best suited to the current conditions (you must set up these patterns before the algorithm runs). In order for TR to operate to its fullest potential, you must design these pre-programmed patterns to handle the conditions that TR identifies when it runs. For example, high demand in a specific direction requires the selected pattern to address the heightened demand, perhaps with more split time allocated to the movement(s) in question. If patterns are not configured correctly to address the traffic conditions identified by the algorithm, TR does not have the ability to enhance the pattern or change any other timing parameters.

Usually, scheduled time-of-day-based pattern selection can accommodate predictable traffic variations, and TR is not necessary. TR is best suited to changing, unusual, or unpredictable traffic situations, such as:

- sporting events
- day-of-the-week variations
- holidays/special days
- adverse weather
- crashes/incidents

TR also helps you to achieve more precise time-of-day pattern changes during normal traffic conditions.

You can configure each TR algorithm to control a Section, Subsection, and/or Group of intersections. For the sake of brevity, the TR documentation uses the term "Section" to refer to all three of these entity types that TR can control.

Because you can use the Centracs scheduler to turn TR on and off for a Section, you can configure TR to run at specific times of the day, on specific days of the week, for specific date ranges, etc. This gives you flexibility in your operations.

Detector Data •

## Detector Data

Good detection is critical to the successful operation of TR. The goal in detector placement is to measure flow characteristics. Usually, advanced detection is most effective at least 40 to 60 feet from the stop bar. In some circumstances it may be necessary to identify excessive queue lengths so that you can apply special patterns to decrease those queues. Detectors installed at the upstream queue locations can feed occupancy data to dedicated override channels that can then select a specific pattern to address the situation.

TR is flexible in that you can include detectors in the algorithm even if they are not connected to controllers within the Section that is under TR control. You can use any correctly configured, functioning system detector in any TR algorithm, any number of times. If you use the Server-to-Server interface to connect to other systems/agencies, the detectors from those systems are also available for use.

To minimize the effects of detector malfunctions and/or intermittent communication problems, Centracs replaces missing or bad system detector data while it does its calculations. To do so, it:

1 Averages all good records for the last half hour.

If this is not possible, then it...

2 Averages all good records for 15 minutes before and up to 15 minutes after the missing data time for the same day of the week; it can go back four weeks if necessary.

If this two-step procedure fails, that record is not used in the calculations.

#### Channels

## Channels

A channel is a way to group detectors. Detectors are assigned to channels based on their location or purpose. After detectors have been assigned, channels aggregate the detector data such that the end values can be associated in threshold levels for pattern selection.

There are six channels:

- Inbound Used to group detectors for one of the main thru or coordinated directions, such as Northbound.
- Outbound Used to group detectors for the opposite main/coordinated direction, such as Southbound.
- Sidestreet Usually used to group detectors for the opposing thru directions, such as Eastbound-Westbound. But if necessary, you can use Sidestreet (if configured correctly) for protected turn phases on the main street or side street (but not both).
- Arterial A pseudo-channel made of Inbound plus Outbound values. You do not assign detectors to the Arterial channel; rather, you use this channel to specify the maximum V+kO value. This maximum is the highest V+kO value expected for the Section in one direction only (Inbound or Outbound). Centracs uses this value to change the other channel output values into a percentage value.
- Occupancy Override 1 & 2 These two channels are intended to group detectors whose occupancy values are used to identify highly congested movements or queues that interfere with flow. When the override is in effect, the pattern selected takes precedence over normal TR operation. When both overrides are in effect, the second override takes precedence over the first.

After you assign system detectors to channels, then Centracs:

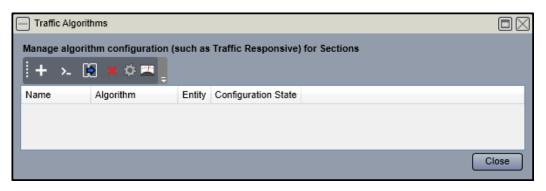
- 1 Calculates a scaled volume plus weighted occupancy (Scale \* (V+kO)) for each channel based on the detectors assigned to the channel.
- 2 Combines the channel values mathematically to derive a cycle value, offset value, and split value.
- **3** Compares the derived cycle/offset/split values to the programmed thresholds and determines cycle/offset/split percentages:
  - Cycle % = Arterial V+kO / Max V+kO
  - Offset % = Inbound V+kO / Arterial V+kO
  - Split % = Arterial V+kO / (Arterial V+kO + Side Street V+kO)

Creating a Traffic Algorithm

# **Creating a Traffic Algorithm**

## To add a new traffic algorithm:

1 From the main menu, select **Configuration ▶ Traffic Algorithms...** 



2 Click the Add Algorithm icon 🛨. The Algorithm Configuration window opens.

Ē	Algorithn	n Configuration	$\Box \boxtimes$
		name and type for the algorithm, and select one or r o include in the calculations	nore
	Name		
	Туре	Traffic Responsive (Threshold)	
	Entities		
l			
		ОКС	ancel

- **3** Enter a name for the algorithm.
- 4 From the Type dropdown list, specify Traffic Responsive or Centracs Adaptive.
- **5** In the Entities field, click and select one or more Sections, Subsections, or Groups from the Entity Selection window. For instructions on how to use the Entity Selection window, refer to page 3-18.
- 6 Click **OK**. The new algorithm is shown in the table with a Configuration State of "Not Configured".

Traffi	c Algorithms								
	Manage algorithm configuration (such as Traffic Responsive) for Sections								
. •	<u>&gt;- 🖻 × X</u>								
Name		Algorithm	Entity	Configuration State					
Woodn	nen Rd Corridor	Traffic Responsive (Threshold)	👬 Woodmen Rd	Not Configured					
					Close				

- Creating a Traffic Algorithm
  - 7 Select the new algorithm in the table and click the Configure Algorithm icon 2, or right-click the algorithm and select the **Configure...** option.

For TR algorithms, the Threshold Traffic Responsive window opens. Set values on the various tabs and click **OK**. For details about this window, refer to *Configuring Channels, Thresholds, and Patterns* **on page 13-8**.

For Adaptive algorithms, the Adaptive Controller Settings window opens. For details about this window, refer to *Configuring Adaptive Controller Settings* on page 18-8.

Optionally, to change the values for the matrix you chose from the "Threshold and Pattern Matrix" dropdown (or to add a new matrix), you can click to the right of the dropdown, or you can select the algorithm from the Traffic Algorithms table and click the Configure Thresholds icon . The Thresholds and Pattern Matrices window opens.

latrix 1 Venture New X Delete Rename Copy									
hresholds Cycle Levels	Pattern N		vel Split Level				Pattern		
Cycle percent is arterial V+kO divided by Max V+kO	-		ver Spilt Lever						
3 66 - ∞ % 61 븆 🗄	1	1	1	Pattern	1	Free	C Flash	C Local	O No Pattern
33 - 66 % 28 🔶 🕀 🔛	1	2	1	Pattern	1	O Free	O Flash	O Local	O No Pattern
0 - 33 %	1	3	1	Pattern	1	O Free	C Flash	O Local	O No Pattern
Offset Levels (inbound vs. outbound bias) Offset percent is inbound V+kO divided by inbound plus outbound V+kO. Higher values imply heavier inbound traffic; lower values imply heavier outbound traffic.	2	1	1	Pattern	1	O Free	Second Flash	O Local	O No Pattern
66 - 100 % 61 🔸 🖸	2	2	1	Pattern	1	O Free	Second Se	O Local	O No Pattern
33 - 66 % 28 🐳 🖸 🗶	2	3	1	Pattern	1	O Free	O Flash	O Local	O No Pattern
0 - 33 %	3	1	1	Pattern	1	O Free	C Flash	O Local	No Pattern
Split Levels (arterial vs. sidestreet bias) Split percent is arterial V+kO divided by arterial plus sidestreet V+kO. Higher values imply heavier arterial traffic lower values imply heavier sidestreet traffic.	3	2	1	Pattern	1	O Free	O Flash	O Local	No Pattern
0 - 100 %	3	3	1	Pattern	1	O Free	Flash	C Local	No Pattern
Occupancy Overrides Set the percent occupancy at which the occupancy override patterns become active. Leave blank to disable the override(s).						<u> </u>			
Dverride 1 - %									
Dverride 2 - %	Occupa	ancy Override:	3						
Decreasing Hysteresis (%) 5	Override	e 1 Disabled							
Amount that will be subtracted from the low end of a level's range when the cycle, offset, or split value is decreasing. This reduces the possibility of bouncing to and from a level.	Override	2 Disabled							

For more details about this window, refer to *Configuring Channels, Thresholds, and Patterns* on page 13-8.

8 After you have set all the necessary values, click **Save**, then click **Close**.

Traffic Algorithms								
Manage algorithm confi	guration (such as Traffic Respo	nsive) for Sections						
Name	Algorithm	Entity	Configuration State					
Woodmen Rd Corridor	Traffic Responsive (Threshold)	👬 Woodmen Rd	Complete					
				Close				

The algorithm is shown in the Traffic Algorithms table with a Configuration State of "Complete" (unless you did not select a value for the "Threshold and Pattern Matrix" field or you did not specify at least one detector for at least one of the channels; in this case, the algorithm is shown with a Configuration State of "Incomplete").

As an alternative to the icons, you can right-click a row in this table to show a pop-up menu with options to edit, monitor, configure, and delete the algorithm.

## To copy an existing traffic algorithm:

1 From the main menu, select Configuration > Traffic Algorithms...

Traffic Algorithms								
Manage algorithm configuration (such as Traffic Responsive) for Sections								
Name	Algorithm	Entity	Configuration State					
Woodmen Rd Corr	ridor Traffic Responsive (Threshold)	🔢 Woodmen Rd	Complete					
			· ·	Close				

- 2 Select the algorithm you want to copy.
- 3 Click the Copy Algorithm icon 💽. The Algorithm Configuration window opens, where you can enter a name for the copy. You can also add or remove entities, if needed, but you cannot change the algorithm type.
- 4 Click **OK**. The new algorithm copy is shown in the table, and includes all the same configuration settings as the original algorithm you copied.

Configuring Channels, Thresholds, and Patterns

# **Configuring Channels, Thresholds, and Patterns**

## To configure the Traffic Responsive (TR) thresholds and pattern matrices:

1 Open the Threshold Traffic Responsive window from the Traffic Algorithms window (select an algorithm in the table and click the Configure Algorithm icon , or right-click the algorithm and select the **Configure...** option).

Threshold Traffic Responsive - Woodmen Rd Corridor
Computational Channels Settings Arterial Inbound Outbound Sidestreet Occupancy Override 1 Occupancy Override 2 Disable Logging Do not log TR computations to the database.
Interval (mins) 10 Frequency with which TR runs on this Section, in minutes.
Reference Time         00:00           Time at which TR will increment its interval, in 24-hour format. This is not a start time. For example, a Reference Time of 15:20 and an Interval of 15 minutes will cause TR to compute at 15:05, 15:20, 15:35, 15:50, 16:05, and so on.
Min Pattern Execution Time         0           Number of minutes that must pass before TR will send a pattern change. A value of 0 sends pattern changes as they are computed.
Threshold and Pattern Matrix
k (from V+kO as %)         25           Occupancy scaling factor in the V+kO equation, as a percent. For example, a value of 100 uses the full occupancy in the equation, 25 uses 1/4 occupancy, 0 uses no occupancy, and 300 uses three times the occupancy.
Immediate Update Threshold (%) If the change between the previous channel value and the new value (before smoothing) exceeds this threshold, TR skips threshold levels and goes directly to the one that corresponds to the new channel value. Normally, threshold levels can only change by one.
Cycle Levels (%) 20
Offset Levels (%) 20
Split Levels (%) 20
OK Cancel Apply

- 2 Use the first tab to specify general settings for TR:
  - **Disable Logging** Permits Centracs to calculate the algorithm, but the results are not saved for use in the Traffic Responsive report (page 10-55). You can only see the results in the real-time monitoring window (page 13-16).
  - Interval Indicates how frequently Centracs will calculate the algorithm, in minutes (from 1 to 120).
  - Reference Time Sets a reference point in time from which the calculation interval is measured (from 00:00 to 23:59). This is *not* the time at which calculations will *start* — by default, calculations start as soon as the algorithm is fully configured (unless you manually disable them). For example, if you set the Interval to 10 minutes and the Reference Time to 13:15, and if you complete the configuration of the algorithm at 12:00, Centracs does not wait until 13:15 to start calculations.

Rather, the algorithm is computed at 12:05, 12:15, 12:25, 12:35, 12:45, 12:55, 13:05, 13:15, 13:25, and so on. Calculations continue indefinitely, unless you turn on the "Disable TR on Section" option.

- Min Pattern Execution Time Specifies when pattern selections will be sent to the controllers (from 0 to 300 minutes). For example, if set to 0, a pattern is sent as soon as it is selected by TR; if set to 10, Centracs waits ten minutes before it sends the newly selected pattern to the controllers. This is used to avoid frequent pattern changes because of minor changes in values. This is similar to the Decreasing Hysteresis option (described below). Min Pattern Execution Time should either be 0, or be greater than the Interval time.
- Threshold and Pattern Matrix You can select a previously configured matrix from a dropdown list, or you can click to add a new one. (Refer to the instructions below.)
- k The factor to use (from 0 to 100000%) to scale the occupancy value when Centracs calculates V+kO (weighted volume-plus-occupancy). For example: If set to 100 (%), the true occupancy value is added to the volume. If set to 25 (%), one-quarter of the occupancy value is added to the volume. If set to 0 (%), the occupancy is essentially removed from the equation. If set to 300 (%), the occupancy value is multiplied by 3 before it is added to the volume.
- Immediate Update Threshold When these three options are set to 0, TR does not permit threshold levels to be skipped when traffic conditions change; rather, the levels must be stepped-through consecutively, one at a time. For this reason, when TR is started or restarted (for example, if the Core service is restarted on the server machine), it can take some time to step through the levels and stabilize. The Immediate Update Threshold options can override this behavior and permit levels to be skipped if the difference between the prior values and the new values is higher than a specified percentage. To use this feature, enter a percentage from 1 to 100% for Cycle Levels, Offset Levels, and Split Levels. If the numbers are low, levels will be skipped more frequently; if the numbers are high, levels will be skipped less frequently.

Configuring Channels, Thresholds, and Patterns

**3** click the Inbound, Outbound, Sidestreet, and Occupancy Override tabs to configure the computational channels. For example:

Threshold Traffic Responsive - Woodmen Rd Corridor								
Computational Channels								
Mode  Average  Specifies how to use detector counts in the channel V+kO calculation.								
Smoothing (%) 20 Percent of the previous V+kO calculation to use on new channel V+kO calculations. The larger the percent, the smaller the changes will be to new V+kO values.								
Minimum Good Detectors 1 Minimum number of detectors that must be non-faulted and whose counts must be valid in order for TR to operate on this channel.								
Volume Scaling (%)         100           Scales the volume of the channel before performing the V+kO calculation; based on the Mode, one of the following is modified: the average of all detectors' volumes, the detector with the highest volume, or the detector with the second-highest volume.								
Occupancy Scaling (%) 100 Scales the occupancy of the channel before performing the V+kO calculation; based on the Mode, one of the following is modified: the average of all detectors' occupancies, the detector with the highest occupancy, or the detector with the second-highest occupancy.								
Detector Assignments Select the detectors that will feed this computational channel.								
Add X Remove								
Detector Volume Scaling % Occupancy Scaling %								
OK Cancel Apply								

On each of these tabs, to assign detectors to the channel, click **Add...** and select the detectors from the Entity Selection window. For instructions on how to use the Entity Selection window, refer to page 3-18.

4 click the Arterial tab and set the parameters accordingly:

Threshold Traffic	ic Responsive - Woodmen Rd Corridor						
Settings	Computational Channels						
	se the inbound and outbound channel V+kO calculation.						
Largest V+kO value expected from either the inbound or outbound channels. This should be the largest value expected for a single direction (channel), and not inbound and outbound together. Cycle level percentage is based on this value, where 100% equals Max V+kO.							
Smoothing (%)	20						
Percent of the previous V+kO calculation to use on new channel V+kO calculations. The larger the percent, the smaller the changes will be to new V+kO values.							
	OK Cancel Apply						

You do not assign detectors to the Arterial channel; rather, you use this channel to specify the maximum V+kO value. This maximum is the highest V+kO value expected for the Section in one direction only (Inbound or Outbound). It does not need to be exact, as it is only used to change the other channel output values into a percentage value, and does not impact the final algorithm results.

It is easiest to select a maximum V+kO value when historical detector data is available. Centracs has an estimator tool that finds the highest value in the historical log data. This value is usually a reasonable starting point, and usually does not need adjustment. Adjustment may be necessary if threshold percent values are above 100 percent, or are consistently low.

If historical data is not available, manual selection of a maximum V+kO value does not need to be precise. To yield a fairly accurate value, estimate volume during the busiest 15-minute span. If volume is not known at all, start with a value of 100; then when the algorithm runs, monitor the threshold percent levels:

- if the threshold percent is regularly higher than 100 percent, increase the maximum V+kO value.
- if the largest threshold percent value reached is far below 100 percent, decrease the maximum V+kO value.

In the Max V+kO field, enter a number. Or, to make an estimate based on the logs from the last two weeks, click .

Estimate Max V+kO	
Estimate maximum V+kO using	the logs from the last two weeks
-	-
Current Max:	Last:
	Start Estimation Cancel

Click **Start Estimation**. When the calculation is done, the result is shown:

Estimate Max V+kO							
Estimate maximum V+kO using the logs from the last two weeks							
Finished!	Max is 464						
Current Max: 464	Last: 427						
Start Estimation Apply Current Cancel							

To use the calculated Max value, click **Apply Current**; to enter a different value, click **Cancel**.

Configuring Channels, Thresholds, and Patterns

- **5** To save all settings and go back to the Traffic Algorithms table, click **OK**.
- 6 Select the algorithm and click the Configure Thresholds icon E. The Thresholds and Pattern Matrices window opens.

Matrix 1 • + New X Delete Rename Copy		-	-	-				-	-	-	
Thresholds	Pa	attern Matrix									
Cycle Levels Cycle percent is arterial V+kO divided by Max V+kO	С	Cycle Level (	Offset Level	Split Level					Pattern		
3 66 - ∞ % 61 🐳 🕀	1	1	1	1	0 P	attern	1	O Free	S Flash	C Local	O No Pattern
2 33 - 66 % 28 🖊 🕀 🗶	1	1	2	1	0 P	attern	1	O Free	O Flash	O Local	O No Pattern
1 0 - 33 %	1	1	3	1	0 P	attern	1	O Free	O Flash	O Local	No Pattern
Offset Levels (inbound vs. outbound bias) Offset percent is inbound V+KO divided by inbound plus outbound V+KO. Higher values imply heavier inbound traffic; lower values imply heavier outbound traffic.	1	2	1	1	0 P	attern	1	O Free	Second Flash	O Local	No Pattern
3 66 - 100 % 61 븆 🕀	:	2	2	1	0 P	attern	1	O Free	O Flash	O Local	O No Pattern
2 33 - 66 % 28 🔸 🗋 💌	1	2	3	1	0 P	attern	1	O Free	O Flash	C Local	No Pattern
1 0 - 33 %		3	1	1	0 P	attern	1	O Free	O Flash	C Local	No Pattern
Split Levels (arterial vs. sidestreet bias) Split percent is arterial V+kO divided by arterial plus sidestreet V+kO. Higher values imply heavier arterial traffic (vew ralues imply heavier sidestreet traffic.	1	3	2	1	Ě	attern	1	O Free	Flash	O Local	No Pattern
1 0 - 100 %	1	3	3	1	0 P	attern	1	O Free	O Flash	C Local	No Pattern
Occupancy Overrides Set the percent occupancy at which the occupancy override patterns become active. Leave blank to disable the override(s).											
Override 1 - %											
Override 2 - %	(	Occupancy (	Overrides								
Decreasing Hysteresis (%) 5 Amount that will be subtracted from the low end of a level's range when the cycle, offset, or split value is decreasing. This reduces the possibility of bouncing to and from a level.		)verride 1 D )verride 2 D									
											Close

Cycle, offset, and split levels are configured in the Thresholds part of the window. As you add or delete levels, the number of rows in the Pattern Matrix part of the window changes accordingly. Each row in the Pattern Matrix maps a cycle, offset, and split level combination to a pattern for the Section/Subsection/etc. to run.

The Hysteresis value is used to avoid bouncing back and forth between levels because of minor changes in values. In the example above, cycle level 3 starts at 66%. Without hysteresis, if the calculated percent over four calculation periods changes from 67 to 65 to 67 to 65, the pattern will bounce between levels 2 and 3. But with a hysteresis value of 5%, when the value decreases below 66, the pattern does not change to level 2 until the value goes below 61%. This is similar to the Min Pattern Execution Time option (described above).

7 Optionally, to add a new matrix, click **New...** or **Copy...** at the top of the window. If you select the Copy option, a window opens where you can set the name of the new copy. If you select the New option, this window opens:

— Threshold and Patter	m Matrix Name 📃	$ \boxtimes $						
Enter a name to use for the thresholds and pattern matrix								
Name:								
Optionally, set the initial number of thresholds. Thresholds can be added and removed later.								
Cycle Levels	3							
Offset Levels	3							
Split Levels	1							
	OK Cance							

Specify a name for the new matrix, and the number of threshold levels to start with. Click **OK**.

Make the necessary changes to the values. You can also:

- click states to add another cycle, offset, or split level
- click I to delete a level
- click **Rename** to assign a new name to the matrix

If you enter values in the Occupancy Overrides section on the *left* half of the window, the overrides shown in the Occupancy Overrides section on the *right* half of the window become enabled.

- 8 To save your settings, click **Save**.
- **9** To go back to the Traffic Algorithms table, click **Close**.

If you added a new matrix, you can go back to the Settings tab of the Threshold Traffic Responsive window to select the new matrix.

Running a Traffic Algorithm

# **Running a Traffic Algorithm**

When a traffic algorithm has been fully configured, including its channels, thresholds, and patterns, TR automatically starts its calculations (unless the "Disable TR on Section" option on the Settings tab of the Threshold Traffic Responsive window (page 13-8) has been turned on). This ensures that the calculations are always up-to-date. But TR does *not* automatically send pattern selections to the field controllers based on its calculations. You must enable this function via the scheduler (for details, refer to "*To permit an algorithm to send pattern changes* on page 13-15"). You can schedule TR control to run continuously, or only at specified times of the day, week, month, etc.

After a new algorithm has been configured, it is recommended that you run the algorithm for a period of time *without* sending patterns to the controllers. Monitor the calculations, and make sure that the patterns selected by TR are valid for the conditions at the time. If necessary, make adjustments to the configuration and repeat the verification. When TR is making the expected pattern selections, enable TR to send patterns to the controllers (for details, refer below).

**Note** • When TR is started or restarted (for example, if the Core service is restarted on the server machine), it can take some time to step through the levels and stabilize, unless you have the Immediate Update Threshold options configured to permit threshold levels to be skipped as traffic conditions change. For more information about the Immediate Update Threshold options, refer to *Configuring Channels, Thresholds, and Patterns* on page 13-8.

It is recommended that you add an alert trigger for the "Threshold TR Fault" event, which tells you if a TR-related problem occurs. "New Traffic Algorithm Pattern" is another TR-related event that you can log in the database for reporting purposes and/or generate alerts for. For more information, refer to *Events* on page 4-2 and *Using Triggers* on page 4-25.

## To run TR calculations for an algorithm without sending pattern changes

- 1 On the Settings tab of the Threshold Traffic Responsive window (page 13-8), make sure that the "Disable TR on Section" option is *not* turned on.
- 2 Either:
  - Make sure that the algorithm is *not* scheduled to run via the scheduler or manual command.

#### Or

• On the Settings tab of the Threshold Traffic Responsive window (page 13-8), turn on the "Disable Pattern Output" option, then click **OK** or **Apply** to save your changes.

#### To permit an algorithm to send pattern changes

- 1 On the Settings tab of the Threshold Traffic Responsive window (page 13-8), make sure that the "Disable TR on Section" and "Disable Pattern Output" options are *not* enabled.
- 2 In the scheduler, add a new schedule entry and select the "Traffic Algorithm" action. For instructions, refer to *Using the Scheduler* on page 7-11.
- **3** The Algorithm dropdown contains a list of all the traffic algorithms that have been configured. Select the algorithm for which to enable pattern changes.
- 4 Set the scheduling options. For example, it may be necessary to enable pattern changes at only specific times of the day or specific days of the week.

When the "Traffic Algorithm" action runs, the pattern selected by the most recent calculations is sent to the controllers for the associated Section, Subsection, and/or Group. When the action completes, the TR-selected pattern is stopped and the controllers go back to their prior operation mode. TR continues to run its calculations in the background to keep its pattern selections up-to-date.

#### To disable TR calculations and pattern changes for an algorithm

- 1 On the Settings tab of the Threshold Traffic Responsive window (page 13-8), turn on the "Disable TR on Section" option.
- 2 To save your changes, click **OK** or **Apply**.

With this option turned on, no calculations are made, nothing is logged to the database, and no pattern changes are sent to the controllers.

# To prevent an algorithm from logging its calculations to the database: (for the Traffic Responsive report)

- 1 On the Settings tab of the Threshold Traffic Responsive window (page 13-8), turn on the "Disable Logging" option.
- 2 To save your changes, click **OK** or **Apply**.

With this option turned on, you can see TR calculations in real time via the TR monitoring window (page 13-16), but Centracs does not save the calculations to the database, so you cannot see them afterwards on the Traffic Responsive report (page 10-55).

Monitoring Real-time TR Calculations

# **Monitoring Real-time TR Calculations**

**Note** • To get historical data for a specific time period (rather than real-time data), run the Traffic Responsive report (page 10-55).

To monitor Traffic Responsive statistics as they are calculated:

From the main menu, select Monitoring > Threshold Traffic Responsive Monitor > {algorithm name}.

Or

▶ From the main menu, select Configuration ▶ Traffic Algorithms... The Traffic Algorithms window opens.

<ul> <li>Traffic Algorithms</li> </ul>				
Manage algorithm confi	guration (such as Traffic Respo	nsive) for Sections		
Name	Algorithm	Entity	Configuration State	
Woodmen Rd Corridor	Traffic Responsive (Threshold)	👬 Woodmen Rd	Complete	
				Close

click the algorithm to monitor then click the Monitor Algorithm icon *mail*, or right-click the algorithm and select the **Monitor...** option.

Real-time calculations for the algorithm are shown. A new row is added to the table each time the algorithm runs:

ne Remaining: 7:17														Clear	Run N
Timestamp	Raw Inbound	Raw Outbound	Smoothed Inbound	Smoothed Outbound	Smoothed Arterial	Cycle %	Offset %	Cycle Level	Offset Level	Split Level	Pattern	Offset	Pattern Set Mer	ssage Algorithr	m Faile
2/29/2010 3:00:01 PM	10.84	241.93	11.00	242.04	242.04	48.4%	4.3%	2	1	1	1	1	No	No	
2/29/2010 2:50:01 PM	11.49	241.92	11.65	242.49	242.49	48.5%	4.6%	2	1	1	1	1	No	No	
2/29/2010 2:40:01 PM	12.40	244.29	12.31	244.75	244.75	49.0%	4.8%	2	1	1	1	1	No	No	
/29/2010 2:30:01 PM	11.94	247.67	11.94	246.59	246.59	49.3%	4.6%	2	1	1	1	1	No	No	
2/29/2010 2:20:01 PM	11.94	242.26	11.94	242.29	242.29	48.5%	4.7%	2	1	1	1	1	No	No	
2/29/2010 2:10:01 PM	11.94	242.60	11.94	242.40	242.40	48.5%	4.7%	2	1	1	1	1	No	No	
2/29/2010 2:00:01 PM	11.85	241.92	11.91	241.61	241.61	48.3%	4.7%	2	1	1	1	1	No	No	
2/20/2014 1-55-20 DM	44.05	220.00	10.10	0 4 D 9 O	240.20	40 40/	4 00/	2	4	4	4	4	Ma	No	

The Time Remaining field at the top counts down to the next time the algorithm will run. (The Interval field on the Settings tab of the Threshold Traffic Responsive window (page 13-8) sets the amount of time between calculations.) To run the algorithm on demand, you can click **Run Now** at any time. (The **Run Now** option is also available on the Section/Subsection Status display; refer to page 6-10.)

To remove the statistics from prior runs of the algorithm, click **Clear**.

To configure the columns shown in the monitoring window, right-click in the data area of the window.

Monitoring Real-time TR Calculations

Traffic Responsive - Wo	odmen Rd	Corridor										
ne Remaining: 7:17								✓ Raw Outbound			Clear	Run Now
Timestamp	Raw Inbou	ind Raw Outbo	und Smoothed In	bound Smoothed Outbou	und Smoothed Ar	terial Cycle %	Offset	<ul> <li>Smoothed Inbound</li> </ul>	tern Offs	et Pattern Se	et Message Algorith	m Failed
2/29/2010 3:00:01 PM	10.84	241.93	11.00	242.04	242.04	48.4%	4.3%	Smoothed Outbound	1	No	No	
2/29/2010 2:50:01 PM	11.49	241.92	11.65	242.49	242.49	48.5%	4.6%	<ul> <li>Smoothed Sidestreet</li> </ul>	1	No	No	
2/29/2010 2:40:01 PM	12.40	244.29	12.31	244.75	244.75	49.0%	4.8%	Smoothed Occupancy Override 1	1	No	No	
/29/2010 2:30:01 PM	11.94	247.67	11.94	246.59	246.59	49.3%		Smoothed Occupancy Override 2	1	No	No	
2/29/2010 2:20:01 PM	11.94	242.26	11.94	242.29	242.29	48.5%			1	No	No	
/29/2010 2:10:01 PM	11.94	242.60	11.94	242.40	242.40	48.5%		✓ Smoothed Arterial	1	No	No	
2/29/2010 2:00:01 PM		241.92	11.91	241.61	241.61	48.3%	4.7%	✔ Cycle %	1	No	No	
00/0040 4-55-90 DM	44.05	000 50	40.40	040.00	040.00	40 40/	4 00/	✔ Offset %	-	Ma	Nia	
								Split %				
								✓ Cycle Level				
								✓ Offset Level				
								✓ Split Level				
								Occupancy Override 1 Level				
								Occupancy Override 2 Level				
								Immediate Update Made				
								✓ Pattern				
								✔ Offset				
								✓ Pattern Set				
								✓ Message				
								✓ Algorithm Failed				
								Buffer Size				

A menu is shown with a list of all available fields:

Click the fields to toggle them on or off.

To specify the maximum number of rows to show in the window, click the "Buffer Size" option:

E	Buffer Size	
	Enter the maximum nu	
,	Max Rows	
	100	
	ок с	ancel

When this number is reached, the oldest row will be deleted each time a new row is added.

Monitoring Historical TR Calculations

# **Monitoring Historical TR Calculations**

**Note** • To see real-time traffic algorithm data as the algorithm runs, use the Traffic Responsive monitoring window (page 13-16).

You can use the Traffic Responsive report to monitor threshold-based Traffic Responsive performance on the system.

Traffic Responsive																		
Configurab	ble Report Opt	lions																
Start Date & <sup>-</sup> Traffic Algori			11 8:25:46 AN		End Date	& Time: to Display:		01/06/2011			т т						[	View Repo
-		-	en Rd Corrido					Raw Inbou	ind, Raw C	Jutbour <u>-</u>	l							
Only Show Pa	attern Chang	e: Yes	-		Only Show	w Change Red	commended:	No	_	•								
1	↓ 1 of 5 ▶ ▶   ← ⊗ ♦   ⊕ □ 10% · Find   Next																	
Traffi	ic Res	spons	sive															
ime Rang	je: 1/6/201	11 8:25:46 A	M - 1/6/2011	8:25:46 PN	Л													
Algorithm I	Name:	Woodmen	Rd Corrido	r														
Algorithm I	Name:	Woodmen	Rd Corrido	r														
Algorithm I Date/Time	Name: Raw Inbound	Woodmen Raw Outbound	Rd Corrido	Smoothed Outbound	Smoothed Sidestreet	Smoothed Occ1	Smoothed Occ2	Smoothed Arterial	Cycle %	Offset %	Split %	Cycle Level	Offset Level	Split Level	Pattern	Offset	Pattern Set	Message
0ate/Time /6/2011	Raw	Raw	Smoothed	Smoothed					Cycle % 48.91	Offset % 4.56	Split % 100				Pattern 1	Offset		Message
	Raw Inbound	Raw Outbound	Smoothed Inbound	Smoothed Outbound	Sidestreet	Occ1	Occ2	Arterial				Level	Level	Level			Set	Message
Date/Time 1/6/2011 3:30:01 AM 1/6/2011	Raw Inbound 11.77	Raw Outbound 245.00	Smoothed Inbound 11.67	Smoothed Outbound 244.54	Sidestreet	Occ1 0.00	Occ2 0.00	Arterial 244.54	48.91	4.56	100	Level 2	Level 1	Level 1	1		Set No	Message
0ate/Time /6/2011 :30:01 AM /6/2011 :50:03 AM /6/2011 :50:03 AM	Raw Inbound 11.77 12.05	Raw Outbound 245.00 245.00	Smoothed Inbound 11.67 11.97	Smoothed Outbound 244.54 244.90	Sidestreet 0.00 0.00	Occ1 0.00 0.00	0cc2 0.00 0.00	Arterial 244.54 244.90	48.91 48.98	4.56	100	Level 2 2	Level 1 1	Level 1 1	1		Set No No	Message
Date/Time 1/6/2011 3:30:01 AM 1/6/2011 3:40:02 AM 1/6/2011	Raw Inbound 11.77 12.05 12.14	Raw Outbound 245.00 245.00 243.98	Smoothed Inbound 11.67 11.97 12.11	Smoothed Outbound 244.54 244.90 244.17	Sidestreet 0.00 0.00 0.00	0.00 0.00 0.00	0cc2 0.00 0.00 0.00	Arterial 244.54 244.90 244.17	48.91 48.98 48.83	4.56 4.66 4.72	100 100 100	Level 2 2 2	Level 1 1 1	Level 1 1 1	1 1 1		Set No No	Message
0ate/Time /6/2011 :30:01 AM /6/2011 :40:02 AM /6/2011 :50:03 AM /6/2011 /6/2011	Raw Inbound 11.77 12.05 12.14 11.96	Raw           Outbound           245.00           245.00           243.98           242.29	Smoothed Inbound 11.67 11.97 12.11 11.99	Smoothed Outbound 244.54 244.90 244.17 242.67	Sidestreet           0.00           0.00           0.00           0.00           0.00	0cc1 0.00 0.00 0.00 0.00	0cc2 0.00 0.00 0.00 0.00	Arterial 244.54 244.90 244.17 242.67	48.91 48.98 48.83 48.53	4.56 4.66 4.72 4.71	100 100 100 100	Level 2 2 2 2 2 2	Level 1 1 1 1	Level 1 1 1 1	1 1 1 1		Set No No No	Message

For details about this report, refer to Traffic Responsive Report on page 10-55.

# 14

# Using the Travel Time Module for Vehicle Detection

Centracs offers three types of vehicle detection:

- Level of Service Links A Level of Service (LOS) link is a collection of vehicle detectors (often loop detectors) that are associated with consecutive intersections on a section of road. A Level of Service link offers a convenient way to monitor and analyze the volume, speed, and occupancy data for these detectors collectively. It can be shown on the map, and it uses color-coding to indicate current traffic conditions. Also, historical link data can be viewed in reports for further analysis.
- Autoscope DCMS The optional Data Collection Management System (DCMS) module of Centracs collects real-time vehicle detection data from Autoscopes and RTMS devices. It allows users to view streaming video and snapshot images from the Autoscope video vehicle detectors, view the locations of the field devices on a map, monitor real-time communications between Centracs and the field devices, generate reports and graphs to analyze the detection data, and compare the data for different devices, different detectors, and/or different dates.
- Travel Time The optional Travel Time module of Centracs uses BlueTOAD<sup>™</sup> to detect anonymous Bluetooth<sup>™</sup> signals broadcasted from wireless mobile devices (such as phones, headsets, and music players) inside moving vehicles, and calculates speed and travel time for these vehicles.

This chapter describes the Travel Time module. For detailed information about Level of Service links, refer to *Entity Configuration - Links* on page 3-54 and *Real-Time Link Status* on page 6-45. For information about DCMS, refer to Chapter 17, *Using DCMS for Data Collection*.

# **BlueTOAD Detection of Speed and Travel Time**



BlueTOAD<sup>™</sup> (Bluetooth<sup>™</sup> Travel-time Origination And Destination) by TrafficCast provides real-time Bluetooth<sup>™</sup> detection of current travel times and speeds for specific sections of road. BlueTOAD detects anonymous Bluetooth<sup>™</sup> signals broadcasted from wireless mobile devices (such as phones, headsets, and music players) inside moving vehicles. When a particular Bluetooth device in a moving vehicle passes a BlueTOAD checkpoint Overview of Travel Time

(called a Data Collection Station), BlueTOAD records the current time; when the same device/vehicle passes the next checkpoint, BlueTOAD records the travel time, and uses the distance between the two checkpoints to calculate the speed of the vehicle.

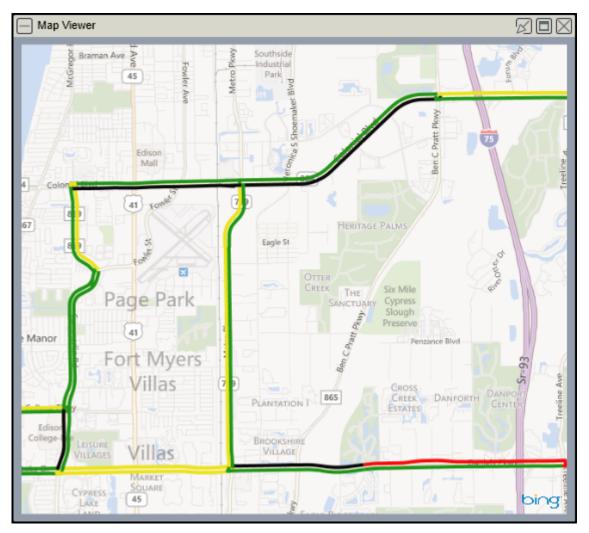
Though BlueTOAD is a separate system, Centracs offers an optional Travel Time module that allows you to integrate your BlueTOAD data into the user interface of your Centracs system. Centracs communicates with your BlueTOAD web server to retrieve the latest information, then shows it in maps, reports, and status displays in Centracs.

For more information about the BlueTOAD system, visit <u>http://www.trafficcast.com</u>.

## **Overview of Travel Time**

#### Maps

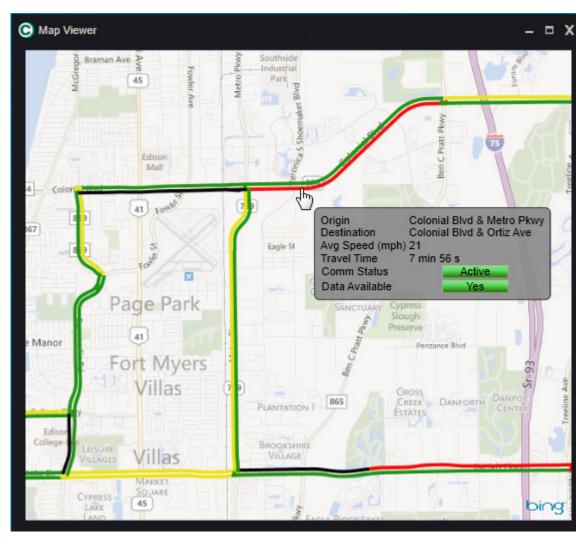
With the Travel Time module, you can quickly see the current status of your roadways at a glance:



Overview of Travel Time •

Each section of road between two Data Collection Stations is a "link". In this example, green indicates that traffic is free-flowing, yellow indicates moderate traffic congestion, red and black indicate problem areas.

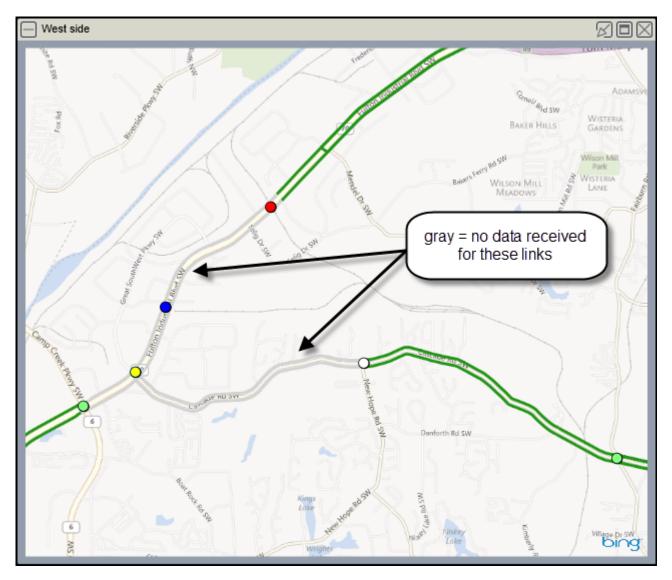
**Note** • The colors used to represent different link statuses are configurable. You can configure up to 10 different status colors. The colors on the map display get refreshed with the frequency specified by the Data Poll Interval field on the BlueTOAD Settings window (refer to page 14-9).



To see more details about a link, you can hold the mouse pointer over the link on the map:

A pop-up window shows the names of the two Data Collection Stations for the link, and the current average speed and travel time for this section of road.

• Overview of Travel Time

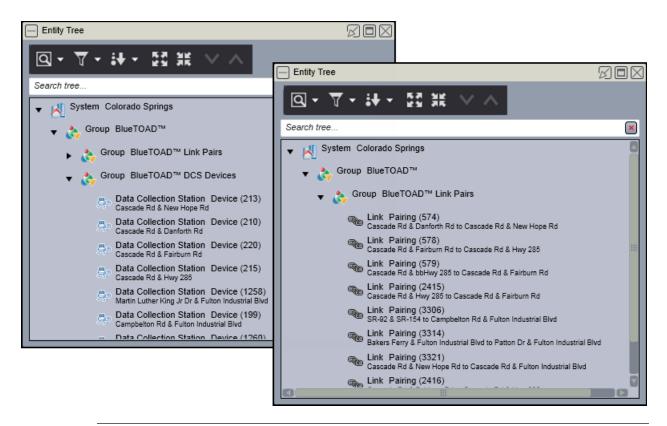


If data is unavailable for a link, the map shows the link as gray:

**Note** • The Travel Time module in Centracs uses the Link Visuals map layer (refer to page 20-83). The locations and shapes of the links on the map are defined by the shape file imported into Centracs during initial BlueTOAD setup.

#### Entity Tree

After BlueTOAD has been configured in Centracs, the Entity Tree shows the Data Collection Stations (i.e., the detection devices), the Link Pairings, and the Routes that are defined on the BlueTOAD web server:



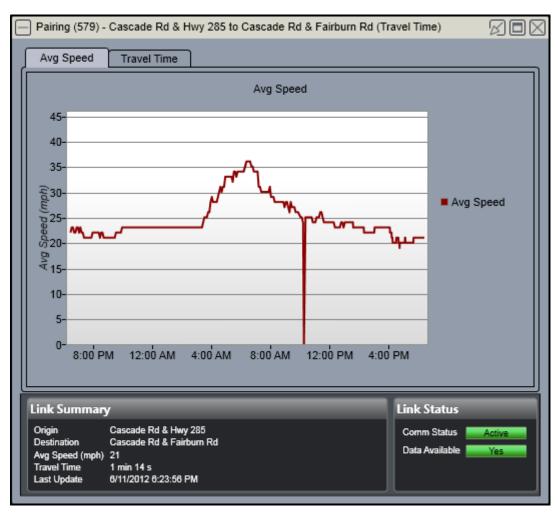
# **Note** • Centracs does not show Data Collection Stations that are Inactive on the BlueTOAD web server (or their associated link pairs).

Each link represents traffic in one direction only. To indicate the direction of travel, one of the two Data Collection Stations (DCS) is designated as the Origin, the other as the Destination (these designations are made in the BlueTOAD web server). The same DCS can be the Origin of multiple links, and can also be the Destination of other links.

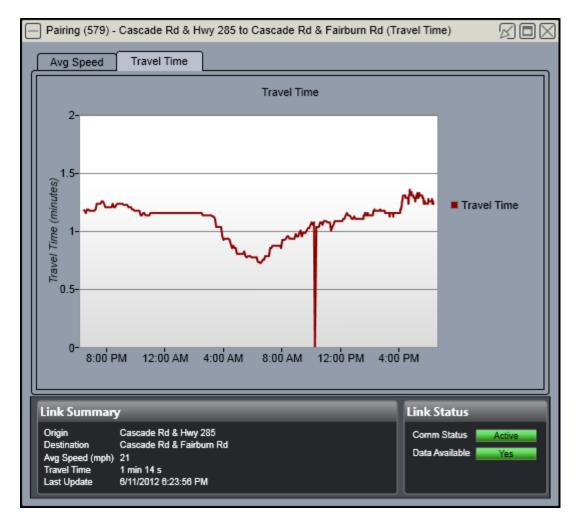
• Overview of Travel Time

#### Status Displays

To see more information about a link, DCS, or route, you can double-click it in the Entity Tree or the Map Viewer to open the Status display. For example:



Overview of Travel Time •

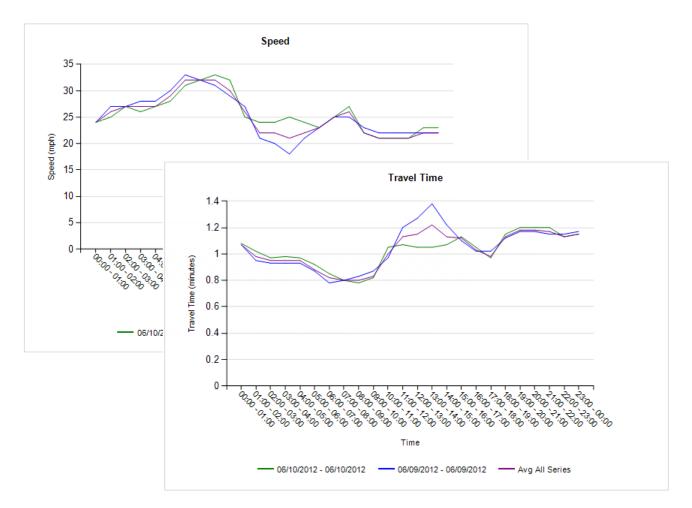


These graphs show data for a link pair for the last 24 hours. The details at the bottom of the window show the most recent data retrieved from the BlueTOAD web server.

• Overview of Travel Time

#### Reports

The Travel Time Links report shows historical data for your BlueTOAD link pairs. The report includes graphs for both speed and travel time. You can run the report for multiple date ranges at one time in order to compare the performance of the roadway during different time intervals.



For more information, refer to Travel Time Links Report on page 10-56.

#### **BlueTOAD Events**

The Travel Time module generates these events in Centracs:

- BlueTOAD Server Connected
- BlueTOAD Server Disconnected
- Link Threshold Increased / Link Threshold Decreased

Optionally, you can add triggers for these events to generate alerts. For more information, refer to *Events* on page 4-2 and *Using Triggers* on page 4-25.

## Configuring BlueTOAD Entities

If you have a license key from Econolite for the Travel Time module of Centracs, the procedure below describes how to configure the communications between Centracs and the BlueTOAD web server.

**Note** • Before you configure the Travel Time module in Centracs, you must configure your devices, link pairings, and routes on the BlueTOAD web server. Also, if you are not hosting your own BlueTOAD server, your Centracs server must have an active internet connection in order to communicate to the BlueTOAD server.

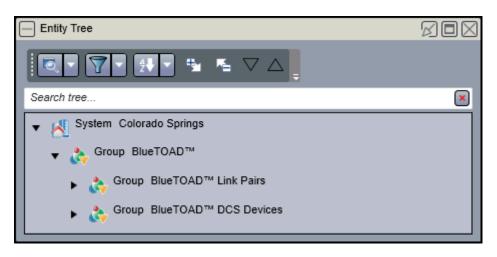
Settings			
Organization Information Licensing SMTP Servers ECPI Tile Server Autoscope Settings Password Strength Confirmation Dialogs Action Priorities Preempts Detector Settings	BlueTOAD™ ✓ Enabled Username Password Inventory Poll Interval (m Data Poll Interval (min) ▲ Advanced	<ul> <li>✓ Reflect Server</li> <li>econolite</li> <li>in) 5</li> <li>5</li> </ul>	
BlueTOAD™ Support Services Offline Alert Format MMS Settings	Scheme Host Login Path Login Content Format Devices Path Status Path Link Path Route Path	https:// bluetoad.trafficcast.com /user/login application/x-www-form-urlencoded /xml/bt_locations /xml/traveldata /xml/pairings_raw /xml/routes	
			Save Cancel Edit

Configuring BlueTOAD Entities

#### To configure the Travel Time module in Centracs:

- 1 From the main menu, go to **File ▶ Settings**.
- 2 click the BlueTOAD Settings tab. (To access the BlueTOAD Settings tab of the Settings window, you must have the System Config permission in your Application Role (refer to page 20-19).)
- **3** Turn on the "Enabled" checkbox.
- 4 If you want the BlueTOAD entities in Centracs to always reflect the entities on the BlueTOAD web server, turn on the "Reflect Server" checkbox. Or if you want the ability to delete BlueTOAD entities from Centracs, turn off "Reflect Server".
- 5 Enter the user name and password provided to you by TrafficCast to log in to the BlueTOAD web server.
- 6 For the Inventory Poll Interval, specify how often Centracs checks the BlueTOAD web server for newly configured devices/link pairings/routes, and for changes to existing ones. The recommended interval is 5 minutes.
- 7 For the Data Poll Interval, specify how often Centracs requests speed and travel time information from the BlueTOAD server. This information is used to update the map display, the real-time link status display, the real-time DCS status display, the route status display, and to generate Link Threshold events. The recommended interval is 5 minutes.
- 8 If your BlueTOAD web server is hosted by TrafficCast, accept the defaults that are already configured in the Advanced section of the window. If you host your own BlueTOAD server, change the Advanced settings as needed to access your server.
- 9 Click Save.

Centracs then connects to the BlueTOAD web server to get information about all the defined devices, link pairings, and routes, and then adds four new Groups to the Entity Tree to contain them (as shown below). This may take a few minutes.



Configuring BlueTOAD Entities •

# **Note** • If there are multiple System entities in the Entity Tree, Centracs adds the BlueTOAD Groups to the first System it finds.

Centracs also adds colored bars to the map to show the locations of the link pairings along the roadway:



10 If the BlueTOAD server did not report the configured Max Speed for a link pairing, Centracs assigns a default value of 0. Therefore, you must verify the Max Speed on the Entity Configuration window for each link pairing that was added to the tree. To do so, right-click the link in the tree and select **Edit Properties**. Max Speed is the speed considered to be the maximum or "free flow" speed (usually a number slightly higher than the speed limit for that stretch of roadway). Centracs uses this number to determine whether the Link has exceeded any of the Speed thresholds specified on the Link Settings window (refer to page 3-59). The calculation is:

#### average detected speed / Max Speed = Speed %

**Hint:** To see or change the properties for multiple links, it is not necessary to open and close the Entity Properties window for each link — with the window open, simply click a different link in the tree to populate the window with the properties for that link. (If you make changes to the properties for a link, you must first save or discard the changes before you can switch to a different link.)

- Changing Properties for a DCS
  - 11 Optionally, on the Entity Configuration window, you can change the names and other properties of the BlueTOAD entities in the tree. For details, refer to *Changing Properties for a DCS* on page 14-12 and *Entity Configuration Links* on page 3-54.
  - **12** If necessary, you can move the BlueTOAD entities to other locations within the Entity Tree.

### Changing Properties for a DCS

BlueTOAD Data Collection Stations (DCS) are not added to the tree manually like most other entities. However, you can use the Entity Configuration window to change certain properties of a DCS entity, as described below. (For information on how to add BlueTOAD entities to Centracs, refer to *Configuring BlueTOAD Entities* on page 14-9.)

#### To edit the properties of a DCS:

- **1** Right-click a Data Collection Station in the Entity Tree.
- 2 Select the **Edit Properties** option. The Entity Configuration window opens.

Entity Configurat	lion	$\boxtimes \Box \boxtimes$
Name/Identifier	Device (215)	
Description	Cascade Rd & Hwy 285	
Jurisdiction	General	•
Notes	0 notes	
		_
		Close

**Note** • Because the fields on the Entity Configuration window are configurable, your screen may look different than the sample shown here. For details, refer to *Using the Type and Field Definitions Window* on page 19-5.

- 3 Make changes as needed to the name, description, and/or Jurisdiction (refer to page 20-12.). Note that any changes to this window only affect Centracs; they do NOT change anything on the BlueTOAD web server.
- 4 Optionally, to add notes for this entity, click to the right of the Notes field. For more information, refer to *Adding Notes to Entities* on page 3-14.
- 5 Click OK.

Status Display for BlueTOAD Data Collection Stations

**Note** • BlueTOAD Data Collection Stations cannot be added to the map.

#### Status Display for BlueTOAD Data Collection Stations

#### To display the BlueTOAD DCS Status display:

Double-click a BlueTOAD Data Collection Station (DCS) in the Entity Tree, or right-click it and select Show Status...



This window shows a list of the destination Data Collection Stations with which this DCS is paired as the origin, and shows the current travel time for each link pair. The example above shows two link pairs: in both cases, "Device (220) - Cascade Rd & Fairburn Rd" is the origin DCS, indicating the direction of travel for these link pairs. For more information about origins and destinations, refer to *Overview of Travel Time* on page 14-2.

This window is updated in real time, at the frequency specified by the Data Poll Interval setting on the BlueTOAD Settings window (refer to page 14-9).

#### Status Display for BlueTOAD Link Pairs

The BlueTOAD Link Pair status display shows real-time data about the average speed and travel time calculations collected for a BlueTOAD Link Pair, i.e., a section of road between two BlueTOAD Data Collection Stations. It shows a summary of the current link status, plus historical information for the last 24 hours (if available) in the form of line graphs.

**Note** • To get historical data older than 24 hours, run the Travel Time Link report (page 10-56).

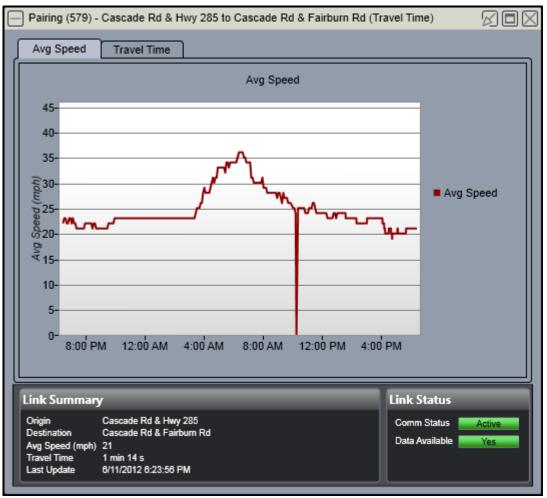
#### To open the Link Pair Status display:

From the Entity Tree or Map Viewer, double-click a Link, or right-click it and select Show Status...

#### Status Display for BlueTOAD Link Pairs

The Link Pair Status display includes two tabs: Avg Speed and Travel Time. Each tab shows a graph of the data reported by the BlueTOAD web server. The graphs are visual representations of the efficiency with which this roadway section is serving traffic. High average speeds and low travel times indicate free-flowing traffic; low average speeds and high travel times indicate traffic congestion.

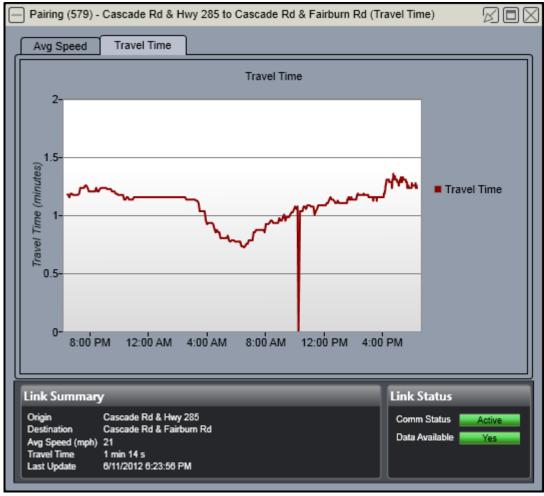
The Link Pair Status display is updated in real time, at the frequency specified by the Data Poll Interval setting on the BlueTOAD Settings window (refer to page 14-9). The window shows a maximum of 24 hours of data at a time.



#### Sample Graphs

Average Speed

Status Display for BlueTOAD Link Pairs •



**Travel Time** 

**Note** • A straight horizontal line on the graphs often indicates stale data (for example, if no vehicles with Bluetooth devices have been detected for an extended period of time).

These sample graphs show that within the last 24 hours, the average speed ranged from approximately 20 mph to approximately 35 mph, and the travel time ranged from 45 seconds to 75 seconds. The downward spike at approximately 10:00 AM indicates a lack of data at that time, for any of the reasons below:

- None of the passing vehicles had a Bluetooth<sup>™</sup>-enabled device
- There were no passing vehicles (because traffic was stopped or because no cars were present)
- Communications were down

Status Display for BlueTOAD Link Pairs

The sections at the bottom of the window show the most recent speed and travel time data:

#### Link Summary

- Origin / Destination The two Data Collection Stations (DCS) that mark the beginning and end of this section of roadway. Because each Link Pair has a specific direction of travel, the Origin is the first DCS that a motorist passes, and the Destination is the second. Note that a single DCS can be both the Origin in one Link Pair and the Destination in another Link Pair.
- Avg Speed The most recent average speed calculation reported by the BlueTOAD web server.
- Travel Time The most recent travel time calculation reported by the BlueTOAD web server.
- Last Update The date and time at which the reported speed and travel time were received from the web server, in MM/DD/YYYY HH:MM:SS format.

#### Link Status

- Comm Status Shows "Active" if Centracs is communicating successfully with the BlueTOAD web server; shows "Inactive" if Centracs cannot communicate with the BlueTOAD web server or if BlueTOAD has been disabled in Centracs.
- Data Available If "Yes", this indicates that valid data is being received from the BlueTOAD web server; if "No", this indicates that the web server is reporting average speeds and travel times of zero.

Status Display for BlueTOAD Routes •

## Status Display for BlueTOAD Routes

The BlueTOAD Route Status display shows real-time data about the average speed and travel time calculations collected for a BlueTOAD Route. A Route is composed of two or more BlueTOAD Link Pairs. The status display shows a summary of the current route status, plus historical information for the last 24 hours (if available) in the form of line graphs.

**Note** • To get historical data older than 24 hours, run the Travel Time Link report (page 10-56).

#### To open the Route Status display:

From the Entity Tree, double-click a Route, or right-click it and select **Show Status...** 

The Route Status display includes three tabs: Avg Speed, Travel Time, and Links. The first two tabs show a graph of the data reported by the BlueTOAD web server. The graphs are visual representations of the efficiency with which this roadway section is serving traffic — high average speeds and low travel times indicate free-flowing traffic; low average speeds and high travel times indicate traffic congestion. The third tab shows a list of the Link Pairs included in this Route.

The Route Status display is updated in real time, at the frequency specified by the Data Poll Interval setting on the BlueTOAD Settings window (page 14-9). The window shows a maximum of 24 hours of data at a time.

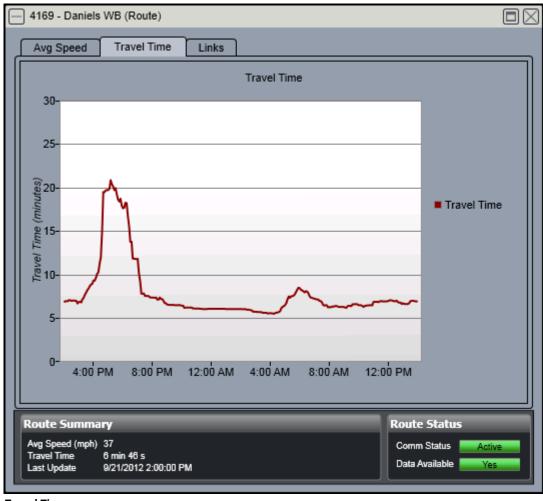
Status Display for BlueTOAD Routes

#### Sample Screens



Average Speed

Status Display for BlueTOAD Routes •



**Travel Time** 

#### Using the Travel Time Module for Vehicle Detection

Status Display for BlueTOAD Routes

- 4169 - Danie	s WB (Route)					
Avg Speed	Travel Time	Links				
Link	0	rigin		Destinat	ion	Travel Time
Pairing (4071	) Daniels Pkwy &	Cross Cre	ek Blvd	Daniels Pkwy & Met	tro Pkwy	2 min 26 s
Pairing (4073	) Daniels Pkwy &	Treeline A	ve	Daniels Pkwy & Cro	ss Creek Blvd	4 min 20 s
Route Summ	ary				Route Statu	s
Avg Speed (mph Travel Time Last Update	) 37 6 min 46 s 9/21/2012 2:00:00 P	м			Comm Status Data Available	Active Yes

Links

**Note** • A straight horizontal line on the graphs often indicates stale data (for example, if no vehicles with Bluetooth devices have been detected for an extended period of time).

These sample graphs show that within the last 24 hours, the average speed ranged from approximately 12 mph to approximately 45 mph, and the travel time ranged from 6 minutes to 21 minutes.

A downward spike to the zero baseline indicates a lack of data at that time, for any of the reasons below:

- None of the passing vehicles had a Bluetooth<sup>™</sup>-enabled device
- There were no passing vehicles (because traffic was stopped or because no cars were present)
- Communications were down

Status Display for BlueTOAD Routes •

The sections at the bottom of the window show the most recent speed and travel time data:

Route Summary	
---------------	--

Field	Description
Avg Speed	The most recent average speed calculation reported by the BlueTOAD web server.
Travel Time	The most recent travel time calculation reported by the BlueTOAD web server.
Last Update	The date and time at which the reported speed and travel time were received from the web server, in MM/DD/YYYY HH:MM:SS format.

#### Route Status

Field	Description
Comm Status	Shows "Active" if Centracs is communicating successfully with the BlueTOAD web server; shows "Inactive" if Centracs cannot communicate with the BlueTOAD web server or if BlueTOAD has been disabled in Centracs.
Data Available	If "Yes", this indicates that valid data is being received from the BlueTOAD web server; if "No", this indicates that the web server is reporting average speeds and travel times of zero.



# 15

# **Changing the Controller Settings**

**Note** • For information about the Oasis controller editor, refer to the online help in the Oasis Editor, or to the Centracs online help.

## **Maintaining Controller Settings Remotely**

The configuration of the signal controllers can be done locally at the field controllers via the front panel, or remotely in CentracsLocal Edition via the Signal Editor or via the remote front panel emulator (available only for ASC/3 and Cobalt controllers):

- Signal Editor When you remotely change controller settings using the Signal Editor, you must upload the current controller settings into Centracs, make the necessary changes, then download them back to the controller. The Signal Editor offers some utilities and features not available in the remote front panel, such as comparing databases, importing/exporting Synchro files, and custom print templates.
- Remote Front Panel When you remotely change controller settings using the remote front panel emulator, your changes are made directly to the controller. This is a quicker and more direct way to make controller changes, and the interface is identical to what you would see on the actual field controller front panel. When using the remote front panel, you also have access to the status displays, where you can see what is happening on the controller at any moment.

Both methods offer online help for each field.

#### **Changing the Controller Settings**

• Overview of the Signal Editor

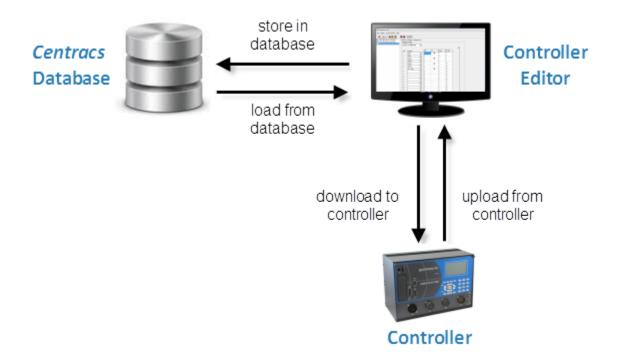
## Overview of the Signal Editor

In the Signal Controller Editor, you can:

- upload the current controller settings from a field controller into CentracsLocal Edition
- remotely edit the settings and time-of-day plans for a controller
- download new or changed settings to a field controller
- revert a controller to a previously saved configuration
- copy settings from one controller to another
- compare the current settings on a controller with the settings stored in CentracsLocal Edition
- export settings to or import settings from UTDF format for use in Synchro<sup>™</sup>
- print a copy of the current controller settings

# **Note** • The terms Controller Editor, Signal Editor, and Database Editor all refer to the Editor discussed above.

The graphic below outlines the exchange of data between the field controllers and the Centracs Local Edition database by way of the Signal Editor:



Overview of the Signal Editor •

In most situations, the settings stored on the field controllers should be considered the master copy, and the settings stored in the CentracsLocal Edition database should be considered a backup copy. To ensure accurate controller data management, it is important to make sure that the remote configurations in CentracsLocal Edition are the same as the local configurations in the controllers. When you use the Signal Controller Editor to make changes, you must also save those changes to the CentracsLocal Edition database and download them to the controller in order to keep the data consistent. If a technician makes changes in the field directly through the controller front panel, or if someone makes changes through the remote front panel emulator, you must upload those changes to the CentracsLocal Edition database via the Signal Controller Editor to keep the databases in agreement.

#### To open the Signal Editor workspace:

From the Entity Tree, right-click a Signal and select Launch Signal Editor...

#### Or

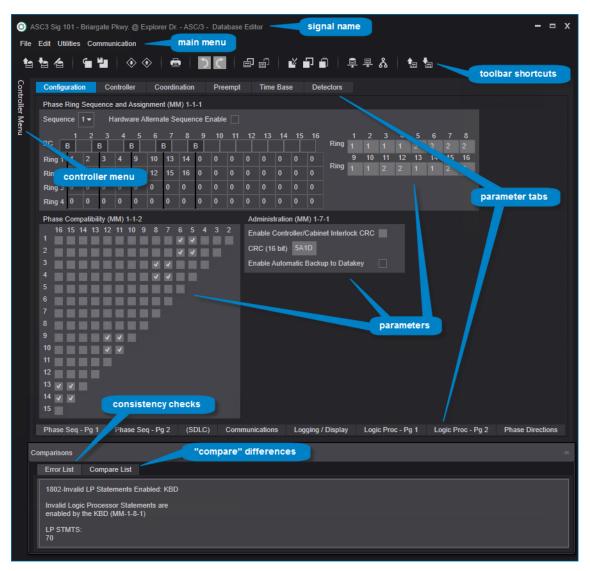
From the Signal Status display, hold your mouse over the wrench icon near the right edge of the window and select Edit from the slide-out menu.

#### Or

From the Map Viewer, right-click a Signal and select Launch Signal Editor...

• Overview of the Signal Editor

The Editor workspace opens. (Depending on the controller type, your Editor workspace may be different. The sample below is from the ASC/3 Editor.) As shown below, this window contains a main menu, a controller menu, a toolbar, and multiple tabs containing the various parameters that you can configure for a controller.



The toolbar gives you easy one-click access to most functions. To see a description of a toolbar icon, hold your mouse pointer over that option.

The Controller Menu allows you to quickly navigate to a particular page in the controller settings, much like a 'table of contents'.

When the Signal Editor is launched from the Entity Tree or Map Viewer, it automatically loads the settings that are currently stored in the CentracsLocal Edition database for the selected controller — it does NOT automatically upload the settings from the field controller. If the controller's settings have never been saved to the CentracsLocal Edition database, the Editor loads a set of default values.

For a description of a field, hover your mouse pointer over the field.

Overview of the Signal Editor •

#### To close the Signal Editor workspace:

From the File menu, select **Exit**.

Or

Click the **X** in the upper-right corner of the window.

**Note** • You must close the Signal Editor before you can close CentracsLocal Edition. If you try to close CentracsLocal Edition first, a message is shown to remind you that the Signal Editor is still open.

You can use the "Auto Logout Time Warning" Global Setting to warn you before CentracsLocal Edition logs you out due to inactivity, which could cause you to lose your changes in the Signal Editor. For more information, refer to *Overview of Global Settings* on page 20-54. • Overview of the Remote Front Panel (ASC/3, Cobalt)

## Overview of the Remote Front Panel (ASC/3, Cobalt)

**Note** • You must have the "Remote Front Panel" permission in your Jurisdiction Role in order to use this feature. Any use of the remote front panel is logged in the system.

You can use the remote front panel emulator to view the status displays (which show you what is happening on the controller in near real time), or to change the controller settings.

The remote front panel emulator works the same as the front panel on the field controller. For example, you have full front panel programmability, and can use the number keypad on your keyboard to navigate through the screens. And for online help on a field, you can move your cursor to that field and click **Help**. Please refer to your controller manual for full instructions and details about the interface.

#### To open the remote front panel from Centracs:

From the Entity Tree, right-click a Signal and select Launch ASC/3 Front Panel or Launch Cobalt Front Panel.

Or

From the Signal Status display, hold your mouse over the Wrench icon near the right edge of the window and select FP from the slide-out menu.

Or

From the Map Viewer, right-click a Signal and select Launch ASC/3 Front Panel or Launch Cobalt Front Panel.

Overview of the Remote Front Panel (ASC/3, Cobalt) •

C ASC/3 Front Panel 062 - Front St @ Liggett F	Rd - 50503 on .27 – 🗖 🗙
MAIN	MENU
1. CONFIGURATION	6. DETECTORS
2. CONTROLLER	7. STATUS DISPLAY
3. COORDINATOR	8. UTILITIES
4. PREEMPTOR/TSP	9. DIAGNOSTICS
5. TIME BASE	
Main Sub Next Menu Menu Data	Next Screen 1 2 3 4 5 6 7 8 9 Spec Func 0 Clear

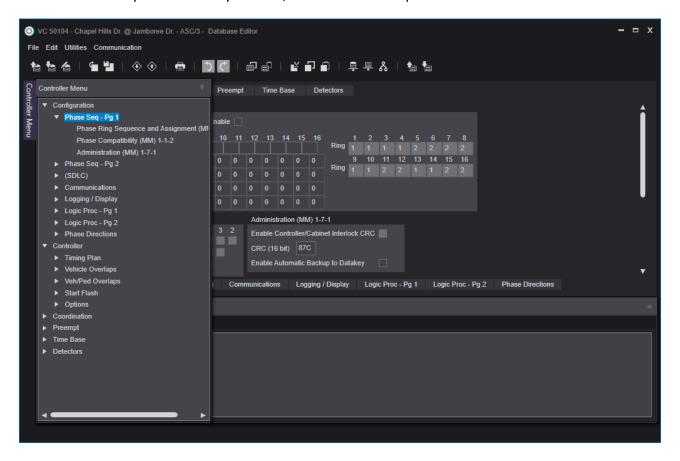
The Main Menu of the controller front panel opens:

I

Controller Editor Main Menu

# **Controller Editor Main Menu**

From the Controller Menu tab of the ASC/3 or Cobalt Controller Editor, you can quickly navigate to specific parameter sets. To expand the menus, click the signs. When you find the parameter set you want, double-click it to open that tab or sub-tab.



Adding and Changing Controller Settings Using the Editor

# Adding and Changing Controller Settings Using the Editor

**Note** • You must define the signal controller in the Entity Tree before you can manage it with the Signal Editor. Refer to *Adding Entities via the Entity Tree* on page 3-8.

When you configure a new signal controller remotely, the general workflow is:

- Load the default parameter values for the new controller from the CentracsLocal Edition database, or copy the parameter values from a different controller that has already been configured.
- 2 Make the necessary changes on the various tabs and sub-tabs.
- **3** Save the changes to the CentracsLocal Edition database.
- 4 Download the changes to the field controller.
- **5** Close the Editor workspace for that controller.

When you change existing controller parameters, the general workflow is:

1 Upload the current parameter values from the field controller.

IMPORTANT • Even if you think the values in the CentracsLocal Edition database are the same as the values on the field controller, it is a good idea to always use the master copy on the controller as the basis for your changes.

- 2 Make the necessary changes on the various tabs and sub-tabs.
- **3** Save the changes to the CentracsLocal Edition database.
- 4 Download the changes to the field controller.
- 5 Close the Editor workspace for that controller.

**Note** • Any changes you make to parameter values in the Signal Editor do not take effect until you download them to the field controller and save them to the CentracsLocal Edition database.

For more details, read the procedures in *Using the Controller Editor Workspace* on page 15-10.

• Using the Controller Editor Workspace

# **Using the Controller Editor Workspace**

This section gives an overview on how to use the ASC/3, ASC/2, Cobalt, and Eagle editors. Depending on your controller type, your editor may be different than the sample screens shown below. These samples are from the ASC/3 Editor.



**Note** • For details about specific tabs and parameters in the ASC/2, ASC/3, and Cobalt Editors, refer to the "ASC/2 Controller Editor" and "ASC/3 and Cobalt Controller Editor" sections in the Centracs online help.

I	lcon	Option	Description	Refer to
		Load Controller From Database	Loads controller parameters from the CentracsLocal Edition database into the Controller Editor workspace where you can see them and/or change them. If the controller settings have never been saved to the CentracsLocal Edition database, the Editor loads a set of default values which you can use as a starting point when you configure a new controller.	page 15-14
			<b>IMPORTANT</b> • Usually, this option is only used to make the initial configuration for a controller, or to <i>see</i> the current settings for a controller. To <i>change</i> the current settings for a controller, it is recommended that you upload the settings from the controller rather than loading them from the <u>CentracsLocal Edition</u> database.	
	<b>D</b>	Store Controller In Database	Saves controller parameters from the Controller Editor workspace to the CentracsLocal Edition database.	page 15-15
	4	Manage Database Version(s)	Opens the Manage Database Versions window. You can Edit Controller Properties (e.g., change the name or add comments) or delete a saved database.	
		Import Data File	Imports controller settings from a .DB file, for example, from a virtual controller.	page 15-19
	2	Export Data File	Saves the controller settings to a .DB file which you can use, for example, to test a virtual controller.	page 15-19
	٨	Export Synchro Files	Opens the UTDF Export window where you can select from timing data and phasing data to export.	

The table below identifies the options available in the Signal Controller Editor:

Using the Controller Editor Workspace •

lcon	Option	Description	Refer to
$\diamondsuit$	Import Synchro Files	Opens the UTDF Import Wizard where you can browse and import timing files.	
ā	Print	Prints the controller settings. You can specify which settings to print, and how you want the printout to look.	page 15-19
5	Undo	Undo the previous action. You can click the Undo icon repeatedly if you want to undo multiple steps.	page 15-17
¢	Redo	Redo the previous action. You can click the Redo icon repeatedly if you want to Redo multiple steps.	
Ē	Copy Controller	Copies all parameter values to the clipboard.	
Ĵ	Paste Controller	Pastes some or all of the parameter values from the clipboard (you can select which ones to paste, or you can paste all).	
Ľ	Cut	???	
	Сору	???	
Î	Paste	???	
	Compare Database	Compares the controller settings saved in the database with the settings currently loaded in the Editor.	page 15-19
<u> </u>	Quick Compare	Compares the controller settings saved in the database with the settings saved on the controller. This option is available in the ASC/2, ASC/3, and Cobalt Editors.	page 15-18
ஃ	Merge Database	Open the Merge Database window. You can merge with Signals, Stored Versions, Stored Templates, or Database Files.	
	Restore Database Data	Reloads controller parameters from the Centracs <u>Local Edition</u> database into the Controller Editor workspace. If you have made changes in the Editor that you do not want to save, you can use this option to "undo" your changes.	page 15-17
		<b>IMPORTANT</b> • This option reloads the values from the Centracs <u>Local Edition</u> database — NOT from the field controller. To reload the values from the field controller, use the "Upload From Controller" option.	

• Using the Controller Editor Workspace

lcon	Option	Description	Refer to
	Export UTDF Data	Saves the controller settings to a .CSV file in UTDF format, which you can open in the Synchro <sup>™</sup> signal timing application or in a spreadsheet application such as Microsoft Excel. For general information about the Synchro interface module, refer to page 1-20; for instructions on how to use the module, refer to page 15-24.	page 15-25 (NTCIP) page 15-29 (ACT)
	Import UTDF Data Run Asc3 Consistency Check	Imports Synchro <sup>™</sup> signal timing data from a UTDF-formatted .CSV file. For general information about the Synchro interface module, refer to page 1-20; for instructions on how to use the module, refer to page 15-24. Looks for conflicting parameter values in the controller configuration.	page 15-26 (NTCIP) page 15-30 (ACT) page 15-19
	Load Previously Saved Data	Loads a previously saved configuration of controller parameters from the Centracs <u>Local Edition</u> database into the Controller Editor workspace.	page 15-18
t	Upload From Controller	Uploads controller parameters from the database on the field controller to the Controller Editor workspace where you can see them and/or change them.	page 15-12
<b>₽</b>	Download To Controller	Downloads controller parameters from the Controller Editor workspace to the database on the field controller. This action overwrites the prior values that were stored on the controller.	page 15-15
	Close Controller	Closes the Controller Editor workspace display for a controller.	page 15-18

**Note** • You may not have access to all of these options, depending on the permissions specified in your Jurisdiction Role.

To upload controller parameter values from a field controller:

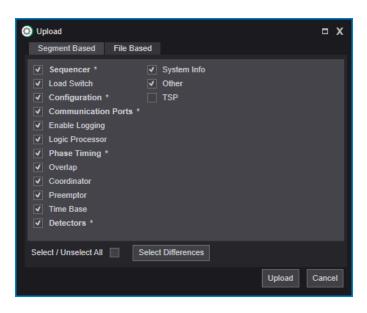
**1** From the Communication menu, select **Upload From Controller**.

Or

From the Database Editor, click the Upload From Controller 🄚 icon.

Using the Controller Editor Workspace •

2 Specify the segments to upload:



**Note** • Depending on the options you select, Centracs may do an FTP-based upload. If the FTP username and password have been changed on the controller, you must change them in Centracs to match. You can change them for all controllers on the Default Comm Parameters window (page 20-10) or for a single controller on the Device Communication Configuration window (page 3-44).

A list of segments is shown; any segments that are different on the controller than in CentracsLocal Edition are shown in bolded letters. You can select specific segments to upload, you can click Select All, or you can click Select Diff to upload only the segments that are different (this is the quickest upload option). For details about which settings are contained in each segment for ASC/3 and Cobalt controllers, refer to ASC/3 and Cobalt Controller Segments on page A-8.

**Note** • If you click Select Diff, the window shows checkmarks for the changed segments.

3 Click OK.

A progress bar is shown while the controller data is loaded into the Editor workspace. After it is loaded, the controller name is shown in the controller list on the left side of the Editor workspace, and the parameter values are shown on various tabs and subtabs in the right side of the workspace.

**Note** • The upload of settings into the Editor workspace does not automatically save them to the CentracsLocal Edition database. To do so, you must use the Store Controller In Database option (page 15-15).

• Using the Controller Editor Workspace

#### To load controller parameter values from the CentracsLocal Edition database:

**IMPORTANT** • Usually, this option is only used to make the initial configuration for a controller, or to *look at* the current settings for a controller. To *change* the current settings for a controller, it is recommended that you upload the settings from the controller rather than loading them from the <u>CentracsLocal Edition</u> database.

**1** From the File menu, select **Load Controller**.

Or

From the Database Editor window, click the Load from Centracs Database 🎦 icon.

The Load Controller window opens. This window shows all the controllers currently defined in the database, sorted by name. (To sort by a different column, right-click in the window and select an option from the Sort By list.)

O Load Controller		□ X
Name	Comment	Saved
* 2/14/2018 10:11:29 AM		2/14/2018 10:11:41 AM
2/14/2018 10:07:09 AM	Richland DB	2/14/2018 10:07:27 AM
2/14/2018 8:43:21 AM	AK Test Copy	2/14/2018 8:43:48 AM
2/14/2018 8:36:30 AM	AK Test	2/14/2018 8:36:46 AM
2/2/2018 1:57:29 PM	Test	2/2/2018 1:58:21 PM
12/6/2017 10:15:50 AM	test changes	12/6/2017 11:16:05 AM
12/6/2017 10:07:02 AM	Initial Upload	12/6/2017 11:07:47 AM
11/15/2016 15108 Baseline	Initial Upload new intersection	11/15/2016 10:02:39 AM 🔻
* Default Controller DB		Load Cancel

2 Double-click the controller to load, or select it and click Load.

A progress bar is shown while the controller data is loaded into the Editor workspace. After it is loaded, the controller name is shown in the controller list on the left side of the Editor workspace, and the parameter values are shown on various tabs and subtabs in the right side of the workspace.

**Note** • If the controller settings have never been saved to the Centracs<u>Local Edition</u> database, the Editor loads a set of default values which you can use as a starting point when you configure a new controller.

Using the Controller Editor Workspace •

#### To save controller parameter values to the CentracsLocal Edition database:

- **1** Highlight the controller to save.
- 2 From the File menu, select **Store Controller** or click the Store in Centracs Database icon.
- **3** On the Store Controller window, enter a name and comment for this version of the controller settings. By default, the name is set to the current date and time.
- 4 If you want this version to be the default version shown when the Editor is launched for this controller, turn on the Default checkbox.
- 5 Click Save.

**Note** • If the database consistency check finds a problem with the settings, a window is shown with details about the problem(s). You can click **Override** to save anyway, or click **Cancel** to return to the Editor to fix the problems.

A progress bar is shown while the controller data is saved.

#### To download controller parameter values to a field controller:

- **1** Highlight the controller to download.
- 2 From the Communication menu, select **Download To Controller** or click the Download to Controller **i** icon.
- 3 If you have not saved the data to the CentracsLocal Edition database yet, you will get a prompt to Store Unsaved Controller. To save the data to CentracsLocal Edition, click Yes.

**Note** • Depending on the options you select, Centracs may do an FTP-based download. If the FTP username and password have been changed on the controller, you must change them in Centracs to match. You can change them for all controllers on the Default Comm Parameters window for a single controller on the Device Communication Configuration window.

4 On the Download window, specify the segments to download. Any segments that are different on the controller than in Centracs are shown with an asterisk (\*). You can select specific segments to download, you can click Select All, or you can click Select Differences to download only the segments that are different (this is the quickest download option).

• Using the Controller Editor Workspace

💿 Download	□ X
Segment Based	
✓ Sequencer ✓ System Info	
✓ Load Switch ✓ Other	
✓ Configuration * TSP *	
✓ Communication Ports *	
Enable Logging	
✓ Logic Processor *	
✓ Phase Timing	
✓ Overlap	
✓ Coordinator	
Preemptor	
✓ Time Base	
✓ Detectors *	
Select / Unselect All Select Differences	
1	
Comment:	
Download	Close

- 5 Enter a comment about this download in the comments field.
- 6 Click **Download**. A progress bar is shown while the controller data is sent to the controller
- 7 You are asked to specify the segments to download:

Any segments that are different on the controller than in CentracsLocal Edition are shown in bolded letters. You can select specific segments to download, you can click **Select All**, or you can click **Select Different** to download only the segments that are different (this is the quickest download option). For details about which settings are contained in each segment for ASC/3 and Cobalt controllers, refer to **ASC/3 and Cobalt Controller Segments on page A-8**.

**Note** • If you click Select Differences, the window shows checkmarks for the changed segments.

8 Click OK.

A progress bar is shown while the controller data is sent to the controller. After the download has completed, you can make more changes to the controller if necessary, or you can close it.

#### To undo the changes you made in the Signal Editor:

Click the Undo icon in the toolbar or use the keyboard shortcut Ctrl-Z. This will undo you most recent change. Repeat as many times as needed to undo prior changes.

#### To copy parameter values from one controller to another:

#### **Note** • The controllers must be the same type.

- 1 Launch two instances of the Editor: one for the controller you want to copy (herein called Controller A), and one for the controller you want to overwrite (herein called Controller B).
- 2 For Controller A, make sure the settings you want to copy are currently shown in the Editor. For example, you may need to upload from the controller, or load a version from the Centracs database.
- **3** From the Edit menu, select **Copy Controller**.
- 4 In the Editor for Controller B, select **Paste Controller** from the Edit menu.
- **5** On the Controller Copy window, select the parameter set(s) you want to paste from Controller A, then click **Paste**.
- 6 Save Controller B to the CentracsLocal Edition database using the Store Controller option.
- 7 Download Controller B to the field controller with the **Download To Controller** option.

• Using the Controller Editor Workspace

#### To load a previous set of parameter values from the Centracs<u>Local Edition</u> database:

- 1 Highlight the controller to reload.
- 2 From the Utilities menu, select Load Previously Saved Data. The Load Saved Data selection window opens. This window contains a list of all prior configurations that have been saved to the CentracsLocal Edition database for this controller, and the date/time at which they were saved.

Ξ	🗉 Load Saved Data 📃 💷 🕱
	Please select the time of the save to load. 10/29/2010 9:50:19 AM 10/29/2010 1:38:42 PM 10/29/2010 4:31:48 PM 11/1/2010 9:58:17 AM 11/1/2010 2:12:45 PM 11/1/2010 4:09:58 PM
	11/1/2010 4:08:58 PM 11/1/2010 4:34:51 PM

3 Highlight the prior configuration to load, then click Load.

A progress bar is shown while the controller data is reloaded into the Editor workspace.

To compare the settings saved in the Centracs database with the settings saved on the controller:

From the Utilities menu, select **Quick Compare** or click the Quick Compare 🖳 icon.

When the comparison is complete, a results window tells you whether the data are the same or different. If different, an asterisk is shown on any tabs/sub-tabs containing differences

# To compare the settings saved in the Centracs database with the settings loaded in the Editor:

- 1 From the Utilities menu, select **Compare Database** or click the Compare Database icon. The Editor is now in comparison mode, and any differences between the settings loaded in the Editor and the settings saved in the CentracsLocal Edition database are highlighted in yellow. Also, an asterisk is shown on any tabs/sub-tabs containing differences.
- 2 Click the **Compare List** tab in the Comparisons section at the bottom of the window. This tab shows details about any differences found. The Current column shows the <u>current value</u> in the Editor; the Database column shows the current value in the <u>CentracsLocal Edition</u> database.
- 3 Click on an item to be taken to the appropriate screen for that setting. In most cases, the new and old values are shown side-by-side, where the value in yellow indicates the value in the CentracsLocal Edition database.
- 4 To turn off the comparison and go back to edit mode, select **Compare Database** again from the Utilities menu.

#### To find conflicting parameter settings:

The Editor automatically performs consistency checks on the data. To view the results of these checks at any time, click the Error List tab at the bottom of the window. If any conflicts have been found in the configuration of the controller, this tab shows details about the conflict(s). For example, this tab might display that the preempt dwell yellow time is greater than the programmed yellow time.

#### To print the controller settings:

- 1 From the File menu, select **Print**, or click the Print 🔤 icon. The Print window opens.
- 2 From the Custom Print Configurations list, select a print template. For more information about print templates, refer to page 15-20.
- **3** Using the checkboxes, select the parameter sets to include.
- 4 Click **Print**. (Or click **Print Preview** to view it first). If you select Print Preview first, you can change the page setup for printing, such as Portrait vs Landscape layout, margins, etc.

#### To export settings to a .DB file:

- **1** From the File menu, select **Export**.
- 2 On the Export window, specify the location and name for the export file, then click **Save**.

#### To import settings from a .DB file:

1 From the File menu, select **Import**.

• Custom Printouts of the Controller Settings

- 2 On the Import window, locate the .DB file that contains the settings to be imported. These settings will overwrite the settings currently loaded into the Editor for the controller.
- 3 Click Open.

**Note** • To put the newly imported settings into effect, be sure to save them to the database (page 15-15) and download them to the controller (page 15-15).

#### To close a controller from the Controller Editor:

- 1 From the File menu, select Close Controller.
- 2 If changes have been made to this controller but not saved to the CentracsLocal Edition database, you are prompted to save your changes first. To save the changes, click Yes, or to discard the changes, click No.

**Note** • The Controller Editor workspace display is closed for this controller. Any other loaded controllers stay open in the workspace.

#### *Custom Printouts of the Controller Settings*

#### **Note** • This feature is available for ASC/3, Cobalt, and Eos controllers.

In the Signal Editor, if you want to print a signal's controller settings, you can use the default printout format, or you can create your own custom printing templates. Custom print templates are maintained in the main Centracs user interface, not in the Editor.

The printing functions in the Editor use XML, CSS, and XSLT files to determine which data will be printed, and in what format. You will want to be familiar with these file formats before creating your own print templates in Centracs.

#### To define a custom print template to be used in the Editor:

- 1 On any machine where the Centracs client is installed, go to C:\ProgramData\Econolite\Prints. This folder contains all the files needed for printing from the Editor. The ECPI subfolder contains all the files for the Default print template.
- 2 Make a copy of the ECPI folder, and name it appropriately (for example, your agency name).
- **3** Optionally, open the .CSS file and make changes to fonts, font sizes, text alignment, etc., then save the file. The default CSS uses Arial for all fonts.
- 4 Optionally, make changes to any of the XSLT files, then save them.

- 5 Optionally, you can change the header image that appears at the top of your printouts. For example, you may want to change this to your agency logo. The image file can be a JPG, PNG, BMP, etc. Simply put a copy of the image file into the folder you created in step 2 above, and rename it HeaderImage (with no file extension).
- 6 From the Centracs main menu, select **File ▶ Settings**.
- 7 click the "Controller Editor Printouts" tab on the left side of the window.
- 8 Click Add. The Add Print Template window opens.
- **9** Select the controller type for which this template will be available (ASC3/Cobalt or Eos).
- **10** Enter a name and description (optional) for your new template, such as Timing Plans.
- 11 If you want this to be the default print template in the Editor (for all users), turn on the Default checkbox.
- 12 Click Load Directory.
- 13 In the Browse window, go to the folder you created in step 2 and click OK.
- 14 Select the files to include in your template. For example, if this template will only print timing plans, select the timingplan.xslt file, and deselect all other XSLT files. If you changed the CSS file or the header image, be sure to select those as well.
- 15 Click Save.

Your template is ready to be used in the Editor. Note that if you make further changes to the CSS, XSLT, or image files, these will not be loaded into Centracs automatically. You must follow the steps below to load these additional changes into your template.

You can create any number of templates from the same folder of CSS/XSLT files. For example, you can create one template that only includes the timingplan.xslt file, another template that only includes the coordinationoptions.xslt file, and another template that includes all the timebase files.

**Note** • Do not make changes to any of the file names. These must remain unchanged in order for Centracs to recognize them.

#### To change an existing print template:

- 1 In the folder you created in step 2 above, make any additional changes to the CSS, XSLT, or image files.
- 2 From the Centracs main menu, select File > Settings.
- 3 click the "Controller Editor Printouts" tab on the left side of the window.
- 4 Select the template to change, then click Edit. The Edit Print Template window opens.
- 5 Make any needed changes to the controller type, name, description, or default checkbox.
- 6 Click Reload Directory.

• Custom Printouts of the Controller Settings

- 7 In the Browse window, go to the folder where your template files are located and click **OK**.
- 8 Select the files to include in your template. For example, if this template will only print timing plans, select the timingplan.xslt file, and deselect all other XSLT files. If you changed the CSS file or the header image, be sure to select those as well.
- 9 Click Save.

#### Samples

The samples below show some of the changes you can incorporate into your print templates:

- The sample on the left uses the default CSS file and default header image, but has been changed to show only Timing Plan data.
- The sample on the right shows only Coordination Options, the header image has been changed, and some of the fonts have been changed.

Bolutions that Move the World™         065 - Front St@ Sam Walton Ln - 50510 on .22 - Econolite Type - ASC/3         Controlet Timmer Pian (MM) 21         Tareaton 1         Controlet Timmer Pian (MM) 21         Tareaton 1         Controlet Timmer Pian (MM) 21         Marce 1         Controlet Timmer Pian (MM) 21         Controlet Timmer Pian (MM) 21         Marce 1         Controlet Timmer Pian (MM) 21         Marce 1         Controlet Timmer Pian (MM) 21         Marce 1         Marce 1         Controlet Timmer Pian (MM) 21         Marce 1         Controlet Timmer Pian (MM) 21         Marce 1         Controlet Timmer Pian (MM) 21         Marce 1         Marce 1         Marce 1         Marce			Ę(				<b>G</b> .														
$ \begin{array}{c} \begin{array}{c} \begin{array}{c} \begin{array}{c} \begin{array}{c} \begin{array}{c} \begin{array}{c} \begin{array}{c}$							So	lutio	ns tł	nat N	Aove	the	e Wo	rld™	4						
$ \begin{array}{c} \hline \text{Controller Timing Pian (MM) 2-1} \\ \hline \text{Prate 1} \\ \hline $				Front Ct	@ Sam Walton I r	500	10	22	Feen	olito Ti		Nec/									
Plan 4       Grassilie KOCK, GU         Phase       1       2       3         Directon       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0			1- 60	Front St		1 - 508		.22 -	Econd	Sinte T	/pe - /	430/3	5								
Phrase         1         2         3           Min Green         5         5           Delay Creen         0         0         0           Obain Green         0         0         0         0           Waik         0         0         0         0           Ped Clear         0         0         0         0           Ped Clear         0         0         0         0           Ped Clear         0         0         0         0           Vehicle Ext         0         0         0         0           Maxi         35         35         0         5         1         Seconds         Offsets In         Seconds           OTM Max         0         0         0         0         0         0         0         0         0         0		ming	Plan (I	MM) 2-1					ſ	29	tla	R	nc	k (	<b>CU</b>						
Direction         Image         Original         <		1	2	3					U	<u>u</u> e				<b>N</b> , '							
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $		<u> </u>	f	-									-								
Ik Min Green       0       0       0         SM Green       0       0       0         Valk       0       0       0       0         Valk       0       0       0       0       0         Valk       0       0       0       0       0         Valk Max       0       0       0       0       0         Valk Max       0       0       0       0       0       0         Valk Max       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0 <t< td=""><td></td><td>5</td><td>5</td><td>5</td><td></td><td></td><td></td><td></td><td></td><td>Val</td><td></td><td>1.0</td><td>60</td><td>Hes</td><td>10</td><td></td><td></td><td></td><td></td><td></td><td></td></t<>		5	5	5						Val		1.0	60	Hes	10						
ledgy Green         0         0         0           falk         0         10         0           falk         0         0         0           faile         0         0         0           faile         0         0         0           faile         0         0         0           faile         0         0         0         0           faile         0         0         0         0         0           faile         0         0         0         0         0         0           faile         0         0         0         0         0         0         0           faile         0         0		0	-									- U.	20	116	U						
Valie         0         10         0           Valie         0         0         0           Valie         0         0         0           Valie         0         0         0           Valie         0         0         0           ed Clear         0         16         0         0           ed Clear         0         0         0         0         0           ed Clear         0         0         0         0         0         0           ed Clear         0         0         0         0         0         0         0           sed Clear         0         0         0         0         0         0         0         0           sed Clear         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0		0	0	_						-		-	9-	-							
Galk2         0         0         0           Jalk Max         0         0         0           Jalk Max         0         0         0           de Clear         0         0         0         0           de Clear         0         0         0         0           de Clear Max         0         0         0         0           de Clear Max         0         0         0         0           system Source         TBC         System Format         STD           system Source         TBC         System Format         STD           system Source         TBC         System Format         STD           lax1         35         35         35         Delay Cord Wk-LZ         No         Fore Off         Float           lax3         0         0         0         0         Offset Reference         Lead         Use Ped Time         Yes           YM Max         0         0         0         0         O         Offset Reference         Lead         Use Ped Reservice         No           ed Glear         1.0         1.0         1.0         1.0         1.0         1.0         1.0         1.0	elay Green	0	0	0																	
Jakk 2       0       0       0         Jakk Max       0       0       0         ed Clear       0       0       0         ed Clear       0       0       0       0         ed Clear       0       0       0       0       0         ed Clear       0       0       0       0       0       0         sed Clear       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0	/alk	0	10	0		06	5 - Fro	nt St (	@ San	n Wal	to n L r	ı - 50	510 or	1.22 -	Econo	lite T	vne - <i>l</i>	ISC/3			
ed Clear       0       16       0       Coordination Options         ed Clear 2       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0 <td></td> <td>0</td> <td>0</td> <td>0</td> <td></td> <td></td> <td></td> <td></td> <td>· · · · ·</td> <td></td>		0	0	0					· · · · ·												
ed Clear 2       0       0       0         ed Clear Max       0       0       0       0       0       0         ded Clear Max       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0		0		-	~																
ed Clear Max       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0 <t< td=""><td></td><td>0</td><td></td><td>-</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></t<>		0		-																	
ed CO         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0 <td></td> <td>•</td> <td>-</td> <td>-</td> <td></td> <td>-1</td> <td></td>		•	-	-		-1															
ehicle Ext       5.0       5.0       5.0       5.0       5.0       5.0       5.0       5.0       5.0       5.0       5.0       5.0       5.0       5.0       5.0       5.0       5.0       5.0       5.0       5.0       5.0       5.0       5.0       5.0       5.0       5.0       5.0       5.0       5.0       5.0       5.0       5.0       5.0       5.0       5.0       5.0       5.0       5.0       5.0       5.0       5.0       5.0       5.0       5.0       5.0       5.0       5.0       5.0       5.0       5.0       5.0       5.0       5.0       5.0       5.0       5.0       5.0       5.0       5.0       5.0       5.0       5.0       5.0       5.0       5.0       5.0       5.0       5.0       5.0       5.0       5.0       5.0       5.0       5.0       5.0       5.0       7.0       8.0       9.0       10       11       12       13       14       15       14       15       15       14       15       15       15       15       14       15       15       14       15       15       14       15       15       14       15       15       15       15		v	-	-																	
ehicle Ext 2       0.0       0.0       0.0       1         lax1       35       35       35         lax2       40       40       40         lax2       40       40       40         lax3       0       0       0         lax3       0       0       0         YM Max       0       0       0         YM Max       0       0       0         ym Step       0.0       0.0       0.0         gata       0       0       0         ym Step       0.0       0.0       0.0         ed Gear       1.0       1.0       1.0         ed Revert 2.0       2.0       2.0       0         ed Revert 2.0       2.0       2.0       2.0         ed Revert 2.0       2.0       2.0       2.0         insk nt       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0		-	-	-																	
Iax1       35       35       35       35       35       35       35       35       35       35       35       35       35       35       35       35       35       35       35       35       35       35       35       35       35       35       35       35       35       35       35       35       35       35       35       35       35       35       35       35       35       35       35       35       35       35       35       35       35       35       35       35       35       35       35       35       35       35       35       35       35       35       35       35       35       36       36       36       36       37       36       36       37       36       36       37       89       10       11       12       13       14       15       36       36       37       89       10       11       12       13       14       15       36       37       89       10       11       12       13       14       15       36       37       89       10       11       12       13       14       15       <					• •																
ax2       40       40       40       40       40       40       40       40       40       40       Bax3       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0									Max 3	Select			MAXIN	H							
tax3       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0			_				-		<b>T</b>	0.65			These								
YM Max       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0 <td></td>																					
hym Step     0.0     0.0     0.0       hym Step     0.0     0.0     0.0       fellow     3.0     3.0     3.0       1.0 cal Zero Override     No     FO Added Ini Green     No       Verd Clear     1.0     1.0     1.0       1.0 ded Max     0.0     0.0     0.0       ted Clear     1.0     1.0     1.0       ted Clear     1.0     1.0     1.0       ted Max     0.0     0.0     0.0       ted Revert     2.0     2.0     2.0       ted Revert     2.0     2.0     2.0       ted Alade     0     0     0       ted Revert     0.0     0.0     0.0       ted Revert     2.0     2.0     2.0       ted Revert     0.0     0.0     0.0       ted Revert     0.0     0.0			-	-																	
Bllow     3.0     3.0     3.0     3.0     3.0     3.0     3.0     3.0     3.0     3.0     3.0     3.0     3.0     3.0     3.0     3.0     3.0     3.0     3.0     3.0     3.0     3.0     3.0     3.0     3.0     3.0     3.0     3.0     3.0     3.0     3.0     3.0     3.0     3.0     3.0     3.0     3.0     3.0     3.0     3.0     3.0     3.0     3.0     3.0     3.0     3.0     3.0     3.0     3.0     3.0     3.0     3.0     3.0     3.0     3.0     3.0     3.0     3.0     3.0     3.0     3.0     3.0     3.0     3.0     3.0     3.0     3.0     3.0     3.0     3.0     3.0     3.0     3.0     3.0     3.0     3.0     3.0     3.0     3.0     3.0     3.0     3.0     3.0     3.0     3.0     3.0     3.0     3.0     3.0     3.0     3.0     3.0     3.0     3.0     3.0     3.0     3.0     3.0     3.0     3.0     3.0     3.0     3.0     3.0     3.0     3.0     3.0     3.0     3.0     3.0     3.0     3.0     3.0     3.0     3.0     3.0     3.0     3.0     3.0<		0.0	0.0	-							Green										
Image: Second Signal Action Second Signal	· · ·			_							Groon										
Image: Note and the second of the second	ed Clear	1.0	1.0	1.0	ice-sync coun		0		wuru	sync			140								
Image: Phase       1       2       3       4       5       6       7       8       9       10       11       12       13       14       15         ctB4       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0 <td></td> <td></td> <td></td> <td></td> <td>Auto Perm Mini</td> <td>imum</td> <td>Green</td> <td>(Seco</td> <td>onds) (</td> <td>MM</td> <td>3-4</td> <td></td>					Auto Perm Mini	imum	Green	(Seco	onds) (	MM	3-4										
act B4       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0 <td>led Revert</td> <td>2.0</td> <td>2.0</td> <td>2.0</td> <td></td> <td></td> <td></td> <td><u> </u></td> <td><u> </u></td> <td><u> </u></td> <td></td> <td>7</td> <td>8</td> <td>Q</td> <td>10</td> <td>11</td> <td>12</td> <td>13</td> <td>1/1</td> <td>15</td> <td>16</td>	led Revert	2.0	2.0	2.0				<u> </u>	<u> </u>	<u> </u>		7	8	Q	10	11	12	13	1/1	15	16
eOAct       0.0       0.0       0.0         laxInt       0       0       0         ime B4       0       0       0         ars Wt       0       0       0         TPTDuc       0.0       0.0       0         TReduc       0       0       0         Imese       1       2       3       4       5       6       7       8       9       10       11       12       13       14       15         TReduc       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0	ct B4	0	0	-		-	-	-	-	-	-		-	-							0
Image: B4     0     0     0       ars Wt     0     0     0       TPTDuc     0.0     0.0     0.0       TReduc     0     0     0       Image: Demand (MNI) 3-5         Phase     1     2     3     4     5     6     7     8     9     10     11     12     13     14     15       Image: Demand (Demand (Deman					Minimum Green	U	v	U	U	U	U	0	v	V	0	V	v	U	V	U U	U
stars Wt     0     0     0       TPTDuc     0.0     0.0     0.0       TReduc     0     0     0       Iin Gap     0.0     0.0         Demand 1     1       Demand 2     1         Demand 1       Demand 2		•	-	-																	
Phase     1     2     3     4     5     6     7     8     9     10     11     12     13     14     15       Treduc     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0 <td></td> <td>•</td> <td>-</td> <td>-</td> <td>Split Demand (A</td> <td>IMD 3</td> <td>-5</td> <td></td>		•	-	-	Split Demand (A	IMD 3	-5														
In Flore     0.0     0.0     0.0       TReduc     0     0       Demand 1     Demand 2       Demand 2     Demand 1       Demand 1     Demand 2       Demand 2     Demand 2       Detector     0			-			· · · ·		•		E				•	10	44	40	40	44	45	16
Demand 2		_	_			<u> </u>	Z	ð	4	ð	0	'	0	y	10		IZ	13	14	19	0
Demand     1     2       Detector     0     0		-	-	-											<u> </u>				<u> </u>		
Detector 0 0	in Gap	0.0	0.0	0.0	Demand 2																
Detector 0 0					Domond		•	<u> </u>													
							-														
Call Time (Sec) 0 0					Detector Call Time (Sec)		-														
					Cycle Count		0	0													

• Using the UTDF Interface Module

## **Using the UTDF Interface Module**

You can use the UTDF (Universal Traffic Data Format) interface module to:

- Save controller timing and phase settings to a .CSV file in UTDF format, which you can open in the Synchro<sup>™</sup> signal timing application or in a spreadsheet application such as Microsoft Excel.
- Import Synchro<sup>™</sup> signal timing plans and coordination data from a UTDF-formatted .CSV file.

For general information about this module, refer to *Synchro™ UTDF Interface Module* on page 1-20.

For NTCIP controllers, the UTDF interface is accessed through the Signal Editor. For instructions on how to access the Signal Editor, refer to *Overview of the Signal Editor* on page 15-2.

For ACT controllers, the UTDF interface is accessed through the Entity Tree (page 3-1) or Map Viewer (page 5-3).

**Note** • You must get a license key from Econolite Technical Support in order to use the UTDF interface.

### **Overview of the Export Process**

When you export controller data from Centracs, you can choose to export timing data, phasing data, or both:

Timing data = the basic coordination data for the controller. This includes, for each programmed coordinator pattern, the pattern number, controller ID number, splits for up to 16 phases, cycle length and offset (in seconds), coordinated phases, and other reference data.

Because Synchro only supports split and offset values in seconds, if the controller has been configured to use percentages, the percentage values are changed to seconds during export. Small inaccuracies may occur due to rounding of the changed values.

For ASC/3 and Cobalt controllers, if a timing plan is not assigned, Centracs exports timing plan 1 by default.

Phasing data = the basic phase timing data for the controller. This includes, for up to 8 phases (ASC/2 and W4 controllers) or 16 phases (ASC/3, Cobalt, Oasis, and Eagle controllers), such information as the ring structure (labeled 'BRP' in the export file) and times for Min/Max Green, Yellow, Walk, Extension, etc.

Overview of the Import Process

#### **Overview of the Import Process**

You can use the UTDF interface to import timing data that has been analyzed and optimized in Synchro back into CentracsLocal Edition. (You cannot import phasing data from Synchro into CentracsLocal Edition; you must manually enter phasing data into the Signal Editor, then download it to the controller.)

Because Synchro only supports split and offset values in seconds, if the controller has been configured to use percentages, the values in seconds are changed to percentages during import. Small inaccuracies may occur due to rounding of the values.

#### **NTCIP Controllers**

#### Exporting Data to UTDF Format (NTCIP)

# To export controller settings to a UTDF-formatted CSV file: (to open in Synchro or other application)

- 1 Optionally, in the Signal Editor, load the controller settings to export (you can load them from the CentracsLocal Edition database or upload them from the controller).
- 2 From the File menu of the Signal Editor, select Export Synchro files.

The UTDF Export window launches displaying the Controller to export.

O UTDF Export: (	Controller "VC 15103" ID: 256	<b>□ X</b>
Select from timing	g data and phasing data to export	
Select Desired Fe	ormat	
Synchro 5		
Synchro 6 or	higher	
Synchro ID 250	δ	
Select Data to be	Exported	
✓ Timing		
Timing Folder:	C:\Users\tfeamley\Documents	Browse
Phasing		
Phasing Folder:	C:\Users\tfeamley\Documents	Browse
	Export	Cancel

**3** Select the desired format to export to; **Synchro 5** or **Synchro 6 or higher**.

- NTCIP Controllers
  - 4 The Sychro ID field shows the number that will be exported as the intersection ID (INTID) for the signal. To change this number, if needed, double-click the signal and enter a different number to export as the INTID (up to five digits).
  - **5** Specify the type(s) of data to export.
  - 6 If you selected to export both Timing and Phasing data, separate files will be made for each data type. Use the **Browse** options to specify the location(s) to save the export files, then click **Next**.

File names are automatically assigned by the program, in this format: TimingDataXXX.csv or PhasingDataXXX.csv, where XXX is the signal name.

7 Click Export.

The files are added to the location(s) you specified, with a file extension of .csv (comma-separated values). If you exported more than one controller, separate files are made for each controller. These files can then be imported into Synchro, or opened in any application that supports .csv files (such as Microsoft Excel).

Importing Data from UTDF Format (NTCIP)

**IMPORTANT** • When you import a file back into **Centracs<u>Local Edition</u>**, the INTID value (which is the intersection ID or controller number) *must* be the same as the INTID value that was originally exported from **Centracs<u>Local Edition</u>**.

#### To import controller settings from a UTDF-formatted file:

**1** From the File menu of the Signal Editor, select **Import Synchro files**.

The UTDF Import Wizard launches.



2 On the Timing File field, click **Browse** and find the UTDF-formatted .csv file to be imported.

NTCIP Controllers •

Timing File:	C:\Timin	aData\\//	odm		N L In	ion o											Browse
rinning rine.	C. trining	yDatavvi	Journa	an w	NOI	1011.03	57										
	PLANID														S13	S14	
	1	1	15	30	15	30	15	30	15	30	0	0	0	0	0	0	
	2	1	20	30	20	30	20	30	20	30	0	0	0	0	0	0	
	3	1	25	30	25	30	25	30	25	30	0		0		0	0	
	4	1	30	30	30	30	30	30	30	30	0	0	0	0	0	0	
	5	1	30	35	30	35	30	35	30	35	0	0	0	0	0	0	
	•															•	

When you select the file, a preview of the data is shown.

3 Click Import.

The imported values are shown in the Editor, in comparison mode, where you can <u>easily find</u> the differences between the imported data and the data stored in the <u>CentracsLocal Edition</u> database. For details about comparison mode, refer to page 15-18.

- 4 Carefully review the Coordinator pages to find any differences between the imported data and the current CentracsLocal Edition data. When you are ready to activate the imported settings, select Compare Controller from the Utilities menu to turn off comparison mode.
- **5** Save the new settings to the database. For details, refer to page 15-15.
- 6 Download the new settings to the controller to activate the new timing settings. For details, refer to page 15-15.

NTCIP Controllers

#### Notes About Imported/Exported Data

#### ASC/3 and Cobalt controllers

- The export of each pattern uses the default sequence (sequence 1) in the controller. There are 2 reasons for this: the sequence being run is not known at export time, and the UTDF format does not have a way to specify which sequence is active.
- Import of leading phases is problematic. There is no way to represent the correct sequencing on a pattern-to-pattern basis. Import of timing data uses the default sequence (sequence 1). Synchro does not know about sequence assignments, so an import to multi-mapped patterns does not accurately represent the data from Synchro. Importing the leading phases updates to the default sequence but this leaves room for error. If two or more patterns have different leading phases, the last one is used. At this point the user must adjust phase sequences to pattern mappings to accurately represent the lead/lag phases for a specific pattern.

#### ASC/2 & ASC/2 NTCIP controllers

- Import of leading phases is currently set up to enable alt sequence for the barrier of the phase being imported if the phase is not in position 1. This is the best way for Synchro to optimize phase lead/lag. These alt sequence enables are on a per pattern basis and conform to possible outputs from Synchro. The one problem is that Synchro seems to have the ability to make changes to a ring in a barrier such that enabling an alt sequence does not correctly reflect the changes.
- The alt sequences that are observed are the main ones on the coordination page. There seem to be other ways to alter sequencing; these are ignored in favor of maintaining a generic representation of data to and from Synchro.
- The split values that are used to and from Synchro are the values for the actual pattern on the coordinator page. XArtPattern remapping of splits, or any other method, is not observed. There is no way to maintain this additional information in UTDF for Synchro to understand a proprietary controller setup. Additional mapping of this type of setup must be done by the user manually.

ACT Controllers •

#### ACT Controllers

Exporting Data to UTDF Format (ACT)

# To export controller settings to a UTDF-formatted CSV file (to open in Synchro or other application):

- 1 Check the value of the "UseAssetIDForACTSynchro" Global Setting. If set to true, Centracs exports the asset ID / serial drop address to the INTID column in the export files. If set to false, Centracs exports the entity ID. If the export files will later be imported back into Centracs, the "UseAssetIDForACTSynchro" setting at the time of import must match the setting at the time of export. For instructions on how to check and/or change this setting, refer to *Viewing and Editing Global and Local Settings* on page 20-61.
- 2 From the Entity Tree or Map Viewer, right-click a signal and select Synchro Export...

Export Syn	ichro Traffic Data Format	
Signal to E	Export: 🚦 Signal - Black Forest @ Woodmen W4 controller	
Timing File		
Phasing File		
Pattern	1 •	
Timing Page		
	- Firmed	
	Export	Close

- 3 Click and specify the location(s) to save the export files (or type the paths and filenames into the fields). The two files must have different names.
- 4 Select a Pattern to export.
- **5** Select a Timing and Functions page to export.
- 6 Click Export.

Separate files are made for each data type. The files are added to the location(s) you specified, with a file extension of .csv (comma-separated values). These files can then be imported into Synchro, or opened in any application that supports .csv files (such as Microsoft Excel).

You can repeat these steps to export more patterns and timing pages.

**Note** • The Timing Page option is not shown for Oasis controllers.

ACT Controllers

Importing Data from UTDF Format (ACT)

#### To import controller settings from a UTDF-formatted file:

- 1 Check the value of the "UseAssetIDForACTSynchro" Global Setting. If set to true, Centracs treats the imported intersection ID (INTID) value as the asset ID / serial drop address. If set to false, Centracs treats the imported INTID value as the entity ID. This setting must match the type of INTIDs in the file you are importing. For example, if you exported data from Centracs using the entity ID and then processed it in Synchro, when you import it back into Centracs, "UseAssetIDForACTSynchro" must be set to false. On the other hand, if you want to import a file that was exported from a system that uses asset IDs, "UseAssetIDForACTSynchro" must be set to true. For instructions on how to check and/or change this setting, refer to *Viewing and Editing Global and Local Settings* on page 20-61.
- 2 From the Entity Tree or Map Viewer, right-click a signal and select Synchro Import...

Import Synd	hro Traffic Da	ita Format	
Signal to I	mport: 💈	Signal - Black Forest @ Woodmen W4 controller	
Timing File			
Phasing File			
Pattern	1 -		
Timing Page	0 -		
		ſ	Import Close
		l	

- 3 Click and find the UTDF-formatted .csv files to import (or type the paths and filenames into the fields).
- 4 Select the Pattern being imported.
- **5** Select the Timing and Functions page being imported.
- 6 Click Import.
- 7 If the import was successful, Centracs gives you the option to open the Signal Editor in order to see the imported values and download them to the controller. Click **Yes**.
- 8 The imported values are shown in the Editor, in comparison mode, where you caneasily find the differences between the imported data and the data stored in the-CentracsLocal Edition database. For details about comparison mode, refer topage 15-18. IS THIS TRUE FOR ACT?
- 9 In the Editor, carefully review the Coordinator pages to find any differences between the imported data and the current CentracsLocal Edition data. When you are ready to activate the imported settings, select Compare Controller from the Utilities menu to turn off comparison mode. IS THIS TRUE FOR ACT?
- **10** In the Editor, carefully review the new values. When you are ready to activate the imported settings, download the new settings to the controller.

Sample Files

**11** If necessary, you can repeat these steps to import more patterns and timing pages.

**Note** • The Timing Page option is not shown for Oasis controllers.

## Sample Files

#### Sample Timing File

4	А	В	С	D			G	Н			К		М	Ν	0	Ρ	Q	R		Т	U	V	W	
1	Timing Plans																							
2	PLANID	INTID	<b>S1</b>	<mark>S2</mark>	<b>S</b> 3	<b>S4</b>	<b>S</b> 5	<mark>S6</mark>	<b>S7</b>	<b>S8</b>	<mark>S9</mark>	S10	S11	S12	S13	S14	S15	S16	CL	OFF	LD	REF	CLR	
	1	1	15	30	15	30	15	30	15	30	0	0	0	0	0	0	0	0	90	5	1357	26+	0	
4	2	1	20	30	20	30	20	30	20	30	0	0	0	0	0	0	0	0	100	35	1357	26+	0	
5	3	1	25	30	25	30	25	30	25	30	0	0	0	0	0	0	0	0	110	0	1357	26+	0	
6	4	1	30	30	30	30	30	30	30	30	0	0	0	0	0	0	0	0	120	0	1357	26+	0	
7	5	1	30	35	30	35	30	35	30	35	0	0	0	0	0	0	0	0	130	0	1357	26+	0	
Q ∢ •	L ▶ ▶ <b>Timing</b>	DataW	00	dme	en @	N	Unio	on "	2						Ū ◀ [				1111					

PLANID = Coordinator Pattern #

INTID = intersection ID or signal controller number

S1 - S16 = split values

CL = Cycle Length

OFF = Offset Value

LD = leading phase

REF = reference (+ indicates start of green; the number 26 in the sample above indicates phases 2 and 6) <del>CLR = BG does not know, he would need to look it up; Centracs does not use all the possible values shown in these files for example Vield170</del>

#### Sample Phasing File

	А	В	С	D	E	F	G	Н	I	J	K 🗍
1	Phasing Data										
2	RECORDNAME	INTID	D1	D2	D3	D4	D5	D6	D7	D8	
3	BRP	1	111	112	211	212	121	122	221	222	
4	MinGreen	1	5	5	5	5	5	5	5	5	
5	MaxInitial	1									
6	AddedMin	1									
7	MinActuation	1									
8	MaxActuation	1									
9	MaxGreen	1	35	35	35	35	35	35	35	35	
10	MinSplit	1	5	5	5	5	5	5	5	5	
11	MaxExtension	1									
12	VehExt	1	5	5	5	5	5	5	5	5	
13	TimeBeforeReduce	1	0	0	0	0	0	0	0	0	
14	ReduceBy	1									
15	ReduceEvery	1									E
16	TimeToReduce	1	0	0	0	0	0	0	0	0	
17	MinGap	1	0	0	0	0	0	0	0	0	
18	Yellow	1	3	3	3	3	3	3	3	3	
19	AllRed	1	1	1	1	1	1	1	1	1	
20	DualEntry	1	0	0	0	0	0	0	0	0	
21	Recall	1	1	1	1	1	1	1	1	1	
22	InhibitMax	1	1	1	1	1	1	1	1	1	
23	Start	1									
24	End	1									
25	Yield170	1									
26	LocalStart	1									
27	LocalYield	1									
28	LocalYield170	1									
29	Walk	1	0	7	0	7	0	7	0	7	
30	DontWalk	1	0	5	0	5	0	5	0	5	-
31	PedCalls	1									
i i	PhasingData	Noodm	en @ N Un	ion 🦉	7				1111		

INTID = intersection ID or signal controller number

D1 - D8 = phase numbers

BRP = Barrier/Ring/Position phase sequencing (for example, 122 indicates Barrier 1, Ring 2, Position 2; 211 indicates Barrier 2, Ring 1, Position 1)

etc. (these come from Controller tab / Timing Plan tab?)

For more information about the data types in these files, refer to your Synchro documentation.

16

# **Exchanging Data with 'Local Edition'**

## **Merging Entity Data**

You can use the Merge Data function to synchronize entities (signals, detectors, etc.) and their associated channel/controller data between the main Centracs database and a Local Edition database, or between two Local Edition databases. For example, if you are driving out to a controller with your Local Edition laptop, it saves time to copy all the necessary data from Centracs before you leave the office, rather than to configure it from scratch in Local Edition.

In simple terms, the merge function populates Database B with the settings that have already been configured in Database A. If the settings have already been populated in Database B from a *prior* merge, a subsequent merge overwrites them.

**Note** • To save time, it is recommended that you configure all the necessary connection profiles for each signal before you merge data. For example, if you use Local Edition in conjunction with a central Centracs database, and if the method to connect to Signal 1 via central (for example, over an IP channel) is different than the method to connect to Signal 1 via Local Edition (for example, through a serial connection), configure the tabs on the Device Communication Configuration window (page 3-44) in Centracs before you merge Signal 1 to Local Edition. This way Centracs acts as a master copy of the connection profiles: you only have to add them one time, then you can merge them to multiple Local Edition databases if necessary. If you only configure the Local Edition tab(s) in the Local Edition database and not in the master database, you risk overwriting the data in those tabs the next time you do another merge from the master database.

**Note** • Do not run the Centracs client and the Local Edition client on the same machine at the same time.

**Note** • When the Merge Data function is used for an Entity Tree that contains multiple copies of an entity, only the original entity gets merged. Any copies of that entity are ignored during the merge process.

In the procedure that follows, the "receiving" database is the database you will copy data *to*, and the "sending" database is the database you will copy data *from*.

Merging Entity Data

#### To synchronize entity data between two databases:

**IMPORTANT** • Because the synchronization of two databases is a complex operation, please read this entire procedure AND the notes at the bottom before you start the merge.

**1** Depending on the type of merge, launch the appropriate client(s):

Receiving Database	Sending Database	Client(s)					
Local Edition	Centracs	Launch the Local Edition client for the receiving database (do not launch the Centracs client on the same machine at the same time)					
Centracs	Local Edition	Launch the Local Edition client for the sending database, and the Centracs client for the receiving database (on a different machine)					
Local Edition	Local Edition	Launch Local Edition clients for both databases (one on each Local Edition machine)					
Centracs	Centracs	Launch the Centracs client for the receiving database					

- 2 If this is the first merge to the receiving database, configure the Device Manager in the receiving database before you merge data. Also, at least one channel must be defined. For instructions, refer to *Setting Up Communications* on page 20-32.
- 3 From the receiving system, select **Management** ▶ **Merge Data...** from the main menu. For example, to copy data from the main Centracs system into a Local Edition database, do the merge from the Local Edition system.

The Database Selection window opens.

E	Database Sel	ection	
	Specify databa	se to merge from:	
	Core Location	vm2008-kmcc v	Port 81
			K Cancel

4 Specify the sending database, then click **OK**. For details about the Database Selection window, refer to page 16-11.

Merging Entity Data •

_ Merge Data		
My Core localhost		Their Core vm2008-kmcc
Entities	Choice	Entities
	🔶 🗣	System Colorado Springs 09/19/2011 1:59:56 PM
	🔶 🖗	Group New Signals in Testing 09/19/2011 1:59:56 PM
		Group Convention Center Signals 09/19/2011 1:59:56 }
		Group Briargate CCTVs 09/21/2011 3:33:23 PM
	🔶 🖗	
Controller Data	Choice	Controller Data
		Woodmen @ N Union Blvd ASC3 09/19/2011 2:00:34 🛙
	🔶 🖗	Woodmen @ N Academy ASC3 09/19/2011 2:00:34 PN
		Woodmen @ Chapel ASC3 09/19/2011 2:00:34 PM
	🔶 🗣	Woodmen @ Rockrimmon ASC3 09/19/2011 2:00:34 P
	🔶 🔶	
Device Channel Assignments	Choice	Device Channel Assignments
	🔶 🗣	Woodmen @ N Union Blvd, Profile ID:2, Drop Address:
	🔶 🖶	Woodmen @ N Union Blvd, Profile ID:3, Drop Address:
		Woodmen @ N Academy, Profile ID:2, Drop Address:0
		Woodmen @ N Academy, Profile ID:3, Drop Address:0
	🔶 🔶	
	Import all street na	ames from: vm2008-kmcc Save Refresh Close

If a connection is successfully made to the sending database, the Merge Data window shows a list of the items that you can copy to the receiving database.

There are four types of items you can copy:

- Entities Each item is an entity in the Entity Tree (such as a signal). Note that you cannot merge DMS, CCTV, Link, or BlueTOAD entities.
- **Controller Data** Each item is a set of parameters that dictates how the specified signal operates; these are the same parameters that you can see and edit in the Controller Editor (page 15-1).
- Device Channel Assignments Each item is a profile that tells Local Edition how to communicate with the specified signal; these profile parameters are specified on the Device Communication Configuration window (page 3-44). Three different profiles can be defined for each signal — one for Centracs and two for Local Edition. You can merge the Local Edition profiles; you cannot merge the "Centracs" profile.
- Street Names All street names defined in the Street Names Editor.

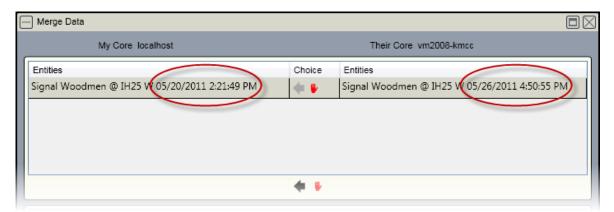
Note that you cannot merge a child entity without its parent(s). For example, if you merge a signal that is a child of a Subsection, you must also merge the Subsection, the Section, and the System. If you do not, an error tells you the name of the parent that must also be merged. Also note that the merge function does not automatically merge child entities. For example, if you merge a Section that is a parent of multiple signals,

#### Merging Entity Data

the merge function does not automatically merge the signals. You must manually select these child entities when you do the merge. (The exception to this rule is that when you merge a signal, the vehicle detectors for that signal are automatically merged.) It is highly recommended that you preserve the original hierarchy of the Entity Tree when you merge entities. The easiest way to do this is to merge *all* entities at the same time.

It is also important to understand that some items are dependent on others. For example, Controller Data and Device Channel Assignments are always associated with a specific signal; therefore, you must not merge those items without merging the signal entity itself. Similarly, Device Channel Assignments are meaningless unless the Channels are configured first. Because of these dependencies, when you merge to a database for the first time, it is usually best to merge all Entities, Controller Data, and Device Channel Assignments at the same time.

For **Entities** and **Controller Data**, if an item is in the sending database but not the receiving database, it is shown in the right half of the window. If an item is in both databases, the merge function compares the last-modified date & time on the two copies to infer whether there are any differences between the two copies. If the timestamps on the two copies are the same, the item is not shown in the list, because a merge is not necessary for that item. If the timestamps are different, the copy in the sending database is shown in the right half of the window, and the copy in the receiving database is shown in the left half of the window:



If an entity in the sending database has the same name as an entity in the receiving database, the entity is shown with an asterisk to indicate a possible conflict. If the two conflicting entities are *of the same type*, you can choose whether to merge them or not; if the two conflicting entities are *of a different type*, they cannot be merged. In the example below, the receiving system has a Group named "3", and the sending system

has a Section named "3". Before the Section can be merged, one of the entities must be manually renamed in the Entity Tree to resolve the conflict.

[	-) Merge Data			
	My Core localhost		Their Core vm2008R2-hack	
	Entities	Choice	Entities	
	Group 3 2/20/2013 12:15:13 PM		* Section 3 5/22/2012 4:59:33 PM	
		-	System HackTown 5/22/2012 4:59:33 PM	

For **Device Channel Assignments**, if an item is in the sending database but not the receiving database, it is shown in the right half of the window. If an item is in both databases, the merge function compares the settings for the two copies to determine whether there are any differences between the two. If the two copies are the same, the item is not shown in the list, because a merge is not necessary for that item. If the two copies are different, the copy in the sending database is shown in the left half of the window, and the copy in the receiving database is shown in the left half of the window:

	+ +	
Device Channel Assignments	Choice	Device Channel Assignments
Woodmen @ N Union Profile ID:1 DropAddress:2	-	Woodmen @ N Union Profile ID:1 DropAddress:2
Woodmen @ N Academy Profile ID:1 DropAddless:1	+ 🖌	Woodmen @ N Academy Profile ID:1 DropAddiess:0
Woodmen @ Chapel Profile ID:1 DropAddress:0	<b>*</b>	Woodmen @ Chapel Profile ID:1 DropAddress:0
Woodmen @ Rockrimmon Profile ID:1 DropAddress:0	<b>+ •</b>	Woodmen @ Rockrimmon Profile ID:1 DropAddress:0
Woodmen @ Powers Profile ID:1 DropAddress:0	4.	Woodmen @ Powers Profile ID:1 DropAddress:0
	+ ب	
Import	all street na	mes from: vm2008-kmcc Save Refresh Close

- In the Choice column, click for any item that you want to copy to the receiving database, or click for any item that you do NOT want to copy. You can also click the or at the bottom of each section to apply your choice to all of the items in that section.
- 6 To merge all street names defined in the Street Names Editor, enable the checkbox at the bottom of the window.
- 7 Click Save.

#### Merging Entity Data

When the merge has completed, the window is updated. In the example below, there are no longer any differences between the two databases:

- Merge Data		
My Core localhost		Their Core vm2008-kmcc
Entities	Choice	Entities
	🔶 🖗	
Controller Data	Choice	Controller Data
	🔶 🖡	
Device Channel Assignments	Choice	Device Channel Assignments
	🔶 🖡	
	Import all street nar	mes from: vm2008-kmcc Save Refresh Close

If you did not merge any signals, you are done. Otherwise, continue with the steps below.

- 8 When you copy a signal from one system to another, the polling packet assignments are not copied. After the merge, you must set these in the receiving database before you establish comms to the signal. To set the polling packet assignments after the merge, right-click the signal in the Entity Tree and select **Edit Properties**.
- **9** From the Primary Poll, Secondary Poll, and Tertiary Poll dropdowns, select the polling packets to use when the system sends polls to this controller. The items in these lists are added via the Polling Packet Editor (page 20-50). The Primary Poll field is required. Secondary polling is optional, and is usually used to get volume/occupancy/speed data from the vehicle detectors. Tertiary polling is rarely used.
- 10 Click beside the Communications field and verify or change the communication settings on the Local Edition 1 and/or Local Edition 2 tabs. For details, refer to *Device Communication Configuration* on page 3-44. (As mentioned earlier, the settings on the Centracs tab are not included in the merge.)
- 11 On the Device Communication Configuration window, click OK.
- 12 To save all your changes to the Entity Configuration window, click Apply or OK. (Apply saves your changes and keeps the window open; OK saves your changes and closes the window.)

Merging Entity Data •

Note • To compare the two databases again, click Refresh at any time.

**Note** • The merge function is not concerned with items that are in the receiving database but not in the sending database. Any such items are not shown in the Merge Data window.

**Note** • If two items have the same name and same type, but are not truly the same item, a merge will overwrite the copy in the receiving database. For example, if the two systems have a signal called "Signal 1" but these two signals are configured differently, a merge of that signal will change the copy in the receiving database to be the same as the copy in the sending database.

Merging Log Data

## **Merging Log Data**

You can use the Merge Logs function to synchronize log data (used in reports) between the main Centracs database and a Local Edition database, or between two Local Edition databases. For example, if you collected raw detector data while you were connected to a controller via Local Edition, you can copy this data into the main Centracs database when you go back to the office.

When two logs are synchronized, the merge function compares them line by line to identify any duplicates, and these are ignored during the merge. Only unique entries from the other database are copied to the local database.

**Note** • Do not run the Centracs client and the Local Edition client on the same machine at the same time.

In the procedure that follows, the "receiving" database is the database you will copy data *to*, and the "sending" database is the database you will copy data *from*.

#### To synchronize log data between two databases:

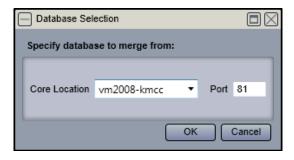
**1** Depending on the type of merge, launch the appropriate client(s):

Receiving Database	Sending Database	Client(s)
Local Edition	Centracs	Launch the Local Edition client for the receiving database (do not launch the Centracs client on the same machine at the same time)
Centracs	Local Edition	Launch the Local Edition client for the sending database, and the Centracs client for the receiving database (on a different machine)
Local Edition	Local Edition	Launch Local Edition clients for both databases (one on each Local Edition machine)
Centracs	Centracs	Launch the Centracs client for the receiving database

- 2 Make sure the entities for which you will merge log data have already been merged to the receiving database. For instructions, refer to *Merging Entity Data* on page 16-1.
- 3 From the receiving system, select **Management** ▶ **Merge Logs...** from the main menu. This option is available in both Centracs and in Local Edition. For example, to copy data from the main Centracs system into a Local Edition database, do the merge from the Local Edition system.

Merging Log Data •

The Database Selection window opens.



4 Specify the sending database, then click **OK**. For details about the Database Selection window, refer to page 16-11.

If a connection is successfully made to the sending database, the Merge Logs window shows a list of the logs that you can synchronize.

Merge Logs		
My Core localhost	-	Their Core vm2008-kmcc
Entities	Choice	Entities
	. ← ♥	Detector Log
	🔶 🗣	Event Log
	- + +	Oasis Functions Log
	🔶 🗣	Oasis Plans Log
	- 🔶	Signal Detector Event Log
		Signal Event Log
	🔶 🖗	
	S	ave Refresh Close

The logs are:

- Raw Detector Data Log Contains the raw vehicle data collected from polls to the signal controllers (used to calculate volume, occupancy, speed, volume-to-capacity ratios, etc.) This log populates the Raw Detector Data report (page 10-31).
- System Events Log Contains details about the signal, detector, comm, and Linkrelated events that have been logged by Centracs and/or Local Edition. This log populates the System Events report (page 10-51).
- Oasis Functions Log Contains a historical list of the functions that have been started for one or more Oasis controllers, along with the time each function started, the source of the command that started the function, and the associated operand. This log populates the Signal Events report (page 10-36).

- Merging Log Data
- Oasis Plans Log Contains a historical list of the coordination plans that have been started for one or more Oasis controllers, along with the time each plan started, the source of the command that started the plan, and the associated offset. This log populates the Signal Events report (page 10-36).
- Signal Detector Events Log Contains a historical list of detector-related faults (such as Max Presence and No Activity faults). This log populates the Signal Detector Events report (page 10-34).
- Signal Events Log Contains a historical list of controller-related events and errors (such as Local Flash Active and Cycle Fault). This log populates the Signal Events report (page 10-36).

Only the logs that contain data are shown on this window. Any logs that are empty are not shown.

5 In the Choice column, click 🕈 for any log that you want to merge with your local log,

or click 🐓 for any log that you do NOT want to merge. You can also click the 年 or 💺 at the bottom of the window to apply your choice to all of the logs.

6 Click Save.

A progress window shows which log is currently being merged (if you selected more than one) and the number of log entries merged so far:

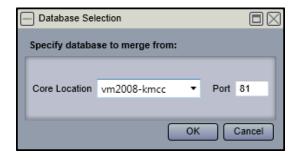
- Merge Logs							
Number of Event	t Log reco	ords merged: 7773					
Number	r of dupli <mark>c</mark> ates	ignored: 0					

As it compares each entry in the two copies of the log, the merge function decides whether that entry is already in the receiving database. If it is not, the "Number of x records merged" counter is incremented by one, and the entry is copied to the receiving database. If the entry is already in both logs, the "Number of x records merged" counter and the "Number of duplicates ignored" counter are both incremented by one, and the entry is skipped.

Database Selection window

#### Database Selection window

When you select the **Merge Logs** or **Merge Data** option from the Management menu in Centracs or Centracs Local Edition, the Database Selection window opens first:



Use this window to specify the database to merge from: if you are logged into Local Edition, this will usually be the central database; if you are logged into the central database, this will usually be a Local Edition database. Enter the location of the Core server to connect to, and the port. For Core Location, you can enter a hostname or IP address. (After you successfully connect to a database, the name or IP is saved in the dropdown list so that it is quickly accessible in the future.)

When you click **OK**, a connection to the specified database is attempted. If it is successful, the Merge Logs or Merge Data window is populated with a list of items that you can merge. For more information about these two screens, refer to *Merging Log Data* on page 16-8 and *Merging Entity Data* on page 16-1.

#### Exchanging Data with 'Local Edition'

Database Selection window

# 17

# **Using DCMS for Data Collection**

The Data Collection Management System (DCMS) module of Centracs collects real-time vehicle detection data from Autoscope cameras and RTMS devices, and allows users to:

- view streaming video and snapshot images from the Autoscope video vehicle detectors (if supported by the device type)
- view the locations of the field devices on a map
- monitor real-time communications between Centracs and the field devices
- generate reports and graphs to analyze the detection data
- compare the data for different devices, different detectors, and/or different dates

**Note** • For devices that support video, in order to show the video feed in Centracs, the VLC Media Player application (version 2.2.4) must be installed on the client machines.

#### Overview of DCMS

## **Overview of DCMS**

For Autoscope devices, Centracs communicates with the ISS (Image Sensing Systems) Network Browser to obtain configuration information about the devices and their detectors; Centracs then polls the Network Browser at regular intervals to retrieve the latest detection data collected by each device.

For RTMS (Remote Traffic Microwave Sensor) devices, Centracs communicates directly with the device.

Several monitoring screens allow you to quickly see the status of your devices in Centracs. In the examples below, the Device Status window shows information for all *devices*, the Detector Log Status window shows information for all *detectors*, and the entity status window shows information for a single device and its associated detectors:

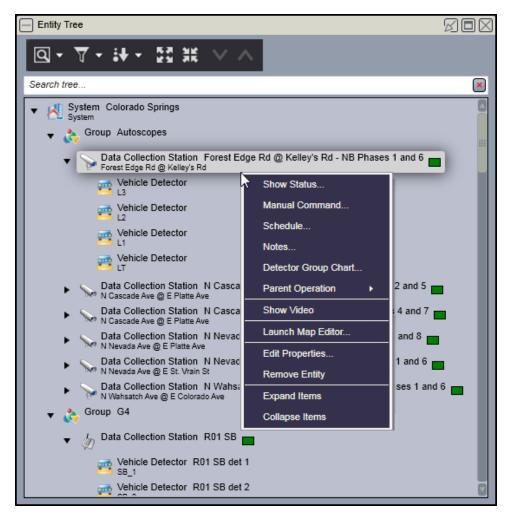
C Devic	e Status		_						_	= 🗆 X	
System	Name			Description	Туре	General	Status	Communications	Alerts	s Alarms 🔺	
Local	Beacon Street @ Filmore Street Ø's 4	& 7	Fillmo	ore Street @ Beacon Street	Se	Detect		100.0 %	0	0	
Local	Centennial Blvd @ Fillmore Street, 172	2.22.22.91	Cente	ennial Blvd. @ Fillmore Street	- Sp	Detect		100.0 %	0	0	
Local	Beacon Street @ Filmore Street Ø's 2	& 5	Fillmo	ore Street @ Beacon Street	<b>Se</b>	Detect		100.0 %	0	0	
Local	Beacon Street @ Filmore Street Ø's 6	& 1	Fillmo	ore Street @ Beacon Street	8	Detect		100.0 %	0	0	
Local	Mesa @ Fontmore, 172.22.22.92		Mesa	Road @ Fontmore Street	- Sp	Detect	C Bea	con Street @ Film	nore Str	eet Ø's 2 &	
Local	Autoscope - Woodmen Rd @ Union B	lvd	FR		<u>.</u>	Detect		oshot Map	Detect	_	
Local	SB Union Blvd @ Woodmen Rd	C Detector Log S	Status				100		2m		
Local	East Colorado Ave @ North Wasatch	Last Timestamp	C	Name			2.6	A	7 2	- T-A	1
Local	NB Union Blvd @ Woodmen Rd	2/27/2018 08:4	5:00	Beacon Street @ Filmore Street @	Ø's 8 &	3 det 148	2.2	/=	, 🗃		
Local	WB Woodmen at Union							-11		-	
Local	Beacon Street @ Filmore Street Ø's 8	9/15/2017 13:3	1:49	3 det 2			20				
-		2/28/2018 14:3	0:00	Beacon Street @ Filmore Street @	Ø's 4 &	7 det 148					
		2/28/2018 14:3	5:00	EB Woodmen Rd @ Union Blvd o	det 134						
		2/28/2018 14:3	0:00	Mesa @ Fontmore, 172.22.22.92	det 111	1					
		2/28/2018 14:3	0:00	Beacon Street @ Filmore Street @	Ø's 2 &	5 det 146	Mode	Time		.ast Updates	~
		2/27/2018 08:4	5:00	Beacon Street @ Filmore Street @	Ø's 8 &	3 det 146	Detec	t Last 14:30 Error: 12s		Status: Snapshot:	2:31:02 P 2:30:19 P
		2/28/2018 14:3	5:00	WB Woodmen at Union det 140						Last Poll Dat	a: 1:27:41
		9/15/2017 13:3	1:49	Academy Blvd. @ Lovatt Street D	Det 3						100
		<					►				
							Close				

Overview of DCMS

Centracs DCMS supports these device types:

- Autoscope Solo Pro II<sup>®</sup>
- Autoscope RackVision<sup>™</sup> Pro
- Autoscope 2020<sup>™</sup>
- Autoscope Solo Terra<sup>™</sup>
- Autoscope RackVision Terra<sup>™</sup>
- Autoscope System-16 Terra<sup>™</sup>
- Autoscope ENCORE<sup>™</sup>
- Autoscope Duo<sup>™</sup>
- RTMS (G4, X3, or SX-300)

The Entity Tree shows a hierarchical view of all your Autoscope and RTMS devices, and their associated detectors. You can right-click a device or detector to see a menu of available actions:



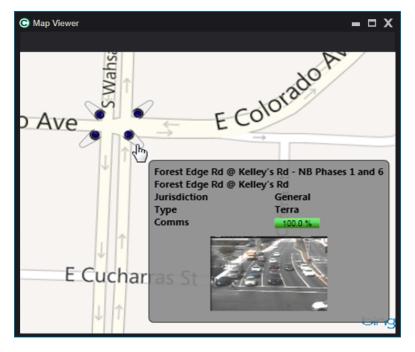
Overview of DCMS

In the example above, the tree is configured to show the current communications status of each device:

Status Icon	Color	Meaning			
Green		Good comms			
	Yellow	Marginal comms			
Blue		Bad comms / no comms			
	Gray	Unknown comm status			

You can configure triggers in Centracs to automatically alert you when there is a communications problem. (Refer to *Using Triggers* on page 4-25.)

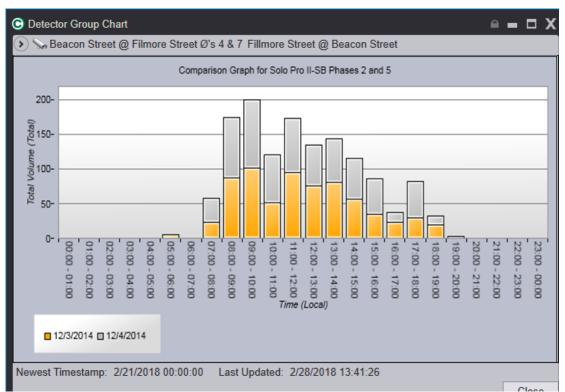
Your devices can also be added to the map view. For Autoscope devices, once they have been added to the map, you can hold the mouse over the entity on the map to see the latest snapshot image or live video feed (if supported by the device type):



Besides the Groups shown in the Entity Tree, you can create other groups of detectors to use for reporting purposes. For example, if all your devices for a particular arterial are in a Group named "Academy Corridor" in the Entity Tree, you could create four reporting groups for "Academy - Northbound", "Academy - Southbound", "Academy - Eastbound", and "Academy - Westbound" in order to create reports for only one direction of travel. Reporting groups can be included in the Entity Tree, or excluded from it.

Overview of DCMS

In addition to the standard Centracs reports, the Detector Group Chart allows you to generate various graphs and data tables (called "worksheets") to organize, display, and compare your detector data:



You can generate line graphs, bar graphs, column graphs, and area graphs. You can also show the data in tabular format.

In most cases, the detector data in Centracs DCMS can be reported and analyzed by device, by detector, by time of day, and/or by vehicle class type.

**Note** • For Autoscopes, instructions on how to configure the ISS Communications Server, how to add Autoscope units to the ISS Communications Server, and how to create/edit/ delete detectors are outside the scope of this manual. Refer to your ISS manuals for this information.

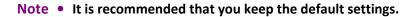
**Note** • In order to collect data from Autoscopes and RTMS devices, the "Centracs Data Collection" service must be running on the server that is communicating with the devices. (This may or may not be the server where Centracs is running, depending on how your Centracs and DCMS systems are configured.) Also, for Autoscope Solo Pro devices only, the "Centracs Autoscope Service" must be running on the server that is communicating with the devices.

Global Autoscope Settings

## **Global Autoscope Settings**

The Autoscope Settings control the behavior of Autoscope detectors in Centracs DCMS.

To open this window, select **File > Settings** from the main menu.



Organization Information       Autoscope Data Collection Settings         Licensing       Miscellaneous settings for Autoscope detectors         SMTP Servers       Autoscope Settings         Autoscope Settings       Data Bin Size (mins)         ECPI Tile Server       Some of this data twice during each bin time. For example if Data Bin Size is 4 minutes, Centracs polls the Autoscope for this data twice during each bin time. For example if Data Bin Size is 4 minutes, Centracs polls every 2 minutes (approximately).         Password Strength       Default Description From a Sync         Confirmation Dialogs       Action Priorities         Preempts       Max Time for Last Detector Log (mins)       30         If no data is received for a detector during this time interval, the detector turns red in the Detector Log Status window.
Addstope Settings       Controls how often volume and occupancy data are collected and logged on the Autoscope. Centracs polls the Autoscope for this data twice during each bin time. For example if Data Bin Size is 4 minutes, Centracs polls every 2 minutes (approximately).         Password Strength       Default Description From a Sync       N/S       E/W         Default Description to be assigned to an Autoscope after performing a Sync operation using the North/South or East/West fields on the device.       Max Time for Last Detector Log (mins)       30         If no data is received for a detector during this time interval, the detector turns red in the Detector Log Status window.       If no data is received for a detector during this time interval, the detector turns red in the Detector Log Status window.
Support Services         Snapshot/Video Size on the Map 130 X 100           Offline Alert Format         Width X Height in pixels.           MMS Settings         Show Video on the Map
MMS Settings       Show Video on the Map
Time UI Refresh Interval (sec)       300         Controls how often the Autoscope Status display is refreshed with the current time from the Autoscope device.         Chart Reload Interval (mins)       2         Controls how often the charts, comparison graphs, and worksheets are refreshed while they are open.         Snapshot Quality       High         Picture quality to request from Autoscopes.         Snapshot Quality (V8)       High         Low         Picture quality to request from Autoscope Solo Pros (version 8 Network Browser).

The fields are:

- Data Bin Size IMPORTANT: If you change this value, all historical data on the camera will be discarded! Specifies how long the Autoscope gathers volume and occupancy data before it logs a total volume value and an average occupancy value, in minutes. These values are then available for Centracs to poll. (Polling is done at twice the rate of the bin size; for example, if the bin size is 4 minutes, Centracs polls the device every 2 minutes.)
- Default Description From a Sync When you add an Autoscope to Centracs, the default Description for the Autoscope in Centracs is composed of the values from the North-South Street and East-West Street fields in the ISS Network Browser. This setting specifies which value will appear first in the Description: the North-South (N/S) value or the East-West (E/W) value.
- Max Time for Last Detector Log The number of minutes after which a detector turns red in the Detector Log Status window if data has not been received from the detector.
- Snapshot/Video Size on the Map Specifies the pixel size of the window shown when you hold the mouse over an Autoscope entity on the map. The first number is the width, the second number is the height.
- Show Video on the Map If this setting is turned on, Autoscopes that support streaming video will show video when you hold the mouse over them on the map; Autoscopes that do not support streaming video will show a snapshot instead. If this setting is turned off, all Autoscopes will show a snapshot.

**Note** • To use this option, the VLC Media Player application must be installed on the client machines. Also, the Video Source must be configured for the devices on the Entity Configuration window (page 17-23).

- Default Status Poll Rate The default rate at which Centracs attempts to communicate with Autoscope devices to make sure the devices are still "alive" and that comms are good, in seconds. You can override this default value for an individual device using the Primary Poll Rate field on the Device Communication Configuration window (refer to page 3-44).
- Default Snapshot Poll Rate The default rate at which Centracs polls Autoscope devices for a current snapshot, in seconds. You can override this default value for an individual device using the Secondary Poll Rate field on the Device Communication Configuration window (refer to page 3-44).
- Status Snapshot Priority Poll Interval When the Autoscope Status display window is open, you may want Centracs to poll for a current snapshot more frequently. Use this field to specify a faster snapshot polling rate than the Default Snapshot Poll Rate, in seconds. This value overrides the Default Snapshot Poll Rate *only* when the Autoscope Status display window is open. To *always* use the Default Snapshot Poll Rate, enter 0 for the Status Snapshot Priority Poll Interval.

Global Autoscope Settings

- **Time UI Refresh Interval** Specifies how often the Autoscope Status display window will be refreshed with the current time from the device, in seconds.
- Chart Reload Interval When the Detector Group Chart window is open, this field specifies how often Centracs refreshes the data, in minutes.
- Snapshot Quality (for device types other than Solo Pro II and 2020) Specifies the level of quality, from 1 to 10, for the snapshots that are shown in the Map Viewer and Autoscope Status display. For higher quality snapshots, move the slider to the left; for lower quality snapshots, move the slider to the slider to the right.
- Snapshot Quality (V8) (for Solo Pro II and 2020 devices) Specifies the level of quality, from 1 to 6, for the snapshots that are shown in the Map Viewer and Autoscope Status display. For higher quality snapshots, move the slider to the left; for lower quality snapshots, move the slider to the left; for lower quality snapshots, move the slider to the right.

## **Configuring RTMS Entities**

RTMS entities are added much like the non-DCMS entities (Signals, Groups, etc.), as shown below.

### To add a new RTMS entity:

- 1 Determine the parent (i.e., a System, Section, Subsection, or Group) for the new RTMS device to be added.
- 2 Right-click the parent entity in the Entity Tree.
- 3 From the pop-up menu, select Add Entity ▶ RTMS. The Entity Configuration window opens.

<ul> <li>Entity Configura</li> </ul>	tion
Name/Identifier	1
Description	
SubType	G4
Communications	
Mode	Online 💌
Primary Street	
Secondary Street	
Detectors	0 System Detectors Configured
Coordinates	
Jurisdiction	General
Notes	0 notes
	OK Cancel Apply

**Note** • Because the fields on the Entity Configuration window are configurable, your screen may look different than the sample shown here. For details, refer to *Using the Type and Field Definitions Window* on page 19-5.

- 4 Enter a unique name for the device, and optionally, a description. (You can enter any text or numbers for the Name/Identifier and Description fields, and you can change them at any time.)
- **5** From the SubType dropdown, select the model: G4 or X3. (For SX-300 sensors, use the "G4" SubType.)

- Configuring RTMS Entities
  - 6 Click I to the right of the Communications field. The Device Communication Configuration window opens.

E	Device Communicatio	n Configuration	
	Comm Channel	TCP on Device Manager 1	
	Destination IP	172.20.97.201	
	Destination Port	2000	
	RTMS Id	1	
	Device Poll Rate (sec)	1	Use Default
			OK Cancel

Use this window to tell Centracs how to communicate with this device. For details about this window, refer to page 3-44.

- 7 In the Mode dropdown, select Online (for full comms), Offline (for no comms), or Standby (allows Get Time and Set Time commands to the device, but Centracs does not poll the device).
- 8 Optionally, to select the cross-streets for this device's location, click to the right of the Primary Street and Secondary Street fields.

The Street Names Editor opens.

E	Street Names Editor	
	Add or filter street	+ <b>/</b> ×
	Casa de Campo Rd Chapel Ln E Pikes Peak Ave Garden of the Gods Rd Lambert Rd McLaughlin Rd Meridian Ranch Rd Meridian Rd N Academy Blvd N Union Rockrimmon Blvd S Academy Blvd S Powers Blvd W Pikes Peak Ave Woodmen Rd	
		OK Cancel

If the street for this device is not in the list, you can add it. For details about how to search the list of streets and add new streets, refer to *Using the Street Names Editor* on page 20-88.

Configuring RTMS Entities

Once you select the cross-streets, the street names are automatically copied to the Description field on the Entity Configuration window (unless you already entered a Description).

To go back to the Entity Configuration window, click **OK**.

**9** To load the detectors from the device, click to the right of the Detectors field. The Detector Configuration window opens.

Ē	-) 0	etector Configuratio	on for G4 @	) Cimarron/31st					$\boxtimes$
(	Ref	trieve Detectors							
3	#	System Detector	Length	Stop Bar Dist	Name	Lane Type	Description		
								Save Close	]

#### **10** Click **Retrieve Detectors**.

Centracs polls the device for information about the device's detectors. When finished, the retrieved information is shown:

6	_ De	tector Configuration for G4 @ Cimarron/31st									
	Retri	eve Detectors									
	#	System Detector	Length	Stop Bar Dist	Name	Lane Type	Description				
	1	2 det 1			2 det 1	Unknown					
	2	2 det 2			2 det 2	Unknown					
	3	2 det 3			2 det 3	Unknown					
	4	2 det 4			2 det 4	Unknown					
	5	2 det 5			2 det 5	Unknown					
	6	2 det 6			2 det 6	Unknown					
	7	2 det 7			2 det 7	Unknown					
	8	2 det 8			2 det 8	Unknown					
	Save Close										

- 11 Several of these detector fields can be modified. For details, refer to Using the Detector Configuration Window (RTMS) on page 17-13. Click Save and then Close to return to the Entity Configuration window.
- 12 Optionally, to manually enter the latitude and longitude coordinates for the geographical location of this device, click into the right of the Coordinates field. Or, you can simply drag and drop it onto the map (for more details, refer to step 16). For details about how to use the Coordinates window, refer to page 3-71.

• Configuring RTMS Entities

- **13** Select the Jurisdiction to which the new device will belong. For more information, refer to *Defining Jurisdictions* on page 20-12.
- 14 To save your entries, click **Apply** or **OK**. (**Apply** saves your changes and keeps the window open so that you can add notes for this device; **OK** saves your changes and closes the window.)

<ul> <li>Entity Configura</li> </ul>	tion	$\Box \boxtimes$
Name/Identifier	G4 @ Cimarron/31st	
Description	RTMS TCP	
SubType	G4	•
Communications	TCP@172.20.97.201:2000	
Mode	Online	•
Primary Street	Hwy 24/Cimarron	
Secondary Street	31st Street	
Detectors	8 System Detectors Configured	
Coordinates	38.8512167403621, -104.872827702652	
Jurisdiction	General	•
Notes	0 notes	
	CI	ose

The new RTMS is added to the Entity Tree.

- **15** Optionally, to add notes for this entity, click to the right of the Notes field. For more information, refer to *Adding Notes to Entities* on page **3-14**.
- 16 If you did not manually enter the latitude/longitude coordinates for the device (described above), then from the main menu, select View ▶ Map or View ▶ Preset Map and zoom in on the location for the device.

Drag and drop the device from the Entity Tree onto the appropriate position on the map.

The Map Editor opens so that you can define and configure the map visuals for this device. For details about how to use the Map Editor, refer to *Editing the Map View* on **page 5-18**.

**To edit the configuration for an RTMS entity:** Refer to *Editing Entity Properties* on page 3-9. and *Using the Detector Configuration Window (RTMS)* on page 17-13

Using the Detector Configuration Window (RTMS) •

## Using the Detector Configuration Window (RTMS)

### **Changing RTMS Detector Properties**

The Detector Configuration window shows a list of the detectors that are configured for a device. You can use this window to change the Length, Distance From Stop Bar, Name, Lane Type, and Description of the detectors. To open this window, go to the Entity Configuration window for the device, then click the solution to the right of the Detectors field.

$\Box$	Detector Configuration for G4 @ Cimarron/31st									
R	etrie	eve Detectors								
#	ŧ	System Detector	Length	Stop Bar Dist	Name	Lane Type	Description			
	L	2 det 1			2 det 1	Unknown				
2	2	2 det 2			2 det 2	Unknown				
3	3	2 det 3			2 det 3	Unknown				
4	ł	2 det 4			2 det 4	Unknown				
5	5	2 det 5			2 det 5	Unknown				
6	;	2 det 6			2 det 6	Unknown				
7	7	2 det 7			2 det 7	Unknown				
8	3	2 det 8			2 det 8	Unknown				
	Save Close									

# **Note** • Changing the Name and Description on this window also changes these values in the Entity Tree.

To change a value, double-click in the field. For Length and Stop Bar Distance, one of the following units must be included: feet or ft, miles or mi, meters or m, kilometers or km. For example, "6 ft" or "1.8 m".

- Length The length of the detector or detection zone.
- **Stop Bar Dist.** The distance of the detector from the stop bar at the intersection.
- Lane Type Select the lane type (Left, Right, Through, U-Turn, etc.) from the dropdown list. Centracs uses this value on the Peak Hour Volume report (page 17-62). When a detector is added to Centracs for the first time, the Lane Type is set to "Unknown".

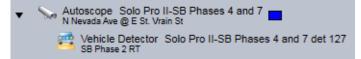
**Note** • Centracs uses the Length and Stop Bar Distance values for calculations in the MOE reports, VOS reports, Links, Traffic Responsive, and Centracs Adaptive. If you do not have any of these modules installed, then the Length and Distance fields are informational only.

Configuring & Deleting Autoscope Entities

## **Configuring & Deleting Autoscope Entities**

#### Notes:

When an Autoscope is added to Centracs, the value from the "Approach and Phases" field in the ISS Network Browser is used as the Name, and the values from the "East-West Street" and "North-South Street" fields are used as the Description. (The "Default Description From a Sync" field on the Autoscope Settings window specifies which street appears first in the Description: East-West or North-South.) For the associated detectors, the value from the "Detector Title" in the Network Browser is used as the Description; the Name is automatically generated by Centracs using the name of the Autoscope plus the detector number from the Network Browser. For example:



Once a device has been added to Centracs, any changes to these fields in the Network Browser/detector inventory file will not be propagated to Centracs. You must change them in Centracs manually.

### To add an Autoscope entity to Centracs:

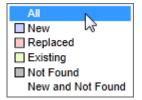
**Note** • Before an Autoscope can be added to Centracs, it must be configured on the ISS Network Browser. After that has been done, do the steps below to add the scope to Centracs as a new entity.

- 1 If needed, add a parent Group for the new entity to the Entity Tree. An Autoscope device must be the child of a Group or a System. For instructions, refer to *Entity Configuration Groups* on page 3-23.
- 2 From the main menu, select **Configuration > Detection Devices...**

The Detection Device Configuration window shows a list of any Autoscope devices that have already been added to Centracs (RTMS devices are not shown in this window):

Detection Device Configuration									
Sync	Sync         Verify         Add Selected         Replace         Select All         All         Image: The select All								
N	ame	Description	Туре	IP	Serial #				
	RVD - 002 I-10 WB at Louisiana Ave.		🆢 ICX 360	0.0.0.0	X31090561320861				
	RVD - 012 US-190 WB at Erwinville		🆢 ICX 360	0.0.0.0	X310905613208610				
D N	Cascade Ave @ E Platte Ave - EB Phases 3 and 8	N Cascade Ave @ E Platte Ave	💊 Solo Pro II	192.168.6.3	080301FFC28A6A0C				
D N	Cascade Ave @ E Platte Ave - NB Phases 1 and 6	N Cascade Ave @ E Platte Ave	💊 Solo Pro II	192.168.6.1	080301FF51836A0C				
D N	Cascade Ave @ E Platte Ave - SB Phases 2 and 5	N Cascade Ave @ E Platte Ave	💊 Solo Pro II	192.168.6.2	080301FF75866A0C				
D N	Cascade Ave @ E Platte Ave - WB Phases 4 and 7	N Cascade Ave @ E Platte Ave	💊 Solo Pro II	192.168.6.4	080301FF7B8E6A0C				
D N	Nevada Ave @ E St. Vrain St - NB Phases 1 and 6	N Nevada Ave @ E St. Vrain St	💊 Solo Pro II	192.168.3.2	040468FF1EC76C0D				
D N	Wahsatch Ave @ E Colorado Ave - EB Phases 3 and 8	N Wahsatch Ave @ E Colorado Ave	🦕 Terra	172.17.1.19	0C0301FFBB0B0823				
D N	Wahsatch Ave @ E Colorado Ave - NB Phases 1 and 6	N Wahsatch Ave @ E Colorado Ave	🦕 Terra	172.17.1.17	0C0105FF8A35311D				
	Wahsatch Ave @ E Colorado Ave - SB Phases 2 and 5	N Wahsatch Ave @ E Colorado Ave	💊 Terra	172.17.1.18	0C0301FF9F0B0823				
					Clos	е			

In the upper right corner of the window, a dropdown list allows you to specify the types of devices you want to see in the window:



- **New** shows only the devices that have not been added to Centracs yet (i.e., devices that are in the Network Browser/detector inventory file but not in Centracs).
- **Replaced** shows only the devices that have been added to Centracs as replacements for existing devices, since the last Sync.
- Existing shows only the devices that have already been added to Centracs.
- Not Found shows only the devices that have previously been added to Centracs but are no longer found on the ISS Network Browser or in the detector inventory file.
- New and Not Found shows all the devices that are either in Centracs but not the Network Browser/detector inventory file, or in the Network Browser/detector inventory file but not in Centracs.
- 3 Click Sync.

Configuring & Deleting Autoscope Entities

Centracs queries the Network Browser for its list of defined Autoscopes (this may take several minutes), then displays the results:

$\square$	Detection Device Configuration									
	Sync Verify Add Selected Replace Select All									
		Name	Description	Туре	IP	Serial #				
		Solo Pro II-SB Phases 4 and 7	N Nevada Ave @ E St. Vrain St	💊 Solo Pro II	192.168.3.3	040504FFCF7CA216				
		Garden Hill Dr. & Fontanero, Ø's 8 & 3	Fontanero Street @ Garden Hill Dr.			080301FF7B8E6A0C				
		30th & Fontanero, Ø's 6 & 1	Fontanero Street @ 30th Street	💊 Solo Pro II	192.168.6.1	080301FF51836A0C				
		Garden Hill Dr. & Fontanero, Ø's 2 & 5	Fontanero Street @ Garden Hill Dr.	💊 Solo Pro II		080301FF75866A0C				
		Garden Hill Dr. & Fontanero, Ø's 6 & 1	Fontanero Street @ Garden Hill Dr.	💊 Solo Pro II	192.168.6.3	080301FFC28A6A0C				
		Fillmore & N Grand Vista, Ø 4	Fillmore Street @ North Grand Vista Circle	🦕 Terra	172.17.2.8	0A0301FF01380B23				
							(	Close		

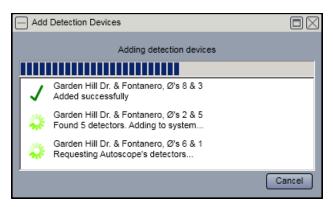
Optionally, you can select New from the dropdown list to show only the devices that have not been added to Centracs yet (i.e., the blue rows).

- 4 Click the checkbox for each device you want to add.
- 5 Click Add Selected...

- Add Detect	ion Devices	
	Select the parent entity for the new devices	
Parent Entity		
	Apply C	ancel

- 6 On the Add Detection Devices window, click to the right of the Parent Entity field. The Entity Selection window opens.
- 7 Select the Group or System to which you want to add the device(s) and click **OK**. For details, refer to *Using the Entity Selection Window* on page 3-18.

- Configuring & Deleting Autoscope Entities •
- 8 Click **Apply**. You can monitor the progress as Centracs adds the device(s) and detectors to the system:



**9** When the progress window shows "Added successfully" for all devices, this means the devices and their associated detectors have been added to the Entity Tree. Click **Close**.

If you want to see the newly added devices in the Detection Device Configuration window, change the dropdown selection from "New" to "Existing" or "All". The newly added devices are now shown in green instead of blue.

- **10** Optionally, you can change the names and descriptions of the devices and detectors. For details, refer to *Changing the Properties for Autoscope Entities* on page 17-23.
- 11 Optionally, you can add the new devices to the map. Select View ▶ Map or View ▶ Preset Map and zoom in on the location for the device. Drag and drop the device from the Entity Tree onto the appropriate position on the map. The Map Editor opens so that you can define and configure the map visuals for this device. For details about how to use the Map Editor, refer to Editing the Map View on page 5-18.

**Note** • For devices that support video, in order to show the video feed in Centracs, the VLC Media Player application must be installed on the client machines. Also, the Video Source must be configured for the devices on the Entity Configuration window (page 17-23).

• Configuring & Deleting Autoscope Entities

### To import detector changes into Centracs:

**Note** • Use this procedure if detector changes have been made in the Network Browser, for example, the addition of a new lane or detector, or the removal of a detector. Make sure the Autoscope reboot has completed before you import the detector changes into Centracs.

**1** From the main menu, select **Configuration ▶ Detection Devices...** 

S	vnc Verify Add Selected Replace Sele	ct All			All
	Name	Description	Туре	IP	Serial #
1	LF RVD - 002 I-10 WB at Louisiana Ave.		約 ICX 360	0.0.0.0	X31090561320861
1	LF RVD - 003 I-10 EB at Breaux Bridge		約 ICX 360	0.0.0.0	X310905613208613
1	LF RVD - 012 US-190 WB at Erwinville		約 ICX 360	0.0.0.0	X310905613208610
1	N Cascade Ave @ E Platte Ave - EB Phases 3 and 8	N Cascade Ave @ E Platte Ave	💊 Solo Pro II	192.168.6.3	080301FFC28A6A0C
1	N Cascade Ave @ E Platte Ave - NB Phases 1 and 6	N Cascade Ave @ E Platte Ave	💊 Solo Pro II	192.168.6.1	080301FF51836A0C
1	N Cascade Ave @ E Platte Ave - SB Phases 2 and 5	N Cascade Ave @ E Platte Ave	💊 Solo Pro II	192.168.6.2	080301FF75866A0C
1	N Cascade Ave @ E Platte Ave - WB Phases 4 and 7	N Cascade Ave @ E Platte Ave	💊 Solo Pro II	192.168.6.4	080301FF7B8E6A0C
	N Nevada Ave @ E St. Vrain St - NB Phases 1 and 6 KELLY	N Nevada Ave @ E St. Vrain St KELLY	💊 Solo Pro II	192.168.3.2	040468FF1EC76C0D
1	N Wahsatch Ave @ E Colorado Ave - EB Phases 3 and 8	N Wahsatch Ave @ E Colorado Ave	🦕 Terra	172.17.1.19	0C0301FFBB0B0823
1	N Wahsatch Ave @ E Colorado Ave - NB Phases 1 and 6	N Wahsatch Ave @ E Colorado Ave	💊 Terra	172.17.1.17	0C0105FF8A35311D
1	N Wahsatch Ave @ E Colorado Ave - SB Phases 2 and 5	N Wahsatch Ave @ E Colorado Ave	🦕 Terra	172.17.1.18	0C0301FF9F0B0823
7	N Wahsatch Ave @ E Colorado Ave - WB Phases 4 and 7	N Wahsatch Ave @ E Colorado Ave	Sa Terra	172.17.1.16	0C0547FF5569621D

- 2 Click the checkbox for each device you want to verify against the Network Browser/ detector inventory file.
- 3 Click Verify.

Detection [	Device (	Configuration		
	- 002 3	Verifying detection devices		
	- 003	LF RVD - 003 I-10 EB at Breaux Bridge No changes were found	208613	
	- 012	V Wahsatch Ave @ E Colorado Ave - WB Phases 4 and 7 No changes were found	208610	
	ade Av	V Wahsatch Ave @ E Colorado Ave - NB Phases 1 and 6 No changes were found	8A6A0C	
	ade Av	Update Detectors N Wahsatch Ave @ E Colorado Ave - EB Phases 3 and 8 Changes were found: 0 added, 0 updated, 1 deleted	III 336A0C	
	ade Av	V Cascade Ave @ E Platte Ave - SB Phases 2 and 5 No changes were found	366A0C	
	ade Av	V Cascade Ave @ E Platte Ave - NB Phases 1 and 6 No changes were found	BE6A0C	
		N Cascade Ave @ E Platte Ave - EB Phases 3 and 8 Checking detectors	C76C0D 080823	
	satch /	N Cascade Ave @ E Platte Ave - WB Phases 4 and 7 Checking detectors	35311D	
	satch A satch A	ve @ E Colorado Ave - Sp Phases 2 and 3 N Wansatch Ave @ E Colorado Ave Terra Cancel 0C0301FF ve @ E Colorado Ave - WB Phases 4 and 7 N Wahsatch Ave @ E Colorado Ave Sterra 1/21/210 0C0547FF	9F0B0823 5569621D	

A progress window shows the results of each verification. In this example, Centracs found that a detector was deleted for one of the devices.

4 If any detector changes, additions, or deletions were found, you can click Update Detectors to apply these changes to Centracs. The Detector Configuration window opens. For details about this window, refer to Using the Detector Configuration Window (Autoscope) on page 17-25.

**Note** • If you see "Error requesting detection device information" in the results, either there was a comm problem or Centracs was unable to find the device in the Network Browser/detector inventory file.

### To replace an existing device with a new device:

**Note** • Use this procedure to update Centracs if you have replaced existing hardware with new hardware. In most cases, Centracs detects the new hardware and, if the channel and IP address are the same as the old hardware, Centracs does the replacement for you. But in some circumstances (for example, if the channel is different, or if the device type changed, such as replacing a Solo Pro II with a Terra camera), you must do the replacement manually, as described below.

1 From the main menu, select Configuration > Detection Devices...

The Detection Device Configuration window shows a list of the Autoscope devices currently defined in Centracs (RTMS devices are not shown in this window):

_	tection Device Configuration	ect All			All -
	Name	Description	Туре	IP	Serial #
	LF RVD - 002 I-10 WB at Louisiana Ave.		🆢 ICX 360	0.0.0.0	X31090561320861
	LF RVD - 012 US-190 WB at Erwinville		🧑 ICX 360	0.0.0.0	X310905613208610
	N Cascade Ave @ E Platte Ave - EB Phases 3 and 8	N Cascade Ave @ E Platte Ave	💊 Solo Pro II	192.168.6.3	080301FFC28A6A0C
	N Cascade Ave @ E Platte Ave - NB Phases 1 and 6	N Cascade Ave @ E Platte Ave	💊 Solo Pro II	192.168.6.1	080301FF51836A0C
	N Cascade Ave @ E Platte Ave - SB Phases 2 and 5	N Cascade Ave @ E Platte Ave	💊 Solo Pro II	192.168.6.2	080301FF75866A0C
	N Cascade Ave @ E Platte Ave - WB Phases 4 and 7	N Cascade Ave @ E Platte Ave	💊 Solo Pro II	192.168.6.4	080301FF7B8E6A0C
	N Nevada Ave @ E St. Vrain St - NB Phases 1 and 6	N Nevada Ave @ E St. Vrain St	💊 Solo Pro II	192.168.3.2	040468FF1EC76C0D
	N Wahsatch Ave @ E Colorado Ave - EB Phases 3 and 8	N Wahsatch Ave @ E Colorado Ave	🦕 Terra	172.17.1.19	0C0301FFBB0B0823
	N Wahsatch Ave @ E Colorado Ave - NB Phases 1 and 6	N Wahsatch Ave @ E Colorado Ave	🦕 Terra	172.17.1.17	0C0105FF8A35311D
	N Wahsatch Ave @ E Colorado Ave - SB Phases 2 and 5	N Wahsatch Ave @ E Colorado Ave	💊 Terra	172.17.1.18	0C0301FF9F0B0823
					Close

2 Click Sync. Centracs queries the Network Browser for its list of defined Autoscopes.

Configuring & Deleting Autoscope Entities

**3** When the Sync completes, click the checkboxes for both the new device (blue) you want to add and the existing device (yellow) you want to replace:

S	ync Verify Add Selected Replace Se	lect All			All	
	Name	Description	Туре	IP	Serial #	
V	BR RVD - 001 I-12 at Airline EB		🧑 ICX 360	0.0.0.0	X310905613208617	1
V	BR RVD - 002 I-12 at Airline EB		約 ICX 360	0.0.0.0	X310905613208614	-
	BR RVD - 003 I-12 at Drusilla WB		約 ICX 360	0.0.0.0	X310905613208616	
	BR RVD - 004 I-12 at Drusilla EB		約 ICX 360	0.0.0.0	X310905613208615	
	BR RVD - 005 I-12 at Jefferson WB		約 ICX 360	0.0.0.0	X310905613208618	
	BR RVD - 006 I-12 at Jefferson EB		約 ICX 360	0.0.0.0	X310905613208619	1
	BR RVD - 007 I-12 at Essen WB		約 ICX 360	0.0.0.0	X310905613208620	1
	BR RVD - 008 I-12 at Essen EB		An ICX 360	0.0.0.0	X310905613208621	l

#### 4 Click Replace.

Detection Device Configuration					$\Box \boxtimes$
					T
New	ition	Old			
Data Collection Station BR RVD - 001 I-12 at Airline EB		Data Collection Statio	on BR RVD	- 002 I-12 at Airline EB	
BR RVD - 005 I-12 at Jefferson WB	Swap	/j ICX 360	0.0.0.0	X31090561320861	3
	Replace				
	Cancel				
					Close

**5** Confirm that the correct devices are flagged as "New" and "Old", then click **Replace** again.

**Note** • If you are replacing an *existing* device with another *existing* device, Centracs may not correctly guess which is the "Old" device to be replaced. In this case, click Swap to reverse the two devices.

6 The Detector Configuration window opens, where you must select the detectors for the new device. For details about this window, refer to Using the Detector Configuration Window (Autoscope) on page 17-25. Click OK.

Configuring & Deleting Autoscope Entities •

	De	etection Device Configuration					
	S	vnc Verify Add Selected Replace Se	elect All			All	•
		Name	Description	Туре	IP	Serial #	
[	-	BR RVD - 002 I-12 at Airline EB		約 ICX 360	0.0.0.0	X310905613208617	
[		BR RVD - 003 I-12 at Drusilla WB		🧑 ICX 360	0.0.0.0	X310905613208616	
[		BR RVD - 004 I-12 at Drusilla EB		🧑 ICX 360	0.0.0.0	X310905613208615	
		BR RVD - 005 I-12 at Jefferson WB		🧑 ICX 360	0.0.0.0	X310905613208618	
[		BR RVD - 006 I-12 at Jefferson EB		🧑 ICX 360	0.0.0.0	X310905613208619	
[		BR RVD - 007 I-12 at Essen WB		🧑 ICX 360	0.0.0.0	X310905613208620	
[		BR RVD - 008 I-12 at Essen EB		🧑 ICX 360	0.0.0.0	X310905613208621	
		BR RVD - 009 I-12 E of Split WB		An ICX 360	0.0.0.0	X310905613208622	
						CI	ose

The pink row shows that the replacement was completed successfully:

**Note** • After you close this window or click Sync, the device is no longer shown in pink.

7 Click Close.

To delete a device from Centracs:

From the Entity Tree, right-click the Autoscope entity and select **Remove Entity**.

#### To delete a detector from Centracs:

- 1 Delete the detector from the Autoscope Network Browser/detector inventory file.
- 2 From the main menu in Centracs, select **Configuration > Detection Devices...**

S	vnc Verify Add Selected Replace Sele	ct All			All
	Name	Description	Туре	IP	Serial #
-	LF RVD - 002 I-10 WB at Louisiana Ave.		約 ICX 360	0.0.0.0	X31090561320861
<	LF RVD - 003 I-10 EB at Breaux Bridge		約 ICX 360	0.0.0.0	X310905613208613
1	LF RVD - 012 US-190 WB at Erwinville		約 ICX 360	0.0.0.0	X310905613208610
1	N Cascade Ave @ E Platte Ave - EB Phases 3 and 8	N Cascade Ave @ E Platte Ave	💊 Solo Pro II	192.168.6.3	080301FFC28A6A0C
1	N Cascade Ave @ E Platte Ave - NB Phases 1 and 6	N Cascade Ave @ E Platte Ave	💊 Solo Pro II	192.168.6.1	080301FF51836A0C
1	N Cascade Ave @ E Platte Ave - SB Phases 2 and 5	N Cascade Ave @ E Platte Ave	💊 Solo Pro II	192.168.6.2	080301FF75866A0C
<	N Cascade Ave @ E Platte Ave - WB Phases 4 and 7	N Cascade Ave @ E Platte Ave	💊 Solo Pro II	192.168.6.4	080301FF7B8E6A0C
	N Nevada Ave @ E St. Vrain St - NB Phases 1 and 6 KELLY	N Nevada Ave @ E St. Vrain St KELLY	💊 Solo Pro II	192.168.3.2	040468FF1EC76C0D
<	N Wahsatch Ave @ E Colorado Ave - EB Phases 3 and 8	N Wahsatch Ave @ E Colorado Ave	🦕 Terra	172.17.1.19	0C0301FFBB0B0823
1	N Wahsatch Ave @ E Colorado Ave - NB Phases 1 and 6	N Wahsatch Ave @ E Colorado Ave	💊 Terra	172.17.1.17	0C0105FF8A35311D
1	N Wahsatch Ave @ E Colorado Ave - SB Phases 2 and 5	N Wahsatch Ave @ E Colorado Ave	💊 Terra	172.17.1.18	0C0301FF9F0B0823
	N Wahsatch Ave @ E Colorado Ave - WB Phases 4 and 7	N Wahsatch Ave @ E Colorado Ave	Sa Terra	172.17.1.16	0C0547FF5569621D

3 Click the checkbox for each device you want to verify against the Network Browser/ detector inventory file.

- Configuring & Deleting Autoscope Entities
  - 4 Click Verify.

Detection Device Configuration	_	
Name Verifying detection devices		
LF RVD - 003 LF RVD - 003 L-10 EB at Breaux Bridge No changes were found	208613	
N Wahsatch Ave @ E Colorado Ave - WB Phases 4 and 7 No changes were found	208610	
N Cascade Av 🧹 N Wahsatch Ave @ E Colorado Ave - NB Phases 1 and 6 No changes were found	BA6A0C	
N Cascade Av Update Detectors N Wahsatch Ave @ E Colorado Ave - EB Phases 3 and 8 Changes were found: 0 added, 0 updated, 1 deleted	III 836A0C	
N Cascade A N Cascade Ave @ E Platte Ave - SB Phases 2 and 5 No changes were found	366A0C	
N Cascade Ave @ E Platte Ave - NB Phases 1 and 6 No changes were found	BE6A0C	
N Nevada A N Cascade Ave @ E Platte Ave - EB Phases 3 and 8 Checking detectors	C76C0D 0B0823	
N Wahcatch N Cascade Ave @ E Platte Ave - WB Phases 4 and 7 Checking detectors	35311D	
N Wahsatch Ave @ E Colorado Ave - So Phases 2 and 7 N Wahsatch Ave @ E Colorado Ave Terra Cancel 1/21/110 000547	FF9F0B0823 FF5569621D	

A progress window shows the results of each verification. In this example, Centracs found that a detector was deleted for one of the devices.

- 5 Click Update Detectors to apply the change(s) to Centracs. The Detector Configuration window opens. (For details about this window, refer to Using the Detector Configuration Window (Autoscope) on page 17-25.)
- **6** On the Detector Configuration window, click **Apply** or **OK**. This deletes the detector from Centracs.
- 7 In the Entity Tree, right-click the Autoscope and select **Edit Properties**. The Entity Configuration window opens.
- 8 Set the Mode to Offline, then click **Apply**.
- 9 In the Autoscope Network Browser, stop polling and re-learn the poll list.
- **10** On the Entity Configuration window, set the Autoscope back to Online and click **Apply**. This updates the poll list.

## Changing the Properties for Autoscope Entities

After you have added the Autoscope devices to the Entity Tree, you can add more information, as described below.

#### To change the properties for an Autoscope entity:

1 From the Entity Tree, right-click an Autoscope device and select **Edit Properties**. The Entity Configuration window opens.

<ul> <li>Entity Configurati</li> </ul>	on	
Name/Identifier	N Wahsatch Ave @ E Colorado Ave - W	B Ph
Description	N Wahsatch Ave @ E Colorado Ave	
Туре	≽ Terra	-
Communications	IP Channel @ 172.17.1.16:54321	
Mode	Online	•
Serial Number	0C0547FF5569621D	
Detectors	5 System Detectors Configured	
Coordinates		
Direction		•
Jurisdiction	General	•
Notes	0 notes	
√ideo Source	Internal	•
	Cic	ose

**Note** • Because the fields on the Entity Configuration window are configurable, your screen may look different than the sample shown here. For details, refer to *Using the Type and Field Definitions Window* on page 19-5.

- 2 Optionally, change the name, description, phase direction, and/or jurisdiction for this device. For information about jurisdictions, refer to *Defining Jurisdictions* on page 20-12.
- 3 In the Mode dropdown, select Online (for full comms), Offline (for no comms), or Standby (allows Get Time, Set Time, and Show Video commands to an Autoscope device, but Centracs does not poll the device). If you have an Autoscope device that has been taken offline, it is recommended that you set this field to Offline so that Centracs does not try to communicate with it. In Offline mode, the device is removed from the polling list; in Online mode, the device is added back to the polling list.
- 4 For information about the Detectors field, refer to *Using the Detector Configuration Window (Autoscope)* on page 17-25.
- 5 To manually enter the latitude and longitude coordinates for the geographical location of this device, click into the right of the Coordinates field. For details on how to use the Coordinates window, refer to Setting Entity Coordinates on page 3-71. (Or you can simply drag and drop the entity onto the map. To do so, select View ▶ Map or View ▶ Preset Map and zoom in on the location for the device. Drag and drop the

• Changing the Properties for Autoscope Entities

entity from the Entity Tree onto the appropriate position on the map. The Map Editor opens so that you can define and configure the map visuals for this device. For details about how to use the Map Editor, refer to *Editing the Map View* on page 5-18.)

- 6 To add notes for this entity, click to the right of the Notes field. Refer to *Adding Notes to Entities* on page 3-14.
- 7 For devices that support video, select a Video Source:
  - Internal Available only for Solo Terra, Duo, and Encore devices. In most cases, you should set all of these device types to Internal.
  - External Available for Solo Pro, Terra, Duo, and Encore devices. If you select External, another field appears for you to enter the Video IP Address. For example, this allows you to associate a Solo Pro device with a video stream from a video encoder, such as rtsp://172.17.1.16/video.

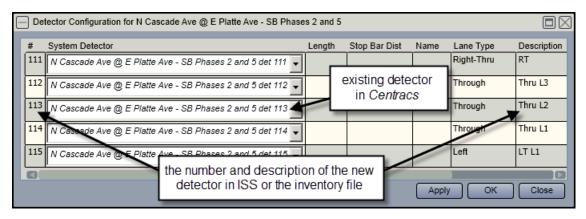
If the Video Source is set to None, the Show Video command will not be available in Centracs for this device.

8 To save your entries, click **Apply** or **OK**. (**Apply** saves your changes and keeps the window open; **OK** saves your changes and closes the window.)

## Using the Detector Configuration Window (Autoscope)

Replacing an Old Device with a New Device

For the full procedure on how to replace a device, refer to **Configuring & Deleting Autoscope Entities on page 17-14**. When you get to the Detector Configuration window, you see a list of the detectors that are configured for the new device in the ISS Network Browser:



Centracs attempts to map each of these new detectors to an existing detector for the old device in Centracs (using the detector numbers). In the example above, both the old device and the new device have five detectors that are numbered 111 through 115, so Centracs was able to match them up automatically. If Centracs is not able to match them, the System Detector dropdown is blank. In this case, you must select the old detector that is being replaced.

If the new device has more detectors than the old device, select the "New" option in the dropdown. For example, suppose the new device shown above had six detectors. In that case, there would be a sixth row in the table, and the dropdown would be blank. You would select "New" for the sixth detector.

Ε	Det	ector Configuration for N Cascade Ave @ E Platte Ave - SB Phase	es 2 and 5				
Г	#	System Detector	Length	Stop Bar Dist	Name	Lane Type	Description
	111	N Cascade Ave @ E Platte Ave - SB Phases 2 and 5 det 111				Right-Thru	RT
	112	N Cascade Ave @ E Platte Ave - SB Phases 2 and 5 det 112				Through	Thru L3
	113	N Cascade Ave @ E Platte Ave - SB Phases 2 and 5 det 113				Through	Thru L2
	114	N Cascade Ave @ E Platte Ave - SB Phases 2 and 5 det 114				Through	Thru L1
	115	N Cascade Ave @ E Platte Ave - SB Phases 2 and 5 det 115				Left	LT L1
	118	< New >				Left	LT L2
					Appl	у Ок	Close

Click **Apply** or **OK** when done. (**Apply** saves your changes and keeps the window open; **OK** saves your changes and closes the window.)

• Using the Detector Configuration Window (Autoscope)

### Adding or Deleting Detectors for a Device

For the full procedure on how to import detector changes into Centracs, refer to **Configuring & Deleting Autoscope Entities on page 17-14**. When

### **Adding Detectors**

If one or more detectors were added outside of Centracs, then after you run the Verify function and click **Update Detectors**, the Detector Configuration window is shown with a new row for each new detector that was found. The dropdown in the "System Detector" column is blank for these rows:

— De	tector Configuration for N Cascade Ave @ E Platte Ave - SB Phase	es 2 and 5				
#	System Detector	Length	Stop Bar Dist	Name	Lane Type	Description
111	N Cascade Ave @ E Platte Ave - SB Phases 2 and 5 det 111 💌				Right-Thru	RT
112	N Cascade Ave @ E Platte Ave - SB Phases 2 and 5 det 112 💌				Through	Thru L3
113	N Cascade Ave @ E Platte Ave - SB Phases 2 and 5 det 113 💌				Through	Thru L2
114	N Cascade Ave @ E Platte Ave - SB Phases 2 and 5 det 114				Through	Thru L1
115	N Cascade Ave @ E Platte Ave - SB Phases 2 and 5 det 115 💌				Left	LT L1
118					Unknown	LT L2
				<u> </u>		
				Appl		Close

In the dropdown for each new detector, select the "New" option, then click **Apply** or **OK** to update Centracs. (**Apply** saves your changes and keeps the window open; **OK** saves your changes and closes the window.)

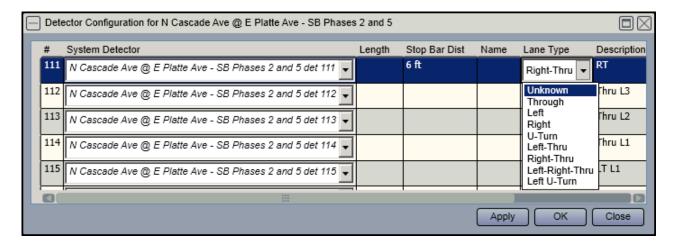
### **Deleting Detectors**

If one or more detectors were deleted outside of Centracs, then after you run the Verify function and click **Update Detectors**, the Detector Configuration window is shown with an updated list of detectors — excluding the deleted one(s). Click **Apply** to update Centracs.

**Note** • You can also run the Verify function directly from the Detector Configuration window (rather than from the Detection Device Configuration window). To do so, right-click a device in the Entity Tree and click Edit Properties. On the Entity Configuration window, click is to the right of the Detectors field. Click Verify. If detector changes are found, click Apply, then OK.

## **Changing Detector Properties**

The Detector Configuration window shows a list of the detectors that are configured for a device. You can use this window to change the Length, Distance From Stop Bar, Name, Lane Type, and Description of the detectors. To open this window, go to the Entity Configuration window for the device, then click the ... button to the right of the Detectors field.



**Note** • Changing the Name and Description on this window also changes these values in the Entity Tree.

To change a value, double-click in the field. For Length and Stop Bar Distance, one of these units must be included: feet or ft, miles or mi, meters or m, kilometers or km. For example, "6 ft" or "1.8 m".

- Length The length of the detector or detection zone.
- **Stop Bar Dist.** The distance of the detector from the stop bar at the intersection.
- Lane Type From the dropdown list, select the lane type (Left, Right, Through, U-Turn, etc.). Centracs uses this value on the Peak Hour Volume report (page 17-62). When a detector is added to Centracs for the first time, the Lane Type is set to "Unknown".

**Note** • Centracs uses the Length and Stop Bar Distance values for calculations in the MOE reports, VOS reports, Links, Traffic Responsive, and Centracs Adaptive. If you do not have any of these modules installed, then the Length and Distance fields are informational only.

Monitoring Devices

## **Monitoring Devices**

## Viewing Detector Log Status

The Detector Log Status window allows you to see the current polling status of all Autoscope detectors. To open this window from the main menu, select **Monitoring ▶ Detector Log Status...** 

The background color of the Last Timestamp column indicates the current status:

- Red means the data is stale i.e., data has not been received from the detector during the time interval specified by the "Max Time for Last Detector Log" setting on the Autoscope Settings window.
- Green means fresh data was just received.
- Neutral means data has been received from the detector during the time interval specified by the "Max Time for Last Detector Log" setting.

The date and time indicate the timestamp of the last data that was received from the detector.

Last Timestamp	Det #	Name	Description
7/26/2012 18:55:00	111	N Wahsatch Ave @ E Colorado Ave - EB	EB Phase
7/26/2012 19:00:00	112	N Wahsatch Ave @ E Colorado Ave - EB	EB Phase
7/26/2012 18:55:00	113	N Wahsatch Ave @ E Colorado Ave - EB	EB Phase
7/26/2012 19:00:00	114	N Wahsatch Ave @ E Colorado Ave - EB	EB Phase
7/26/2012 18:55:00	115	N Wahsatch Ave @ E Colorado Ave - EB	EB Phase
7/25/2012 10:55:00	113	N Nevada Ave @ E Platte Ave - EB Phase	Thru L3
7/25/2012 10:55:00	114	N Nevada Ave @ E Platte Ave - EB Phase	Thru L2
7/25/2012 10:55:00	115	N Nevada Ave @ E Platte Ave - EB Phase	Thru L1
7/25/2012 10:55:00	127	N Nevada Ave @ E Platte Ave - EB Phase	RT L1
7/25/2012 10:55:00	128	N Nevada Ave @ E Platte Ave - EB Phase	LT L1
7/26/2012 18:55:00	124	N Wahsatch Ave @ E Colorado Ave - SB	SB Phase
7/26/2012 18:55:00	125	N Wahsatch Ave @ E Colorado Ave - SB	SB Phase
7/26/2012 19:00:00	130	N Wahsatch Ave @ E Colorado Ave - SB	SB Phase
7/26/2012 19:00:00	131	N Wahsatch Ave @ E Colorado Ave - SB	SB Phase
7/26/2012 19:00:00	132	N Wahsatch Ave @ E Colorado Ave - SB	SB Phase
7/26/2012 19:00:00	111	N Wahsatch Ave @ E Colorado Ave - WB	WB Phase
7/26/2012 19:00:00	112	N Wahsatch Ave @ E Colorado Ave - WB	WB Phase
7/26/2012 18:55:00	113	N Wahsatch Ave @ E Colorado Ave - WB	WB Phase
			Close

Using the Autoscope Status Display •

## Using the Autoscope Status Display

The Autoscope Status display shows current status information for an Autoscope device:



### To open the Autoscope Status display:

Double-click the Autoscope in the Entity Tree or the Map Viewer.

Or

 Right-click an Autoscope in the Entity Tree or Map Viewer and select Show Status... from the popup menu.

You can open Status displays for multiple Autoscopes at the same time. You can move them, resize them, and dock them like other windows in Centracs.

By default, the button in the upper-right corner of the window is in the locked position. This means that as you click different entities in the Entity Tree or the Map Viewer, the entity selected in the Status display does not change. But if you click the button to its Using the Autoscope Status Display

unlocked position (1), then if you click a different entity in the Entity Tree or the Map Viewer, the Status display changes to show data for the newly selected entity. This is a quick and easy way to see status information for multiple entities, one after the other.

The top section of the window contains two views:

- Click the Snapshot tab to see the most current visual snapshot received from the Autoscope.
- Click the **Map** tab to see the location of the Autoscope on the map (if defined).

The bottom section of the window shows:

- Mode The mode the device was in during the last sync. While detecting traffic, a device is in "Detect" mode.
- Time This section shows the time reported by the device for the last "Get Time" request (in HH:MM:SS format), followed by the time drift between Centracs and the device. It also includes options to request the current time from the device or set the time on the device. For more details about time drift and the information shown in the Time section, refer to Synchronizing the Time on page 6-17.
- **SW Version** The version of software installed on the Autoscope device.
- Video Quality The quality of the video signal currently being received from the camera, from 0 to 100.
- Last Updates: Status The last time Centracs successfully received status information from the Autoscope, in HH:MM:SS format. This polling is controlled by the Primary Poll Rate field on the Device Communication Configuration window (page 3-44). A date in this field indicates the last status information received is older than 24 hours; a time in this field (in HH:MM:SS format) indicates the last status information received is newer than 24 hours; a dash indicates no status information has been received.
- Last Updates: Snapshot The last time a snapshot was received from the Autoscope, in HH:MM:SS format. Snapshot polling is controlled by the Secondary Poll Rate field on the Device Communication Configuration window (page 3-44) and the Status Snapshot Priority Poll Interval field on the Autoscope Settings window (page 17-6). A date in this field indicates the last snapshot received is older than 24 hours; a time in this field (in HH:MM:SS format) indicates the last snapshot received is newer than 24 hours; a dash indicates no snapshot has been received.
- Last Updates: Last Poll Data The last time Centracs successfully communicated with the Autoscope, in HH:MM:SS format. This polling is controlled by the Primary Poll Rate field on the Device Communication Configuration window (page 3-44). A date in this field indicates the last poll data received is older than 24 hours; a time in this field (in HH:MM:SS format) indicates the last poll data received is newer than 24 hours; a dash indicates no poll data has been received.

- Number The number of the detector in the ISS Network Browser.
- Description The description of the detector in the Entity Tree. (This can be changed on the Detector Configuration window (page 17-25) or on the Entity Configuration window.)
- **Type** This is always "Station".
- Comms A summary of the communications status between Centracs and the Autoscope. For more information, refer to *Viewing Comms on the Status Display* on page 6-53.

## Using the RTMS Status Display

The RTMS Status display shows current status information for an RTMS (Remote Traffic Microwave Sensor) device:

Ξ	G4 @ Cin	narron/31st	- RT	MS TCP	- Grp:RTM	IS Devi 🛆 🗖 🔀		
E	Time Last 16:51:14 error > 1 min 		Last status update			Communications		
				5:26:	09 PM	90.0 %		
I	Number	Descriptio	n	Туре				
L	1			G4				
L	2			G4				
L	3			G4				
L	4			G4				
L	5			G4				
L	6			G4				
I	7			G4				
I	8			G4				
L			_					

### To open the RTMS Status display:

Double-click the RTMS in the Entity Tree or the Map Viewer.

Or

 Right-click an RTMS in the Entity Tree or Map Viewer and select Show Status... from the popup menu.

You can open Status displays for multiple RTMS entities at the same time. You can move them, resize them, and dock them like other windows in Centracs.

By default, the button in the upper-right corner of the window is in the locked position. This means that as you click different entities in the Entity Tree or the Map Viewer, the entity selected in the Status display does not change. But if you click the button to its

unlocked position [1], then if you click a different entity in the Entity Tree or the Map Viewer, the Status display changes to show data for the newly selected entity. This is a quick and easy way to see status information for multiple entities, one after the other.

• Viewing the Device Status Window

The top section of the window shows:

- Time This section shows the time reported by the device for the last "Get Time" request (in HH:MM:SS format), followed by the time drift between Centracs and the device. It also includes options to request the current time from the device or set the time on the device. For more details about time drift and the information shown in the Time section, refer to Synchronizing the Time on page 6-17.
- Last status update The last time volume/occupancy data was received for the device, in HH:MM:SS format.
- Communications A summary of the communications status between Centracs and the RTMS device. Hover the mouse over the colored bar on the bottom to see more details; click it to open the Comm Statistics graph. For more information, refer to *Viewing Comms on the Status Display* on page 6-53.

The bottom section of the window shows:

- Number The ID number of the detector in the ISS configuration utility.
- Description The description of the detector in the Entity Tree. (This can be changed on the Detector Configuration window (page 17-13) or the Entity Configuration window.)
- **Type** The RTMS model: G4 or X3. (SX-300 sensors are shown as G4.)

### Viewing the Device Status Window

You can view the current communications status of all your Autoscope/RTMS devices at once, using the Device Status window. Refer to page 6-24.

Using the Detector Group Chart •

## **Using the Detector Group Chart**

The Detector Group Chart window allows you to generate various graphs and data tables (called "worksheets") to organize, display, and compare your Autoscope and/or RTMS data.

**Note** • While this window is open, the graphs/worksheets automatically refresh as often as configured in the Chart Reload Interval field on the Autoscope Settings window.

### To use the Detector Group Chart window:

1 From the main menu, select Monitoring > Detector Group Chart...

Detector Group Chart		
💿 👌 Autoscopes		
Chart C Comparison Graph C Worksho	eet	
Detector Group	Presentation	Data
🚴 Autoscopes 💽	Line	85th Percentile Speed
Time Frame	Calculation	Resolution
Current Day	Average	1 Day
		OK Cancel
	Time (Local)	
Newest Timestamp: ? Last Updated: ?		Close

- **2** Use the radio buttons at the top to specify whether you want to create a:
  - Chart
  - Comparison Graph (compares two days)
  - Worksheet (data table)
- **3** From the Detector Group list, select a device or group.
- 4 Select or enter a value for each of the remaining fields. The fields differ depending on whether you are creating a chart, comparison graph, or worksheet. Refer below for details about each field.
- 5 Click OK.

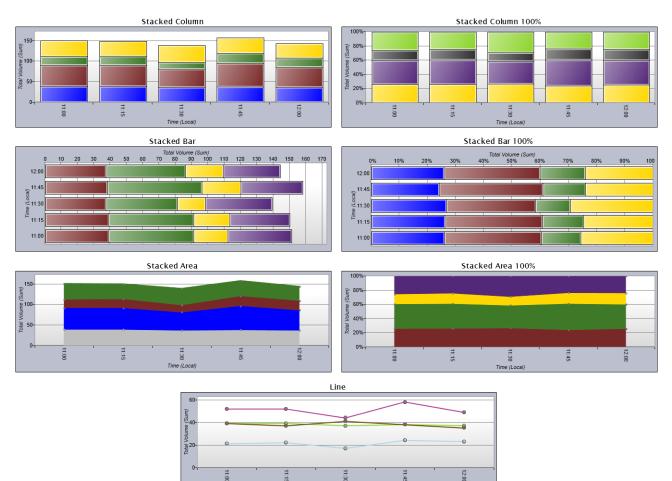
Detector Group Chart - Field Descriptions

By default, the button in the upper-right corner of the window is in the locked position. This means that as you click different entities in the Entity Tree or the Map Viewer, the entity selected in the Detector Group Chart does not change. But if you click the button to

its unlocked position , then if you click a different entity in the Entity Tree or the Map Viewer, the Detector Group Chart changes to show data for the newly selected entity. This is a quick and easy way to generate graphs and worksheets for multiple entities, one after the other.

## Detector Group Chart - Field Descriptions

 Presentation – For a Chart or Comparison Graph, select one of the available options. An example of each presentation type is shown below:



**Note** • The three "100%" charts show the data as a percentage of the whole; the other charts show the data in raw numbers.

 Data – For a Chart or Comparison Graph, select the type of data to analyze (Average Flow Rate, Total Volume, etc.).

- **Time Frame** For a Chart or Worksheet, specify the time range to analyze:
  - Last Record: uses only the most recent single set of data received.
  - Last Hour: uses all data received during the most recent hour.
  - **Current Day**: uses only data received today, up to the current time.
  - Last 24 Hours: uses the most recent 24 hours of data.
  - **Custom**: allows you to enter a specific date.
- Calculation For a Chart or Comparison Graph, select Sum or Average. For example, if you are creating a Total Volume graph with a Resolution of 1 hour, and if you select the Sum option, each point on the graph represents the *sum* of all the volume counts for the entire hour; if you select the Average option, each point on the graph represents the *average* of all the volume counts for the entire hour.
- Resolution For a Chart or Comparison Graph, specify the amount of data to include in each data point on the graph: 15 Minutes, 30 Minutes, 1 Hour, or 1 Day. For example, if you set the Time Frame to Last 24 Hours and the Resolution to 30 Minutes, the graph will show 48 data points; each point represents the sum or average of 30 minutes of data.
- Day For a Comparison Graph, select the most recent day to include in the comparison: Today, This Day Last Week, or Yesterday.
- Days Past For a Comparison Graph, specify the other day to include in the comparison. For example, if you set the Day field to Yesterday and the Days Past field to 1, the graph will compare yesterday with the day before yesterday.
- **Columns** For a Worksheet, use the checkboxes to select the columns to include in the data table. Use the radio buttons to specify whether each column should show the sum of the values or the average of the values.

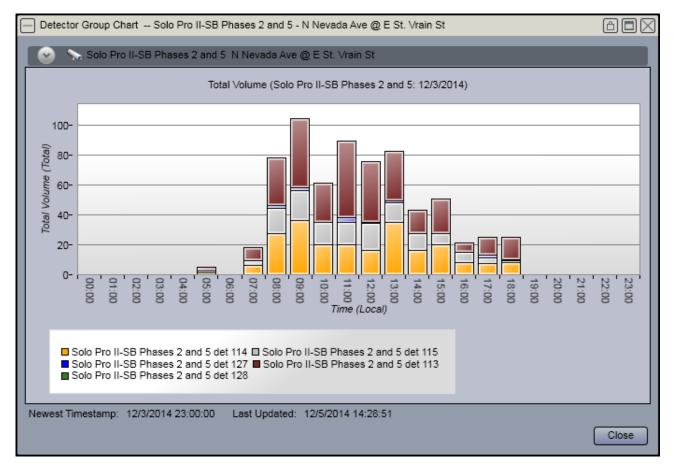
Detector Group Chart - Sample Chart

## Detector Group Chart - Sample Chart

## Criteria Used:

Detector Group Chart Solo Pro II-SB Pl	nases 2 and 5 - N Nevada Ave @ E St. Vrain S	t 🗅 🗖 🖂
💿 💊 Solo Pro II-SB Phases 2 and 5	N Nevada Ave @ E St. Vrain St	
Chart C Comparison Graph C Workshe	et	
Detector Group	Presentation	Data
Solo Pro II-SB Phases 2 and 5 N N	Stacked Column	Total Volume
Time Frame	Calculation	Resolution
Custom	Total	1 Hour
12/3/2014		
		OK Cancel
Newest Timestamp: 12/3/2014 23:00:00	Last Updated: 12/5/2014 14:28:51	
		Close

### Results:



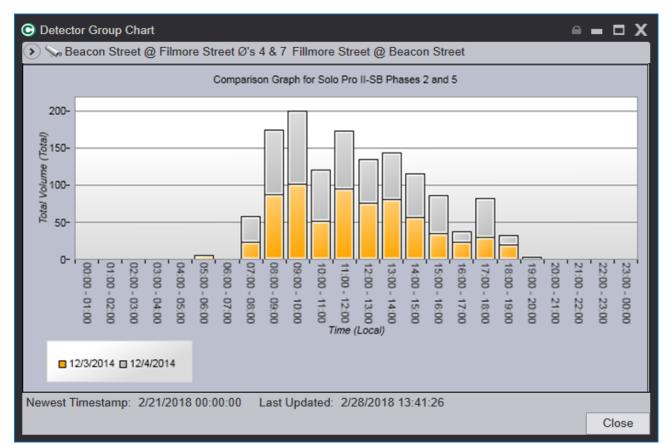
Detector Group Chart - Sample Comparison Graph

## Detector Group Chart - Sample Comparison Graph

### Criteria Used:

Detector Group Chart Solo Pro II-SB Pl	hases 2 and 5 - N Nevada Ave @ E St. Vrain	St	$\bigcirc \Box \boxtimes \boxtimes$
🔗 💊 Solo Pro II-SB Phases 2 and 5	N Nevada Ave @ E St. Vrain St		
C Chart  C Comparison Graph  Worksh	eet		
Detector Group	Presentation	Data	
Solo Pro II-SB Phases 2 and 5 N N 🔻	Stacked Column	Total Volume	•
Calculation	Resolution	Day	
Total	1 Hour	Yesterday	•
Days Past			
		ОК	Cancel
Newest Timestamp: 12/4/2014 00:00:00	Last Updated: 12/5/2014 14:31:18		
		(	Close

### Results:



Detector Group Chart - Sample Worksheet

## Detector Group Chart - Sample Worksheet

## Criteria Used:

— Det	ector Group Chart Solo Pro II-SB Phases 2 and 5 - N Neva	da Ave @ E	St. Vrain St	80	$\boxtimes$
	Solo Pro II-SB Phases 2 and 5 N Nevada Ave @ E St.	Vrain St			h
C Ch	art 🔿 Comparison Graph 💿 Worksheet				
Detec	tor Group	Columns			
<b>\$</b>	Solo Pro II-SB Phases 2 and 5 N Nevada Ave @ E St. Vr; 💌		85th Percentile Speed	🖸 Total 💭 Avg 🛛	
Time	Frame		Arithmetic Mean Speed	Total C Avg	
Cust	om 💌		Average Flow Rate Average Vehicle Gap	<ul> <li>Total C Avg</li> <li>Total C Avg</li> </ul>	
		H	Average Vehicle Headway	Total C Avg	
12/3/	/2014 15	E .	Average Vehicle Occupancy	Total C Avg	
			Class A Count	Total O Avg	
			Class A Volume	💽 Total 💭 Avg	
			Class B Count	Total O Avg	
			Class B Volume	💽 Total 🔘 Avg	
			Class C Count	💽 Total 💭 Avg	
					1
				OK Cancel	J
				Close	]

## Results:

		12/3/2014			
Detector		Average Flow Rate	Class A Count	Class B Count	Total Volume
📴 Solo Pro II-SB Phases 2 and 5 det 114 SE	B Phase 2 L2	2640.0	174.0	16.0	220.0
🚎 Solo Pro II-SB Phases 2 and 5 det 115 SE	B Phase 2 L1	1584.0	119.0	3.0	132.0
📑 Solo Pro II-SB Phases 2 and 5 det 127 SE	B Phase 2 R1	144.0	11.0	1.0	12.0
Solo Pro II-SB Phases 2 and 5 det 113 SE	B Phase 2 L3	3744.0	242.0	14.0	312.0
📑 Solo Pro II-SB Phases 2 and 5 det 128 St	B Phase 5 LT	0.0	0.0	0.0	0.0
Total		8112.0	546.0	34.0	676.0

Maintaining Detector Groups

# **Maintaining Detector Groups**

The Detector Groups window allows you to organize detectors into various groups for reporting purposes.

- Detect	or Groups	;						
					G	Grou	ıp's D	Detectors
Search				🗙 🕂 Add		+	Add.	
In Tree	# Dets		Group Name	Description	] [	_	#	Name Parent Name
	5	<b>\$</b> *	Alex P Keaton @ Yothers	Alex P Keaton Ave @ Yothers Blvc		-	101	Forest Edge Rd @ Kelley's Rd - NB Phases 1 and 6 det 101 Forest Edge/Kelley's - NB P
	5	\$	Arthur @ Fonzarelli - EB I	Arthur St @ Fonzarelli Ave		-	102	Forest Edge Rd @ Kelley's Rd - NB Phases 1 and 6 det 102 Forest Edge/Kelley's - NB P
	5	\$	Bonaduce @ Patridge - V	Bonaduce Ave @ Patridge Rd		-	103	Forest Edge Rd @ Kelley's Rd - NB Phases 1 and 6 det 103 Forest Edge/Kelley's - NB P
	5	٩.	Cliff @ Huxtable - NB Pha	Cliff Rd @ Huxtable St		-	104	Forest Edge Rd @ Kelley's Rd - NB Phases 1 and 6 det 104 Forest Edge/Kelley's - NB P
<u></u>	46	\$	ICX			-	111	N Wahsatch Ave @ E Colorado Ave - EB Phases 3 and 8 det Wahsatch/Colorado - EB Ph
	5	\$	Lamont @ Sanford - EB F	Lamont Ave @ Sanford Blvd		-	112	N Wahsatch Ave @ E Colorado Ave - EB Phases 3 and 8 det Wahsatch/Colorado - EB Ph
	5	\$*	Lionel @ Jefferson - SB P	Lionel Ave @ Jefferson Rd		-	113	N Wahsatch Ave @ E Colorado Ave - EB Phases 3 and 8 det Wahsatch/Colorado - EB Ph
	5	٩.	Lovey @ Thurston - WB F	Lovey Ln @ Thurston Howell III F		-	114	N Wahsatch Ave @ E Colorado Ave - EB Phases 3 and 8 det Wahsatch/Colorado - EB Ph
য	20	-	Pinky Tuscadero			-	115	N Wahsatch Ave @ E Colorado Ave - EB Phases 3 and 8 det Wahsatch/Colorado - EB Ph
	4	\$	Raj @ Rerun - NB Phases	Roger Thomas Rd @ Rerun Blvd		-	111	N Wahsatch Ave @ E Colorado Ave - NB Phases 1 and 6 det Wahsatch/Colorado - NB Pł
	5	-	Ralph Malph @ Potsy - Si	Ralph Malph Rd @ Potsy Pl		-	112	N Wahsatch Ave @ E Colorado Ave - NB Phases 1 and 6 det Wahsatch/Colorado - NB Pł
	35	<b>\$</b>	SPII			-	113	N Wahsatch Ave @ E Colorado Ave - NB Phases 1 and 6 det Wahsatch/Colorado - NB Ph
	24		TERRA					
								Close

The left side of the window shows the existing detector groups. This list includes:

- groups that were added manually via this window
- groups that were added manually via the Entity Tree

For each group, the "In Tree" column shows whether or not the group is included in the Entity Tree. If so, it is treated like any other Group in Centracs; if not, it is a reporting group only, and can only be used in the reports and the DCMS Detector Group Chart window. The left side of the window also includes a "# Dets" column, which shows the number of detectors that are members of the group.

The right side of the window shows the detectors included in the selected group. For each detector, the window shows the detector number, the detector name, the parent device name, and the detector description.

**Note** • A Group added via the Detector Groups window is a grouping of *detectors*, whereas a Group added via the Entity Tree is a grouping of *devices* (and the detectors that are associated with those devices). A Detector Group is a little more flexible — it even allows you to mix-and-match specific detectors from different devices, if needed (for example, you could create a Detector Group for all the northbound detectors for all the devices on a particular street, while excluding all the southbound/eastbound/westbound detectors that are associated with those devices). If the Group will only be used in the reports and/or the DCMS Detector Group Chart window, use the Detector Groups window to add the Group.

Maintaining Detector Groups

#### To add a detector group:

- 1 From the main menu, select **Configuration ▶ Detector Groups...** The Detector Groups window opens.
- 2 On the left side of the window, click Add...

E	Add/Edit D	etector Group 🔲 🗍	$\times$
	Group's Nam	e and Description	
	Name	Group	I
	Description		I
	Jurisdiction	General	I
		OK Cancel	)

- 3 Enter a name and, optionally, a description for the new group.
- 4 Select the Jurisdiction to which the new group will belong. Refer to *Defining Jurisdictions* on page 20-12.
- 5 Click OK.
- 6 On the right side of the Detector Groups window, click **Add...** The Entity Selection window opens.
- 7 Select the detector(s) to add to the group and click **OK**. For details, refer to **Using the** *Entity Selection Window* on page 3-18.
- 8 Click **Save** on the Detector Groups window.

The new group will now appear in the dropdown list on the Detector Group Chart window, on each of the DCMS reports, and on several of the standard Centracs reports.

**9** Optionally, if you want this new group to be shown in the Entity Tree, enable the "In Tree" checkbox and click **Save**.

#### To change a detector group:

- 1 From the main menu, select **Configuration ▶ Detector Groups...** The Detector Groups window opens.
- 2 Right-click the group to change and click Edit...

**Note** • If you have a large number of Groups in your system, you can use the Search box to quickly find a specific one. Type one or more full words in the name or description, or type one or more characters with an asterisk wildcard (\*). For example, to find a Group containing the word "Autoscope", you could enter Autoscope or AUT\* or \*SCOPE. It is not case-sensitive. As you type, the system filters out any Groups whose name and description do not contain the words or characters you entered.

Maintaining Detector Groups •

6	Add/Edit D	etector Group	$\boxtimes$						
,	Group's Nam	e and Description							
	Name Centennial Rd @ Garden of the Gods Rd								
	Description	Centennial Rd @ Garden of the Gods Rd	1						
	Jurisdiction	General 🔹							
		OK Cancel							

- 3 Make changes and click **OK**.
- 4 Click Save.

#### To delete a detector group:

- 1 From the main menu, select **Configuration ▶ Detector Groups...** The Detector Groups window opens.
- 2 Right-click the group to delete and click **Delete**.

**Note** • If you have a large number of Groups in your system, you can use the Search box to quickly find a specific one. Type one or more full words in the name or description, or type one or more characters with an asterisk wildcard (\*). For example, to find a Group containing the word "Autoscope", you could enter Autoscope or AUT\* or \*SCOPE. It is not case-sensitive. As you type, the system filters out any Groups whose name and description do not contain the words or characters you entered.

3 If you are asked to confirm the deletion, click **Yes**.

The group is deleted from the Detector Groups window. If the "In Tree" checkbox was enabled for this group, then the group is also deleted from the Entity Tree.

#### To add detectors to a group:

- 1 On the right side of the Detector Groups window, click **Add...** The Entity Selection window opens.
- 2 Select the detector(s) to add to the group and click **OK**. For details, refer to **Using the** *Entity Selection Window* on page 3-18.
- 3 Click Save on the Detector Groups window.

#### To delete detectors from a group:

- 1 On the left side of the Detector Groups window, select the group.
- 2 On the right side of the window, right-click the detector to delete.
- 3 Click Remove.
- 4 Click Save.

Data Collection Reports

# **Data Collection Reports**

### **Common Report Parameters**

#### **Entity State**

Several of the Data Collection reports have an "Entity State" option that allows you to specify whether to include only active entities, only deleted entities, or both in the Group/ Device dropdown.

### Group/Device

Many of the Data Collection reports have a "Group/Device" option that allows you to specify which devices to include in the report:

- To run the report for a single device, select that device from the Group/Device dropdown.
- To run the report for a collection of devices or detectors, you can create a Group either in the Entity Tree, or on the Detector Groups window (page 17-39). Then you can select the newly added Group from the Group/Device dropdown on the report. (You may need to close and reopen the report in order to see the newly added Group.)

**Note** • A Group added via the Detector Groups window is a grouping of *detectors*, whereas a Group added via the Entity Tree is a grouping of *devices* (and the detectors that are associated with those devices). A Detector Group is a little more flexible — it even allows you to mix-and-match specific detectors from different devices, if needed (for example, you could create a Detector Group for all the northbound detectors for all the devices on a particular street, while excluding all the southbound/eastbound/ westbound detectors that are associated with those devices). If the Group will only be used in the reports and/or the DCMS Detector Group Chart window, use the Detector Groups window to add the Group.

### Resolution

Many of the Data Collection reports have a "Resolution" option that allows you to specify the amount of data to include in each row of the table, and if applicable, each data point on the graph. For example, if you set the Resolution to 1 Hour, any graphs will show 24 data points (one for each hour in the day); each row in the data table and each data point on the graphs will represent the sum or average of 60 minutes of data. Or if you set the Resolution to 30 Minutes, any graphs will show 48 data points (two for each hour in the day); each row in the graphs will represent the sum or average of 30 minutes of data.

### All Detector Data

This report shows the following data for each selected device's detectors: Total Volume, Average Occupancy, Arithmetic Mean Speed, Average Flow Rate, Average Vehicle Headway, Average Vehicle Gap, 85% Speed.

This report can be used for Autoscope and RTMS devices.

For information about the Entity State, Group/Device, and Resolution options, refer to page 17-42.

All Detector Data										(	
Configurable Report C	ptions										
Start Date: 3/1/2019	;	End Date:	3/1/2015							View Repo	ort
Entity State: Active	•	Group/Device:	Two Scopes				•				
Resolution: 1 Hour											
[4 4 1 of 1 ▶	₩   + ⊗ 🕲   🖨 🗐 🍋 属 -	100% •		Find	Next				I		
All Detect	or Data										
Group/Device: Two S	Copes										
Resolution: 1 Hou	ır										
Run Date: 9/16/2	2015 4:40:38 PM										
Date Range: 3/1/20	115-3/1/2015										
Time	Detector		Total Volume	Average Occupancy	Arithmetic Mean Speed	Average Flow Rate	Average Vehicle Headway	Average Vehicle Gap	85% Speed	Samples	
3/1/2015 12:00:00 AM	30th & Fontanero, Ø's 6 & 1 det 101		238	22	0	238	16			12	
3/1/2015 12:00:00 AM	30th & Fontanero, Ø's 6 & 1 det 102		253	20	0	253	14			12	
3/1/2015 12:00:00 AM	30th & Fontanero, Ø's 6 & 1 det 103		276	11	0	276	13			12	
3/1/2015 12:00:00 AM	30th & Fontanero, Ø's 6 & 1 det 104		236	9	0	236	15			12	
3/1/2015 12:00:00 AM	30th & Fontanero, Ø's 6 & 1 det 105		336	23	0	336	11			12	
3/1/2015 12:00:00 AM	Fillmore & N Grand Vista, Ø 4 det 101		137	32	8	137	28			12	
3/1/2015 12:00:00 AM	Fillmore & N Grand Vista, Ø 4 det 102		246	5	14	246	15			12	
3/1/2015 12:00:00 AM	Fillmore & N Grand Vista, Ø 4 det 103		208	6	13	208	18			12	
3/1/2015 12:00:00 AM	Fillmore & N Grand Vista, Ø 4 det 104		189	5	12	189	20			12	
3/1/2015 12:00:00 AM	Fillmore & N Grand Vista, Ø 4 det 105		110	57	10	110	34			12	
2/1/2016 1-00-00 AM	20th & Eantanara Ric & & 1 dat 101		227	20	0	227	16			12	

The Samples column shows the number of data samples included in each row of the report.

• Arithmetic Mean Speed

# Arithmetic Mean Speed

The Arithmetic Speed report shows the time mean speed for each detector during each hour of the day. If multiple days are included in the report, the multi-day values are averaged together. The report includes both a data table and a graph.

For information about the Group/Device and Resolution options, refer to page 17-42.

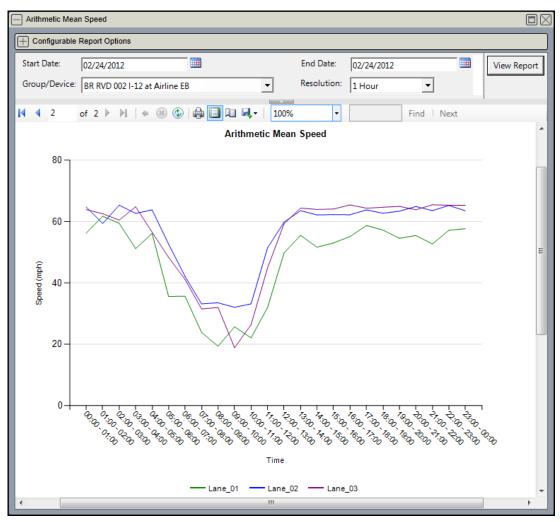
Arithmetic Mean Spe						
Configurable Repo	rt Options					
tart Date: 02/	24/2012		End Date	e: 02/24/2012		View Report
roup/Device: BR	RVD 002 I-12 at Airline E	В		on: 1 Hour	-	
,				,		
	2 🕨 🔰   🗧 🛞 😳	🌐 🔲 🛍 🔍 -	100%	•	Find Next	
Arithm	netic Mear	Speed	(mph) R	eport		
		-	/	•		
Group/Device:	BR RVD 002 I-12 at	Airline EB				
Resolution:	1 Hour					
Run Date:	8/13/2012 12:25:49	PM				
Date Range:	2/24/2012-2/24/2012	2				
Time			BR RVD - 002 I-12 at			
	Airline EB det 1 (Lane_01)	Airline EB det 2 (Lane_02)	Airline EB det 3 (Lane_03)	Mean Speed		
00:00 - 01:00	56.24	64.77	63.92	61.64		
01:00 - 02:00	61.75	59.4	62.55	61.23		
02:00 - 03:00	59.46	65.33	60.48	61.75		
03:00 - 04:00	51.21	62.66	64.83	59.57		
04:00 - 05:00	56.14	63.81	56.53	58.83		
05:00 - 06:00	35.6	52.65	48.35	45.53		
06:00 - 07:00	35.66	42.11	41.11	39.63		
07:00 - 08:00	23.88	33.2	31.54	29.54		
08:00 - 09:00	19.39	33.54	32.01	28.31		
09:00 - 10:00	25.7	32.08	18.9	25.56		
10:00 - 11:00	22.11	33.2	26.41	27.24		
11:00 - 12:00	32	51.43	44.89	42.77		
12:00 - 13:00	49.76	59.81	59.29	56.29		
13:00 - 14:00	55.52	63.55	64.4	61.16		
14:00 - 15:00	51.65	62.17	63.95	59.26		
15:00 - 16:00	53.02	62.28	64.09	59.79		
16:00 - 17:00	55.13	62.22	65.43	60.93		
17:00 - 18:00	58.71	63.8	64.37	62.29		
18:00 - 19:00	57.23	62.73	64.67	61.54		
19:00 - 20:00	54.56	63.39	64.96	60.97		
20:00 - 21:00		64.92	63.85	61.41		
21:00 - 22:00	52.71	63.57	65.48	60.59		
22:00 - 23:00		65.24	65.34	62.58		
23:00 - 00:00		63.51	65.33	62.18		
Average Vehicl Mean Speed	e 47.41	56.31	55.11	52.94		
						+

Arithmetic Mean Speed •

The Average Vehicle Mean Speed column at the right shows the overall average for this hour (for all detectors and all days).

The Average Vehicle Mean Speed row at the bottom shows the overall average for this detector (for all hours and days).





Average 85th Percentile Speed (G4/SX-300 RTMS)

## Average 85th Percentile Speed (G4/SX-300 RTMS)

For G4 and SX-300 RTMS devices, Centracs logs the 85th percentile speed data contained in the ICx detector data files. 85th percentile speed is the top travel speed of 85% of the traffic. In other words, 85% of the traffic traveled at or below this speed. This information can be used to establish appropriate speed limits. For each hour of the day, the Average 85th Percentile Speed Report in Centracs shows the average of all the 85th percentile speed data for that hour. If multiple days are included in the report, the multi-day values are averaged together. The report includes both a data table and a graph.

For information about the Group/Device and Resolution options, refer to page 17-42.

Configurable Re	port Options					(
rt Date: 0	8/20/2012			End Date: 0	8/20/2012	View Rep
oup/Device:	3x SB		•	Resolution: 1	Hour	
	1 ▶ ▶   4 இ	🕲   🖨 🔲 💷 🔍 -	100%	•	Find   Next	
				(mamb) 🗖		
Avera	ige astn i	Percentile	Speed (	(mpn) R	eport	
Group/Device	e: R3x SB					
Resolution:	1 Hour					
Run Date:	8/24/2012 11:36	:12 AM				
Date Range:	8/20/2012-8/20/2	2012				
-				P41 SB det 3 (SB	3) Average 85th	
Time	R38 SB det 3 (SI	B_3) R39 SB det 3 (SB_3)	R40 SB det 3 (SB_3)	(141 00 det 0 (00_	Percentile Speed	
Time 21:00 - 22:	· · · · ·	B_3) R39 SB det 3 (SB_3) 49.08	57.17	42.17	Percentile Speed 47.18	
	00 40.31					
21:00 - 22:	00 40.31 00 42.36	49.08	57.17	42.17	47.18	
21:00 - 22: 22:00 - 23:	00 40.31 00 42.36 00 44.27 ith 42.31	49.08 49.1	57.17 57.1	42.17 42.42	47.18 47.75	

Page 1

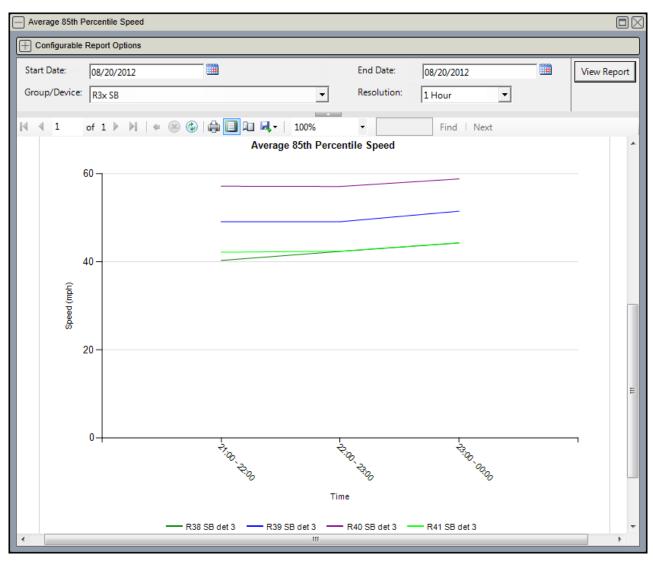
**Note** • For space considerations, this example shows only 3 hours of the day.

The Average 85th Percentile Speed column at the right shows the overall average for this hour (for all detectors and all days).

The Average 85th Percentile Speed row at the bottom shows the overall average for this detector (for all hours and days).

Average 85th Percentile Speed (G4/SX-300 RTMS) •





• Average Vehicle Gap (G4/SX-300 RTMS)

## Average Vehicle Gap (G4/SX-300 RTMS)

The Average Vehicle Gap report is for G4 and SX-300 RTMS devices only. It shows the average number of seconds between vehicles, for each hour of the day. If multiple days are included in the report, the multi-day values are averaged together. The report includes both a data table and a graph.

For information about the Group/Device and Resolution options, refer to page 17-42.

	Options					
art Date: 08/20	/2012			End Date: 08	/20/2012	View Repo
oup/Device: R3x S	B		•	Resolution:	Hour 💌	
	▶ H   + ⊗ 🕸	🌐 🔲 🔍 🔍 -	100%	•	Find   Next	
	e Vehicle			ort		
·····						
Group/Device:	R3x SB					
Resolution:	1 Hour					
Run Date:	8/24/2012 11:41:32	AM				
	8/24/2012 11:41:32 8/20/2012-8/20/201:					
	8/20/2012-8/20/201:		R40 SB det 3 (SB_3)	R41 SB det 3 (SB_3	) Average Vehicle Gap (sec)	
Date Range:	8/20/2012-8/20/201:	2	R40 SB det 3 (SB_3) 2.43	R41 SB det 3 (SB_3		
Date Range:	8/20/2012-8/20/2012 R38 SB det 3 (SB_3)	2 R39 SB det 3 (SB_3)			Gap (sec)	
Date Range:           Time           21:00 - 22:00	8/20/2012-8/20/2012 R38 SB det 3 (SB_3) 2.37	2 R39 SB det 3 (SB_3) 2.39	2.43	1.77	Gap (sec) 2.24	

Page 1

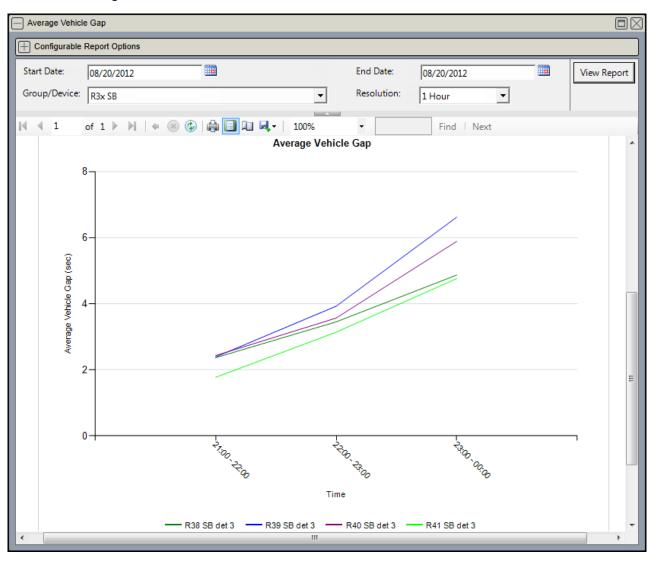
#### **Note** • For space considerations, this example shows only 3 hours of the day.

The Average Vehicle Gap column at the right shows the overall average for this hour (for all detectors and all days).

The Average Vehicle Gap row at the bottom shows the overall average for this detector (for all hours and days).

Average Vehicle Gap (G4/SX-300 RTMS) •





**Note** • If the device is configured to collect headway data instead of gap data, Centracs uses the headway data to calculate gap.

Average Vehicle Headway

# Average Vehicle Headway

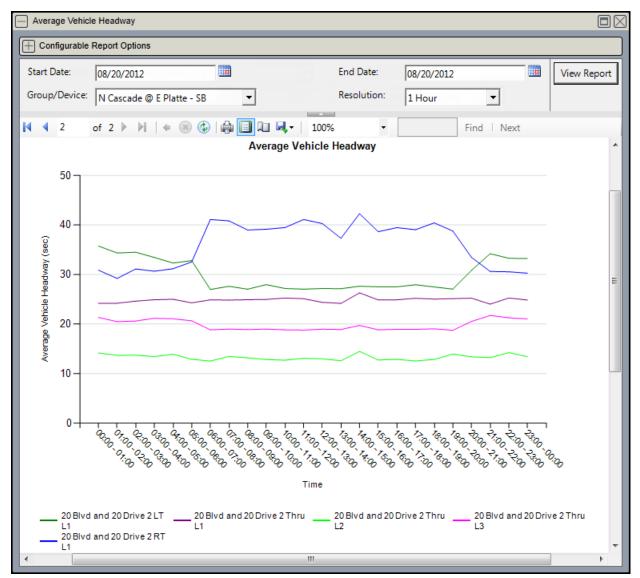
The Average Vehicle Headway report shows the average time between vehicles for each detector during each hour of the day. If multiple days are included in the report, the multiday values are averaged together. The report includes both a data table and a graph:

Configurable F	Report Options					
Start Date:	08/20/2012		End [	Date: 08/20/20	12	View Repo
Group/Device:	N Cascade @ E Platte -	SB 👻	Reso	ution: 1 Hour	-	
	,					
	of 2 🕨 🎽   🖷 🛞			•	Find Next	
Averag	je Vehicle	Headwa	ay (sec)	Report		
Group/Device:	N Cascade @ E Plat	to SB				
Resolution:	1 Hour	le - 3D				
Run Date:	8/24/2012 12:35:53					
Date Range:	8/20/2012-8/20/2012	2				
Time	N Cascade Ave @ E Platte Ave - WB	N Cascade Ave @ E Platte Ave - WB	N Cascade Ave @ E Platte Ave - WB	N Cascade Ave @ E Platte Ave - WB	N Cascade Ave @ E Platte Ave - WB	Average Vehicle Headway (sec)
	Phases 4 and 7 det	Phases 4 and 7 det	Phases 4 and 7 det	Phases 4 and 7 det	Phases 4 and 7 det	autruy (SCC)
	115 (20 Blvd and 20 Drive 2 LT L1)	111 (20 Blvd and 20 Drive 2 RT L1)	114 (20 Blvd and 20 Drive 2 Thru L1)	113 (20 Blvd and 20 Drive 2 Thru L2)	112 (20 Blvd and 20 Drive 2 Thru L3)	
00:00 - 01:00	35.77	30.9	24.22	14.18	21.36	25.29
01:00 - 02:00	34.37	29.23	24.22	13.71	20.5	24.41
02:00 - 03:00	34.51	31.14	24.66	13.73	20.63	24.93
03:00 - 04:00	33.46	30.69	24.92	13.45	21.19	24.74
04:00 - 05:00	32.33	31.19	25.03	13.93	21.08	24.71
05:00 - 06:00	32.82	32.56	24.3	12.9	20.67	24.65
06:00 - 07:00	27.01	41.12	24.91	12.56	18.85	24.89
07:00 - 08:00	27.63	40.85	24.85	13.48	19.01	25.16
08:00 - 09:00	27.06	38.99	24.93	13.21	18.91	24.62
09:00 - 10:00	27.98	39.16	24.99	12.86	19.01	24.8
10:00 - 11:00	27.19	39.49	25.28	12.72	18.85	24.71
11:00 - 12:00	27.06	41.11	25.14	13.11	18.8	25.05
12:00 - 13:00	27.19	40.3	24.4	13	18.98	24.77
13:00 - 14:00	27.16	37.33	24.19	12.61	18.91	24.04
14:00 - 15:00	27.66	42.29	26.31	14.5	19.75	26.1
15:00 - 16:00	27.54	38.66	24.9	12.76	18.85	24.54
16:00 - 17:00	27.54	39.48	24.92	12.88	18.96	24.76
17:00 - 18:00	27.95	39.06	25.22	12.57	18.96	24.75
18:00 - 19:00	27.5	40.44	25.06	12.87	19.06	24.99
19:00 - 20:00	27.08	38.78	25.15	13.95	18.76	24.75
20:00 - 21:00	30.86	33.48	25.25	13.41	20.56	24.71
21:00 - 22:00	34.22	30.64	24.04	13.24	21.76	24.78
22:00 - 23:00	33.29	30.57	25.28	14.26	21.29	24.94
23:00 - 00:00	33.26	30.29	24.87	13.44	21.04	24.58

Average Vehicle Headway

The Average Vehicle Headway column at the right shows the overall average for this hour (for all detectors and all days).

The Average Vehicle Headway row at the bottom shows the overall average for this detector (for all hours and days).



Page 2

For information about the Group/Device and Resolution options, refer to page 17-42.

**Note** • If the device is configured to collect gap data instead of headway data, Centracs uses the gap data to calculate headway.

• Average Vehicle Occupancy

# Average Vehicle Occupancy

The Average Vehicle Occupancy report shows the average occupancy for each detector during each hour of the day. If multiple days are included in the report, the multi-day values are averaged together. The report includes both a data table and a graph:

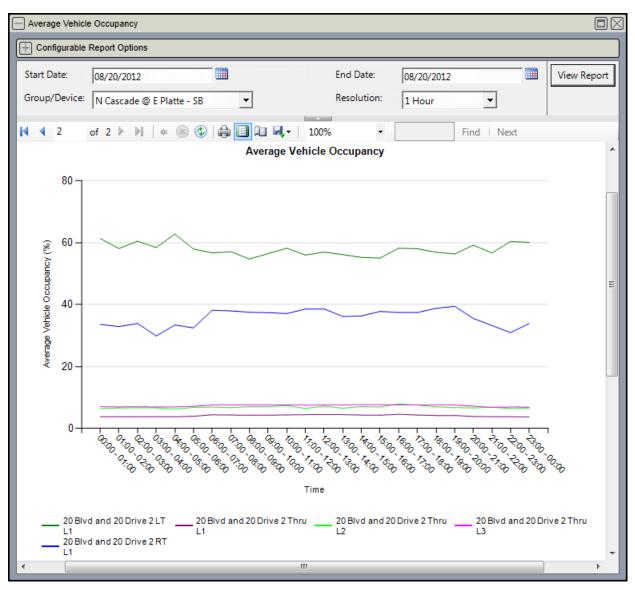
Configurable Rep	ourt Options					
	3/20/2012		End [	Date: 08/20/20	12	View Repo
Group/Device: N	Cascade @ E Platte -	SB 💌	Resol	ution: 1 Hour	•	
∢ 1 of	2 🕨 🔰   👄 🛞	۵ 🖨 🖬 🕼	<b>-</b> 100%	•	Find Next	
	e Vehicle					
Group/Device: 1	N Cascade @ E Plat	te - SB				
lesolution:	1 Hour					
Run Date:	3/24/2012 12:35:53	AM				
)ate Range:	3/20/2012-8/20/2012	2				
<b>T</b> ime -						August Mahiala
Time	Platte Ave - WB	Platte Ave - WB	N Cascade Ave @ E Platte Ave - WB	Platte Ave - WB	Platte Ave - WB	Average Vehicle Occupancy (%)
	Phases 4 and 7 det 115 (20 Blvd and 20	Phases 4 and 7 det 111 (20 Blvd and 20	Phases 4 and 7 det 114 (20 Blvd and 20	Phases 4 and 7 det 113 (20 Blvd and 20	Phases 4 and 7 det 112 (20 Blvd and 20	
	Drive 2 LT L1)	Drive 2 RT L1)	Drive 2 Thru L1)	Drive 2 Thru L2)	Drive 2 Thru L3)	
00:00 - 01:00	61.33	33.59	3.76	6.4	7.04	22.42
01:00 - 02:00	58.08	32.87	3.75	6.6	6.94	21.65
02:00 - 03:00	60.45	33.91	3.76	6.69	7.02	22.37
03:00 - 04:00	58.39	29.84	3.73	6.64	6.91	21.1
04:00 - 05:00	62.75	33.4	3.73	6.2	6.94	22.61
05:00 - 06:00	57.93	32.45	3.93	6.79	7.15	21.65
06:00 - 07:00	56.67	38.13	4.4	6.91	7.58	22.74
07:00 - 08:00	57.07	37.96	4.33	6.74	7.61	22.74
08:00 - 09:00	54.71	37.5	4.24	7.05	7.58	22.22
09:00 - 10:00	56.45	37.37	4.26	7.03	7.56	22.54
10:00 - 11:00	58.18	37.08	4.36	7.38	7.6	22.92
11:00 - 12:00	55.99	38.55	4.44	6.45	7.53	22.59
12:00 - 13:00	56.93	38.57	4.43	7.22	7.56	22.94
13:00 - 14:00	56.12	36.14	4.45	6.53	7.55	22.16
14:00 - 15:00	55.22	36.31	4.31	7.07	7.65	22.11
15:00 - 16:00	55	37.76	4.25	6.95	7.66	22.32
16:00 - 17:00	58.19	37.44	4.57	7.88	7.59	23.13
17:00 - 18:00	58.02	37.41	4.32	7.53	7.58	22.97
18:00 - 19:00	56.9	38.76	4.17	6.98	7.54	22.87
19:00 - 20:00	56.34	39.43	4.18	6.74	7.56	22.85
20:00 - 21:00	59.16	35.52	3.84	6.62	7.18	22.46
21:00 - 22:00	56.66	33.21	3.76	6.84	6.79	21.45
22:00 - 23:00	60.37	30.94	3.75	6.41	6.91	21.67
23:00 - 00:00	60.05	33.89	3.68	6.53	6.88	22.21
Average Vehicle	57.79	35.75	4.1	6.84	7.33	22.36

Average Vehicle Occupancy •

The Average Vehicle Occupancy column at the right shows the overall average for this hour (for all detectors and all days).

The Average Vehicle Occupancy row at the bottom shows the overall average for this detector (for all hours and days).





For information about the Group/Device and Resolution options, refer to page 17-42.

Average Vehicle Counts Classification

# Average Vehicle Counts Classification

The Average Vehicle Counts Classification report shows the raw numbers of vehicles counted of each type, during each hour of the day, and averages them. If multiple days are included in the report, the multi-day values are added together. For information about the Group/Device and Resolution options, refer to page 17-42.

Configurable F	Report Options						
Start Date:	08/01/2012	En	d Date: 08/1	2/2012			View Report
Group/Device:	N Cascade @ E Platte - SB	▼ Re	solution: 1 He	our 🔻	[		· · ·
	,		1				
	of 8 🕨 🎽   🗧 🛞 🚱   🌧 🔲 💷 🖳		•	Find Nex	đ		
Averag	je Vehicle Counts (	Classifi	ication I	Report			
Group/Device:	N Cascade @ E Platte - SB						
Resolution:	1 Hour des						
Run Date:	8/13/2012 1:09:50 PM						
Date Range:	8/1/2012-8/12/2012						
Time	Detector Description	A	В	С	D	E	Average Vehicles
00:00 - 01:00	N Cascade Ave @ E Platte Ave - WB Phases 4 and 7 det 115 (20 Blvd and 20 Drive 2 LT L1)	489	0	0	0	0	97.8
	N Cascade Ave @ E Platte Ave - WB Phases 4 and 7 det 111 (20 Blvd and 20 Drive 2 RT L1)	414	51	0	0	0	93
	N Cascade Ave @ E Platte Ave - WB Phases 4 and 7 det 114 (20 Blvd and 20 Drive 2 Thru L1)	916	26	0	0	0	188.4
	N Cascade Ave @ E Platte Ave - WB Phases 4 and 7 det 113 (20 Blvd and 20 Drive 2 Thru L2)	1857	6	0	0	0	372.6
	N Cascade Ave @ E Platte Ave - WB Phases 4 and 7 det 112 (20 Blvd and 20 Drive 2 Thru L3)	1032	112	0	0	0	228.8
	Average:	941	39	0	0	0	196
01:00 - 02:00	N Cascade Ave @ E Platte Ave - WB Phases 4 and 7 det 115 (20 Blvd and 20 Drive 2 LT L1)	493	0	0	0	0	98.6
	N Cascade Ave @ E Platte Ave - WB Phases 4 and 7 det 111 (20 Blvd and 20 Drive 2 RT L1)	416	39	0	0	0	91
	N Cascade Ave @ E Platte Ave - WB Phases 4 and 7 det 114 (20 Blvd and 20 Drive 2 Thru L1)	901	30	0	0	0	186.2
	N Cascade Ave @ E Platte Ave - WB Phases 4 and 7 det 113 (20 Blvd and 20 Drive 2 Thru L2)	1894	3	0	0	0	379.4
	N Cascade Ave @ E Platte Ave - WB Phases 4 and 7 det 112 (20 Blvd and 20 Drive 2 Thru L3)	1049	103	0	0	0	230.4
	Average:	950	35	0	0	0	197
02:00 - 03:00	N Cascade Ave @ E Platte Ave - WB Phases 4 and 7 det 115 (20 Blvd and 20 Drive 2 LT L1)	497	0	0	0	0	99.4
	N Cascade Ave @ E Platte Ave - WB Phases 4	433	40	0		0	94.6
23:00 - 00:00	N Cascade Ave @ E Platte Ave - WB Phases 4	1639	1	0	0	0	328
20.00 - 00.00	and 7 det 113 (20 Blvd and 20 Drive 2 Thru L2)						
	N Cascade Ave @ E Platte Ave - WB Phases 4	908	94	0	0	0	200.4
	and 7 det 112 (20 Blvd and 20 Drive 2 Thru L3) Average:	819	30	0	0	0	170

The Average Vehicles column on the right shows the average for each detector for that hour. The Sub Totals rows show the average of each vehicle type for all detectors for that hour. The Average Vehicles row at the bottom shows the overall average for the entire day for each vehicle type.

Average Vehicle Volume Classification (G4/SX-300 RTMS)

## Average Vehicle Volume Classification (G4/SX-300 RTMS)

The Average Vehicle Volume Classification report is for G4 and SX-300 RTMS devices only. It shows the raw numbers of vehicles counted of each type, during each hour of the day, and averages them. If multiple days are included in the report, the multi-day values are added together.

For information about the Group/Device and Resolution options, refer to page 17-42.

Configurable R	leport Options							
Start Date:	08/20/2012		End Date:	08/20/2012				View Rep
Group/Device:	R3x SB	•	Resolution:	1 Hour	•			
	·							
4 4 1 c	of 2 🕨 🎽   🗢 🛞 🚱   🖨 🔲 💷 ج	100%	•	Find Nex	t			
Averag	e Vehicle Volume	Classif	ication	Report				
Group/Device:	R3x SB							
Resolution:	1 Hour							
Run Date:	8/27/2012 12:35:53 PM							
Date Range:	8/20/2012-8/20/2012							
Time	Detector Description	A	В	C	D	E	F	Average Vehicles/Hour
21:00 - 22:00	R38 SB det 3 (SB_3)	516	840	324	108	0	0	298
	R39 SB det 3 (SB_3)	132	1152	228	0	0	0	252
	R40 SB det 3 (SB_3)	528	1080	144	24	0	0	296
	R41 SB det 3 (SB_3)	324	1596	672	180	12	0	464
	Average:	375	1167	342	78	3	0	327.5
22:00 - 23:00	R38 SB det 3 (SB_3)	372	552	108	0	0	0	172
	R39 SB det 3 (SB_3)	144	720	168	12	0	0	174
	R40 SB det 3 (SB_3)	324	588	144	12	0	0	178
	R41 SB det 3 (SB_3)	192	732	312	48	0	0	214
	Average:	258	648	183	18	0	0	184.5
23:00 - 00:00	R38 SB det 3 (SB_3)	72	132	36	0	0	0	40
	R39 SB det 3 (SB_3)	0	96	12	0	0	0	18
	R40 SB det 3 (SB_3)	48	72	12	12	0	0	24
	R41 SB det 3 (SB_3)	12	72	36	0	0	0	20
	Average:	33	93	24	3	0	0	25.5

**Note** • For space considerations, this example shows only 3 hours of the day.

The Average Vehicles/Hour column on the right shows the average for each detector for that hour.

The Average rows show the average of each vehicle type for all detectors for that hour.

The Average Vehicles/Hour row at the bottom shows the overall average for the entire day for each vehicle type.

• Average Vehicle Volume

# Average Vehicle Volume

The Average Vehicle Volume report shows the average number of vehicles for each detector during each hour of the day. If multiple days are included in the report, the multiday values are averaged together. The report includes a data table and two graphs:

Configurable F	Report Options						
	3/1/2015 Fillmore & N Grand Vista,	Ø 4		Date: 3/31/2015 plution: 1 Hour			View Repor
<b>4 4</b> 1	of 1 🕨 🕅   🗰 🛞	0 😧   🌲 🔳 🛍	<b>I 100%</b>	•	Find   Next		
Averad	e Vehicle	Volume	Penort				
rveray	e venicie	volume	e Nepon	•			
Group/Device:	Fillmore & N Grand V	/ista, Ø 4					
Resolution:	1 Hour						
Run Date:	9/16/2015 5:59:17 P	М					
Date Range:	3/1/2015-3/31/2015						
Time	Fillmore & N Grand	Average of	Sum of Vehicle				
	Vista, Ø 4 det 101 (Fillmore & N Grand	Vista, Ø 4 det 102 (Fillmore & N Grand	Vista, Ø 4 det 103 (Fillmore & N Grand	Vista, Ø 4 det 104 (Fillmore & N Grand	Vista, Ø 4 det 105 (Fillmore & N Grand	Vehicle Averages	Averages
00:00 - 01:00	Vista, Ø 4 L5) 112	Vista, Ø 4 L4) 220	Vista, Ø 4 L3) 177	Vista, Ø 4 L2) 166	Vista, Ø 4 L1) 97	154	772
01:00 - 02:00	112	220	177	100	97	154	781
02:00 - 03:00	109	225	170	162	94	150	750
03:00 - 04:00	112	213	178	162	97	155	774
04:00 - 05:00	112	220	178	168	97	155	779
05:00 - 06:00	112	221	179	166	97	155	775
06:00 - 07:00	111	234	179	172	97	159	793
07:00 - 08:00	112	272	186	183	94	169	847
08:00 - 09:00	111	272	186	182	93	169	844
09:00 - 10:00	111	271	187	182	94	169	845
10:00 - 11:00	111	273	187	183	93	169	847
11:00 - 12:00	111	274	188	184	94	170	851
12:00 - 13:00	111	273	187	184	94	170	849
13:00 - 14:00	110	270	186	183	94	169	843
14:00 - 15:00	107	264	180	175	91	163	817
15:00 - 16:00	107	267	179	177	91	164	821
16:00 - 17:00	107	264	181	176	90	164	818
17:00 - 18:00	108	262	179	174	90	163	813
18:00 - 19:00	108	253	178	172	91	160	802
19:00 - 20:00	108	231	175	166	93	155	773
20:00 - 21:00	108	214	171	162	94	150	749
21:00 - 22:00	107	214	171	163	94	150	749
22:00 - 23:00	108	214	172	161	94	150	749
23:00 - 00:00	107	215	171	163	93	150	749
Average of Vehicl	e 110	244	179	173	94	160	

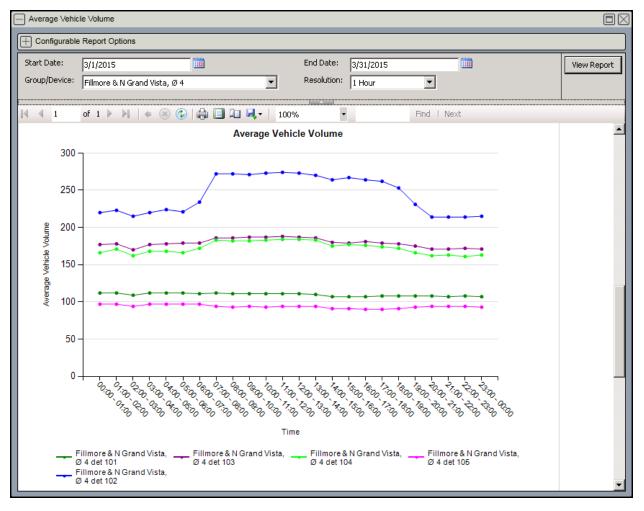
Average Vehicle Volume

The Average of Vehicle Averages column at the right shows the overall average of the row (for all detectors and all days).

The Sum of Vehicle Averages column at the right shows the overall sum of the row (for all detectors and all days).

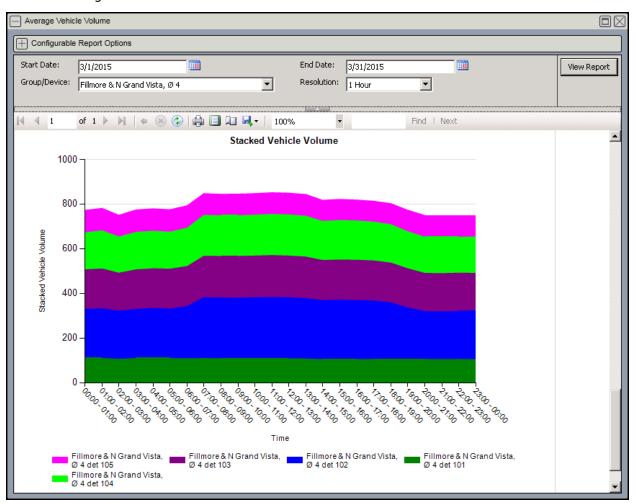
The Average of Vehicle Averages row at the bottom shows the overall average of the column (for all hours and days).





Average Vehicle Volume

Page 3



The second graph is a stacked volume graph. It is just a different presentation of the data in the Average Vehicle Volume graph. In the stacked volume example above, the combined average volume for all five detectors from 00:00-01:00 is approximately 775 vehicles. In the Average Vehicle Volume example, if you add the values for all five points at 00:00-01:00, you get the same result — approximately 775 vehicles for that hour.

For information about the Group/Device and Resolution options, refer to page 17-42.

### **Comparison Report**

The Comparison Report allows you to generate various graphs and data tables to compare Autoscope data for two different dates or for two different date ranges:

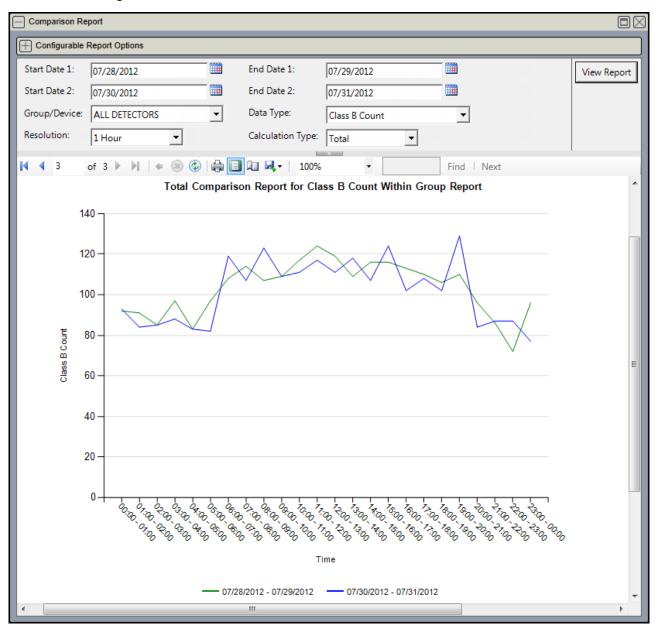
- Start/End Dates In the Start Date and End Date fields, enter the start and end dates for the two date ranges to analyze (or use the calendar pop-ups to select dates from the calendar).
- **Group/Device** Refer to page 17-42.
- Data Type Select the type of data to analyze (Average Flow Rate, Total Volume, etc.).
- **Resolution** Refer to page 17-42.
- Calculation Type Select Total or Average. For example, if you are creating a Total Volume graph with a Resolution of 1 hour, and if you select the Total option, each point on the graph represents the *sum* of all the volume counts for the entire hour; if you select the Average option, each point on the graph represents the *average* of all the volume counts for the entire hour.

Comparison Report

Comparison Report					
Configurable Report Option	IS				
Start Date 1: 07/28/2012	2	End Date 1:	07/29/2012		View Report
Start Date 2: 07/30/2012	2	End Date 2:	07/31/2012		
Group/Device: ALL DETEC	TORS		Class B Count	•	
Resolution: 1 Hour	•	Calculation Type:	Total 🔻	_	
,		_			
		🌐 🔲 🔍 -   100%		Find Next	•
Tota	I Com	parison Rep	ort for Clas	s B Count	
Group/Dev	ice: ALL DET	TECTORS			
Resolution	n: 1 Hour				
Run Date:	8/13/201	12 2:51:01 PM			
Date Rang	e 1: 7/28/201	2-7/29/2012			
Date Rang	e 2: 7/30/201	2-7/31/2012			
Т	ïme	07/30/2012 - 07/31/2012	07/28/2012 - 07/	/29/2012	
00:00	- 01:00	93	92		
01:00	- 02:00	84	91		
02:00	- 03:00	85	85		
03:00	- 04:00	88	97		
04:00	- 05:00	83	83		
05:00	- 06:00	82	97		
	- 07:00	119	108		
	- 08:00	107	114		
	- 09:00	123	107		=
	- 10:00	109	109		-
	- 11:00	111	117		
	- 12:00	117	124		
	- 13:00	111	119		
	- 14:00	118	109		
	- 15:00	107	116		
	- 16:00	124	116		
	- 17:00	102	113		
	- 19:00	102	106		
	- 20:00	129	110		
	- 21:00	84	96		
	- 22:00	87	86		
	- 23:00	87	72		
23:00	- 00:00	77	96		
Т	otal	2437	2473		
•					•

Comparison Report





Peak Hour Volume Report

### Peak Hour Volume Report

The Peak Hour Volume report allows the user to specify three blocks of time, then finds the 60-minute period within each time block that had the highest total volume.

In the sample pages below, the user specified the following blocks of time:

- 05:00 10:00 (page 1 of the report)
- 10:00 14:00 (page 2 of the report)
- 15:00 20:00 (page 3 of the report)

On page 1, the system determined that between the times of 05:00 and 10:00, the peak hour was from 08:30 to 09:30 (the non-peak hour data is shaded in green).

On page 2, the system determined that between the times of 10:00 and 14:00, the peak hour was from 11:45 to 12:45.

On page 3, the system determined that between the times of 15:00 and 20:00, the peak hour was from 15:00 to 16:00.

You can run the report for one or more devices and/or groups. The example below was run for a single group — the group name is shown in yellow. When the report runs for a group, all the detector data for the group(s) is combined, then divided into columns by Lane Type. (Lane Type is configured on the Detector Configuration window. Refer to Using the Detector Configuration Window (Autoscope) on page 17-25.) For more information about the Group/Device option, refer to page 17-42.

If you run the report for more than one day, the report shows the volumes for all days combined.

For the Entity State option, specify whether to include only active entities, only deleted entities, or both in the Group/Device dropdown.

Use the Peak Start Time fields to specify the starting hour for each block of time to analyze. Use the Peak Duration fields to specify the number of hours to include in each block of time.

If needed, you can specify overlapping periods of time. For example, to specify these blocks of time:

- 04:00 12:00
- 10:00 16:00
- **14:00 20:00**

you would enter:

Peak 1 Start Time:	04:00	-	Peak 1 Duration:	8 Hours	•
Peak 2 Start Time:	10:00	▼	Peak 2 Duration	6 Hours	•
Peak 3 Start Time:	14:00	▼	Peak 3 Duration:	6 Hours	-

Peak Hour Volume Report •

To analyze the entire day, the three Duration fields should add up to 24 hours, the Peak 1 Start Time should be 00:00, and there should be no overlapping periods of time. For example, you could set the fields like this:

Peak 1 Start Time:	00:00	•	Peak 1 Duration:	10 Hours	•
Peak 2 Start Time:	10:00	-	Peak 2 Duration	4 Hours	-
Peak 3 Start Time:	14:00	•	Peak 3 Duration:	10 Hours	-

The top of each page shows the selection criteria you used when you ran the report, plus the date and time the report was generated. The bottom of each page shows:

- **Peak Hour Volume** the sum of all vehicles during the peak hour for this lane type.
- % of Total Traffic the sum of all vehicles during the peak hour for this lane type, divided by the sum of all vehicles during the peak hour for *all* lane types.
- % of Total Traffic by Group the sum of all vehicles during the peak hour for this group/device, divided by the sum of all vehicles during the peak hour for *all* groups/ devices shown in the report. In the example above, only one group is shown, so the "% of Total Traffic by Group" is 100%.
- Peak Hour Factor (PHF) the sum of all vehicles during the peak hour for this group/ device, divided by the peak rate of flow within the hour. Peak rate of flow is the volume during the peak 15 minutes of the peak hour, multiplied by 4. The lower the PHF, the greater the variability in the flow during that hour. Urban area PHFs are typically between 0.80 and 0.98.

Peak Hour Volume Report

_ P(	eak Hour Report							
$(\pm)$	Configurable Rep	ort Options						
Sta	rt Date:	2/13/2014		End Date:	3/13/2014			View Report
Pea	ak 1 Start Time:	05:00	-	Peak 1 Duration:	5 Hours	•		
Pea	ak 2 Start Time:	10:00	•	Peak 2 Duration:	4 Hours	-		
Pea	ak 3 Start Time:	15:00	•	Peak 3 Duration:	5 Hours	•		
Ent	ity State:	Active	•	Group/Device:	RTMS - G4 001		•	
_	· ·		_					
M	🖣 1 of 3	3 🕨 🔰   🔹	· 🛞 🗘   🖨 🔲 🕮	💐 - 100%	•	Fir	nd   Next	
	Peak H	lour V	olume Rej	port				-
	Run Date:		014 4:56:51 PM					
	Group(s):	RTMS	- G4 001					
	Date Range:	2/13/2	014 - 3/13/2014					
	Peak 1 Start Ti	i <b>me:</b> 05:00						
	Duration:	5 Hour	ſS					
			RTMS - G4 001 (F	Radar G4 (Toronto))				
	Tim	e	Through	Right				
	05:00 - (	05:15	3304	1246				
	05:15-0	05:30	3082	1145				
	05:30 - (	05:45	3143	1192				
	05:45 - 0	06:00	2908	1064				
	06:00 - (	06:15	2624	903				
	06:15-0	06:30	2796	846				
	06:30 - (	06:45	3382	1030				
	06:45 - 0	07:00	4477	1481				
	07:00 - 0	07:15	4296	1388				
	07:15-0	07:30	4317	1418				
	07:30 - 0	07:45	4 <del>312</del>	1396				
	07:45 - (	08:00	4258	1387				
	08:00 - (	08:15	4 <del>20</del> 4	1388				
	08:15 - (		4 <del>32</del> 4	1 <del>515</del>				
	08:30 - (	08:45	4287	1574				
	08:45 - 0	09:00	4221	1614				
	09:00 - 0		4259	1633				
	09:15 - 0	09:30	4371	1671				
	09:30 - (		2765	1183				
	09:45-1		2579	1 <del>045</del>				
	Peak Hour Volun		17138	6492				
	% of Total Traffic		72.53%	27.47%				
	% of Total Traffic			100%				
•	Peak Hour Facto	r 		0.98				•

Peak Hour Volume Report •



Peak Hour Report					
Configurable Report Options					
art Date: 2/13/2014		End Date:	3/13/2014		View Report
eak 1 Start Time: 05:00	•	Peak 1 Duration:	5 Hours	·	
eak 2 Start Time: 10:00	•	Peak 2 Duration:	4 Hours	•	
eak 3 Start Time: 15:00	•	Peak 3 Duration:	5 Hours	•	
ntity State: Active	•	Group/Device:	RTMS - G4 001	<b>•</b>	
· ,					
4 2 of 3 🕨 🔰 🛛	= 🛞 🚱   🖨 🔲 🛍	🛃 - 📔 100%	-	Find   Next	
Peak Hour V	olume Rei	port			-
	2014 4:56:52 PM	port			
	3 - G4 001				
	2014 - 3/13/2014				
Peak 2 Start Time: 10:00					
Duration: 4 Hou					
	DTMC 04 004 //	Deduc Od (Truesta)			
		Radar G4 (Toronto))			
Time	Through	Right			
10:00 - 10:15	2472	1001			
10:15 - 10:30	2520	1084			
10:30 - 10:45	3112	1435			
10:45 - 11:00	4143	4953			
11:00 - 11:15	4043	1967			
11:15 - 11:30	4312 4366	2050			
11:30 - 11:45					
11:45 - 12:00	4394	2086			
12:15 - 12:30	4421	2178			
12:30 - 12:45	4509	1985			
12:45 - 13:00	4405	1813			
13:00 - 13:15	3963	1572			_
13:15 - 13:30	4256	1679			
13:30 - 13:45	41 <del>5</del> 5	4521			
13:45 - 14:00	4360	1646			
Peak Hour Volume	17991	8456			
% of Total Traffic	68.03%	31.97%			
% of Total Traffic by Group		100%			
Peak Hour Factor		0.96			
					Þ

Peak Hour Volume Report

_ F	Peak Hour Report							
Œ	Configurable Rep	port Options						
St	art Date:	2/13/2014		End Date:	3/13/2014			View Report
Pe	eak 1 Start Time:	05:00	•	Peak 1 Duration:	5 Hours	-		
Pe	ak 2 Start Time:	10:00	•	Peak 2 Duration:	4 Hours	-		
Pe	eak 3 Start Time:	15:00	•	Peak 3 Duration:	5 Hours	•		
Er	ntity State:	Active	-	Group/Device:	RTMS - G4 001		•	
	-							
M	4 3 of	3 🕨 🕅   🗸	• 🛞 😨   🌲 🔲 🕮	🔍 - 🕴 100%	•	Fir	nd   Next	
	Peak H	Hour V	'olume Rep	port				-
	Run Date:	4/14/2	2014 4:56:52 PM					
	Group(s):	RTMS	- G4 001					
	Date Range:	2/13/2	2014 - 3/13/2014					
	Peak 3 Start T	i <b>me:</b> 15:00						
	Duration:	5 Hou	rs					
			RTMS - G4 001 (R	adar G4 (Toronto))				
	Tin	ne	Through	Right				
	15:00 -	15:15	2715	992				
	15:15 -	15:30	2760	983				
	15:30 -	15:45	2858	1197				
	15:45 -	16:00	2801	1180				
	1600 -	16:15	2539	1 <del>072</del>				
	1615 -	16:30	2278	840				
	1630 -	16:45	2253	967				
	16,45 -	17:00	1834	880				
	17:00 -	17:15	1832	884				
	17:15 -	17:30	17 <del>50</del>	858				
	17:30 -	17:45	1893	879				
	17:45 -	18:00	2095	<del>918</del>				
	1800 -	18:15	<del>1748</del>	689				
	1815 -	18:30	2065	856				
	1830 -		1824	727				
	1845 -		1715	587				
	19:00 -		<del>1639</del>	575				
	19:15 -		4680	583				_
	19:30 -		1584	526				
	19,45 -		1508	487				
	Peak Hour Volu		11134	4352				
	% of Total Traffi		71.9%	28.1%				
	% of Total Traffi			100%				
•	Peak Hour Fact	or		0.95				<b>•</b>
لك								

### Station Report

The Station Report allows you to generate various graphs and data tables for a single date or a single date range:

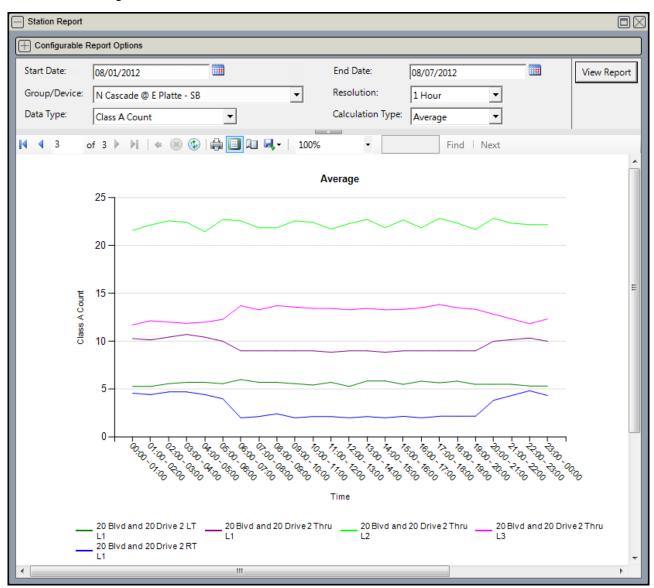
- Start/End Dates In the Start Date and End Date fields, enter the start and end dates for the date range to analyze (or use the calendar pop-ups to select dates from the calendar).
- **Group/Device** Refer to page 17-42.
- **Resolution** Refer to page 17-42.
- **Data Type** Select the type of data to analyze (Average Flow Rate, Total Volume, etc.).
- Calculation Type Select Total or Average. For example, if you are creating a Total Volume graph with a Resolution of 1 hour, and if you select the Total option, each point on the graph represents the *sum* of all the volume counts for the entire hour; if you select the Average option, each point on the graph represents the *average* of all the volume counts for the entire hour.

Station Report

Station Rep	ort							
+ Configura	ble Report O	ptions						
Start Date:	08/01/	2012		End Date	e: 08/07/20	12	View	Report
Group/Devi		cade @ E Platte - SB				-		
Data Type:		-						
Data type.	Class A	A Count	•		on Type: Average	•		_
∢ ∢ 1	of 4 🕨	🕨   🗧 🛞 🚱	🌐 🔲 🛍 🔍 -	100%	•	Find   Next		
Av	erade	e Station	Report	for Clas	s A Cou	nt		•
	-	N Cascade @ E Plat	-					
		-	16-30					- 11
Resolu		Hour						- 11
Run Da		3/13/2012 4:24:38 PI	М					
Date R	ange: 8	8/1/2012-8/7/2012						
	Time	N Cascade Ave @ E Platte Ave - WB Phases 4 and 7 det 115 (20 Blvd and 20 Drive 2 LT L1)	N Cascade Ave @ E Platte Ave - WB Phases 4 and 7 det 111 (20 Blvd and 20 Drive 2 RT L1)	N Cascade Ave @ E Platte Ave - WB Phases 4 and 7 det 114 (20 Blvd and 20 Drive 2 Thru L1)	N Cascade Ave @ E Platte Ave - WB Phases 4 and 7 det 113 (20 Blvd and 20 Drive 2 Thru L2)	Platte Ave - WB Phases 4 and 7 det	Average	
00:0	00 - 01:00	5.29	4.57	10.29	21.57	11.71	10.69	
01:0	00 - 02:00	5.29	4.43	10.14	22.14	12.14	10.83	
02:0	00 - 03:00	5.57	4.71	10.43	22.57	12	11.06	
03:0	00 - 04:00	5.71	4.71	10.71	22.43	11.86	11.09	
04:0	00 - 05:00	5.71	4.43	10.43	21.43	12	10.8	
05:0	00 - 06:00	5.57	4	10	22.71	12.29	10.91	
06:0	00 - 07:00	6	2	9	22.57	13.71	10.66	
07:0	00:80 - 00	5.71	2.14	9	21.86	13.29	10.4	
08:0	00 - 09:00	5.71	2.43	9	21.86	13.71	10.54	
09:0	00 - 10:00	5.57	2	9	22.57	13.57	10.54	
10:0	0 - 11:00	5.43	2.14	9	22.43	13.43	10.49	
11:0	0 - 12:00	5.71	2.14	8.86	21.71	13.43	10.37	
12:0	00 - 13:00	5.29	2	9	22.29	13.29	10.37	
13:0	0 - 14:00	5.86	2.14	9	22.71	13.43	10.63	
14:0	0 - 15:00	5.86	2	8.86	21.86	13.29	10.37	
15:0	00 - 16:00	5.5	2.17	9	22.67	13.33	10.53	
16:0	00 - 17:00	5.83	2	9	21.83	13.5	10.43	
17:0	0 - 18:00	5.67	2.17	9	22.83	13.83	10.7	
18:0	0 - 19:00	5.83	2.17	9	22.33	13.5	10.57	
19:0	00 - 20:00	5.5	2.17	9	21.67	13.33	10.33	
20:0	00 - 21:00	5.5	3.83	10	22.83	12.83	11	
21:0	0 - 22:00	5.5	4.33	10.17	22.33	12.33	10.93	
22:0	00 - 23:00	5.33	4.83	10.33	22.17	11.83	10.9	
23:0	00:00 - 00:00	5.33	4.33	10	22.17	12.33	10.83	
	Average:	5.6	3.08	9.51	22.23	12.92	10.67	Ŧ
•				III				•

Station Report •





Total Vehicle Counts Classification

# Total Vehicle Counts Classification

The Total Vehicle Counts Classification report shows the raw numbers of vehicles counted of each type, during each hour of the day. If multiple days are included in the report, the multi-day values are added together.

For information about the Entity State, Group/Device, and Resolution options, refer to page 17-42.

J Total Vehicle Co	unts Classification						
+ Configurable R	Report Options						
Start Date:	08/20/2012	End Date:	08/20/2012				View Repo
Entity State:	Active	Group/Device:	N Cascade @ E P	latte - SB		•	
Resolution:	1 Hour		,				
4 1 c	of 8 🕨 🎽   🗧 🛞 🕲   🖨 🔲 💷 🛤	•   100%	•	Find Nex	xt		
Total V	ehicle Counts Cla	ssificat	ion Rep	oort			
Group/Device:	N Cascade @ E Platte - SB						
Resolution:	1 Hour						
Run Date:	8/24/2012 12:46:06 PM						
Date Range:	8/20/2012-8/20/2012						
Time	Detector Description	А	В	С	D	E	Total Vehicles
00:00 - 01:00	N Cascade Ave @ E Platte Ave - WB Phases 4 and 7 det 115 (20 Blvd and 20 Drive 2 LT L1)	489	0	0	0	0	489
	N Cascade Ave @ E Platte Ave - WB Phases 4 and 7 det 111 (20 Blvd and 20 Drive 2 RT L1)	414	51	0	0	0	465
	N Cascade Ave @ E Platte Ave - WB Phases 4 and 7 det 114 (20 Blvd and 20 Drive 2 Thru L1)	916	26	0	0	0	942
	N Cascade Ave @ E Platte Ave - WB Phases 4 and 7 det 113 (20 Blvd and 20 Drive 2 Thru L2)	1857	6	0	0	0	1863
	N Cascade Ave @ E Platte Ave - WB Phases 4 and 7 det 112 (20 Blvd and 20 Drive 2 Thru L3)	1032	112	0	0	0	1144
	Sub Totals:	4708	195	0	0	0	4903
01:00 - 02:00	N Cascade Ave @ E Platte Ave - WB Phases 4 and 7 det 115 (20 Blvd and 20 Drive 2 LT L1)	493	0	0	0	0	493
	N Cascade Ave @ E Platte Ave - WB Phases 4 and 7 det 111 (20 Blvd and 20 Drive 2 RT L1)	416	39	0	0	0	455
	N Cascade Ave @ E Platte Ave - WB Phases 4 and 7 det 114 (20 Blvd and 20 Drive 2 Thru L1)	901	30	0	0	0	931
	N Cascade Ave @ E Platte Ave - WB Phases 4 and 7 det 113 (20 Blvd and 20 Drive 2 Thru L2)	1894	3	0	0	0	1897
	N Cascade Ave @ E Platte Ave - WB Phases 4 and 7 det 112 (20 Blvd and 20 Drive 2 Thru L3)	1049	103	0	0	0	1152
	Sub Totals:	4753	175	0	0	0	4928
02:00 - 03:00	N Cascade Ave @ E Platte Ave - WB Phases 4 and 7 det 115 (20 Blvd and 20 Drive 2 LT L1)	497	0	0	0	0	497
	Cascade Ave @ E Platte Ave - WB Phases 4		40	0		0	473
		-					~~~~~
23:00 - 00:00	N Cascade Ave @ E Platte Ave - WB Phases 4 and 7 det 113 (20 Blvd and 20 Drive 2 Thru L2)	1639	1	0	0	0	1640
	N Cascade Ave @ E Platte Ave - WB Phases 4 and 7 det 112 (20 Blvd and 20 Drive 2 Thru L3)	908	94	0	0	0	1002
	Sub Totals:	4095	153	0	0	0	4248
	Total Vehicles:	105621	4787	556	0	0	110964

Total Vehicle Counts Classification •

The Total Vehicles column on the right shows the overall total for each detector for that hour. The Sub Totals rows show the sum of each vehicle type for all detectors for that hour. The Total Vehicles row at the bottom shows the overall total for the entire day for each vehicle type.

• Total Vehicle Volume Classification (G4/SX-300 RTMS)

## Total Vehicle Volume Classification (G4/SX-300 RTMS)

The Total Vehicle Volume Classification report is for G4 and SX-300 RTMS devices only. It shows the raw numbers of vehicles counted of each type, during each hour of the day, and totals them. If multiple days are included in the report, the multi-day values are added together.

For information about the Entity State, Group/Device, and Resolution options, refer to page 17-42.

Configurable F	Report Options							
, 	08/07/2012	End D	ate: 08/20/2	012				View Repor
	Active	Groun	Device: R3x SB	1		•		
-		c.coh	R3X SB			-		
esolution:	1 Hour			A				
🔺 1 🛛 c	of 1 🕨 🕅   🗢 🛞 🚱   🖨 🔲	🔍 🔍 -   100'			Next			
otal V	/ehicle Volume	Classif	fication	Report				
	enicle volume	0103311	lication	Report				
oup/Device:	R3x SB							
esolution:	1 Hour							
un Date:	8/27/2012 11:41:32 AM							
ate Range:	8/7/2012-8/20/2012							
-			_		_	_	_	
Time	Detector Description		B	С	D	E	F	Total Vehicles/Hour
21:00 - 22:00	R38 SB det 3 (SB_3)	1272	1992	744	120	0	0	4128
	R39 SB det 3 (SB_3)	480	2736	540	24	0	0	3780
	R40 SB det 3 (SB_3)	1272	2112	348	72	0	0	3804
	R41 SB det 3 (SB_3)	624	2700	1044	264	24	0	4656
	Sub Totals:	3648	9540	2676	480	24	0	16368
22:00 - 23:00	R38 SB det 3 (SB_3)	444	876	144	60	0	0	1524
	R39 SB det 3 (SB_3)	240	1020	120	0	0	0	1380
	R40 SB det 3 (SB_3)	684	876	252	12	0	0	1824
	R41 SB det 3 (SB_3)	312	1020	504	132	0	0	1968
	Sub Totals:	1680	3792	1020	204	0	0	6696
	R38 SB det 3 (SB_3)	72	132	36	0	0	0	240
23:00 - 00:00	R39 SB det 3 (SB_3)	0	96	12	0	0	0	108
23:00 - 00:00				12	12	0	0	144
23:00 - 00:00	R40 SB det 3 (SB_3)	48	72					
23:00 - 00:00		48	72	36	0	0	0	120
:3:00 - 00:00	R40 SB det 3 (SB_3)			36 96	0 12	0	0	120 612

#### **Note** • For space considerations, this example shows only 3 hours of the day.

The Total Vehicles/Hour column on the right shows the total for each detector for that hour. The Sub Totals rows show the total of each vehicle type for all detectors for that hour. The Total Vehicles/Hour row at the bottom shows the overall total for the entire day for each vehicle type.

### Total Vehicle Volume

The Total Vehicle Volume report shows the total number of vehicles for each detector during each hour of the day. If multiple days are included in the report, the multi-day values are added together.

For information about the Entity State, Group/Device, and Resolution options, refer to page 17-42.

For the Excel Export option, if you select the "Entire Report" option when exporting the data to Microsoft Excel, all of the report's headers, graphics, etc. will be exported along with the data; merged cells may exist in the output, which may affect your ability to sort, copy/paste, etc. If you select the "Data Table Only" option, only the main data table of the report will be exported, and no merged cells should appear in the output.

The report includes a data table and two graphs, as shown below.

Total Vehicle Volume

Page 1

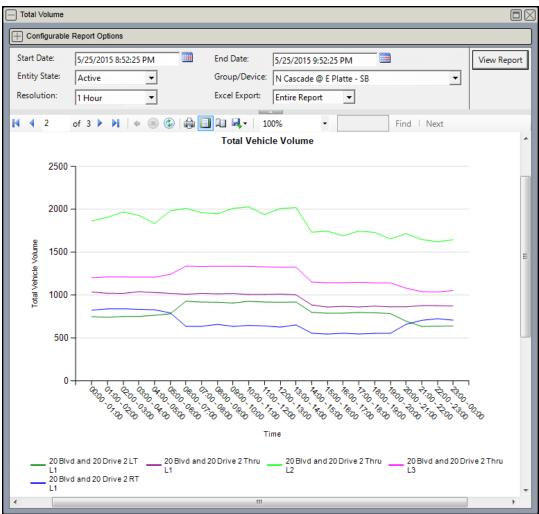
Configurable R	eport Options					
tart Date:	5/25/2015 8:52:25 PM	End I	Date: 5/25/201	15 9:52:25 PM		View Repo
	Active 👻	Grou	p/Device: N Casca			↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓
	1 Hour		Export: Entire R			
ļ	Hour _					
4 1 o	f 3 🕨 🎽   🖨 🛞	لله 🕒 🖨 🕲	🔍 - 🕴 100%	-	Find   Next	
otal V	ehicle Vo	olume Re	eport			
	N Cascade @ E Plat	te - SB				
esolution:	1 Hour					
un Date:	5/25/2015 9:52:44 P	м				
ate Range:	5/25/2015 8:52:25 P	M-5/25/2015 9:52:2	5 PM			
Time				N Cascade Ave @ E		Total Vehicle
	Platte Ave - WB Phases 4 and 7 det	Platte Ave - WB Phases 4 and 7 det	Platte Ave - WB Phases 4 and 7 det	Platte Ave - WB Phases 4 and 7 det	Platte Ave - WB Phases 4 and 7 det	Volume
	115 (20 Blvd and 20 Drive 2 LT L1)	111 (20 Blvd and 20 Drive 2 RT L1)	114 (20 Blvd and 20 Drive 2 Thru L1)	113 (20 Blvd and 20 Drive 2 Thru L2)	112 (20 Blvd and 20 Drive 2 Thru L3)	
00:00 - 01:00	750	826	1037	1865	1204	5682
01:00 - 02:00	743	840	1022	1907	1212	5724
02:00 - 03:00	751	842	1021	1970	1212	5796
03:00 - 04:00	753	835	1041	1930	1210	5769
04:00 - 05:00	766	830	1031	1834	1210	5671
05:00 - 06:00	783	794	1021	1984	1243	5825
06:00 - 07:00	930	636	1011	2011	1339	5927
07:00 - 08:00	919	637	1021	1962	1335	5874
08:00 - 09:00	918	660	1016	1948	1338	5880
09:00 - 10:00	909	636	1020	2012	1338	5915
10:00 - 11:00	929	648	1008	2029	1337	5951
11:00 - 12:00	920	642	1009	1939	1330	5840
12:00 - 13:00	917	628	1013	2010	1326	5894
13:00 - 14:00	920	654	1004	2022	1327	5927
14:00 - 15:00	800	557	886	1734	1154	5131
15:00 - 16:00	790	547	862	1746	1145	5090
16:00 - 17:00	791	557	870	1693	1145	5056
17:00 - 18:00	799	548	863	1748	1151	5109
18:00 - 19:00	795	555	873	1731	1144	5098
19:00 - 20:00	786	555	864	1656	1143	5004
20:00 - 21:00	697	661	865	1718	1082	5023
21:00 - 22:00	636	707	878	1649	1041	4911
22:00 - 23:00	639	726	878	1622	1037	4902
23:00 - 00:00	642	709	874	1647	1054	4926
Total Vehicle	19283	16230	22988	44367	29057	131925

The Total Vehicle Volume column at the right shows the overall sum for this hour (for all detectors and all days).

The Total Vehicle Volume row at the bottom shows the overall sum for this detector (for all hours and days).

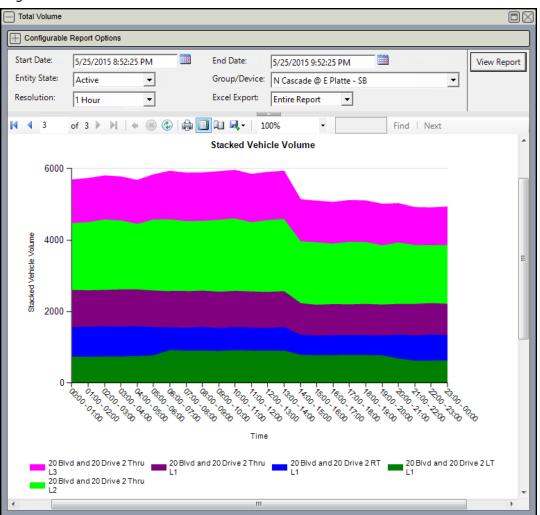
Total Vehicle Volume





Total Vehicle Volume





The second graph is a stacked volume graph. It is just a different presentation of the data in the Total Vehicle Volume graph. In the stacked volume example above, the combined volume for all five detectors from 13:00-14:00 is approximately 6000 vehicles. In the Total Vehicle Volume example, if you add the values for all five points at 13:00-14:00, you get the same result — approximately 6000 vehicles for that hour.

# **Using Centracs Adaptive**

# Introduction

If you have a license key from Econolite for the Adaptive module of Centracs, you can configure the system to automatically respond to changing traffic conditions by adjusting offsets and splits on the signal controllers. Adaptive operates in real time to reduce congestion and improve travel time by intelligently distributing green time for all traffic movements. You can configure multiple Adaptive algorithms, with each one controlling a different corridor of intersections.

Because you can use the Centracs scheduler to turn Adaptive on and off, you can configure Adaptive to run at specific times of the day, on specific days of the week, for specific date ranges, etc. This gives you flexibility in your operations. For example, agencies that use the Traffic Responsive (TR) module typically choose to run Adaptive whenever TR is running. Some agencies choose to run Adaptive around the clock, while others choose to run Adaptive only during times of coordination.

You can run multiple algorithms at one time, but you must be sure that no intersections are under the control of more than one active algorithm.

Because Adaptive only modifies splits and offsets, scheduled pattern changes (as specified by the Centracs scheduler or the controller time-of-day schedule) will still occur while Adaptive is running.

Controller Configuration Requirements for Using Adaptive

# Controller Configuration Requirements for Using Adaptive

The options below must be programmed in the signal controllers in order to use Centracs Adaptive effectively.

**Note** • In this chapter, the expressions "(MM-*n*1-*n*2)" refer to the navigation in an ASC/3 or Cobalt controller, where MM = Main Menu and *n*1 and *n*2 are menu numbers.

#### COORD OPTIONS (MM-3-1)

- ECPI Coord must be enabled
- Offset Reference must be Lead, Lag, or Ring 1
- Splits In must be Seconds (not Percent)
- Offsets In must be Seconds (not Percent)
- Transition must be Smooth
- System Format must be PTN
- Max Select should be Max Inhibit (recommended)
- Ped Reservice must be disabled

#### COORDINATOR PATTERN (MM-3-2)

- At least one coordination pattern must be configured
- Sequence must be from 1 to 16
- Actuated Coordination must be disabled
- Timing Plan must be 1
- Cycle length must be the same for all controllers in an algorithm

#### CLOCK/CALENDAR (MM-5-1)

Sync Reference Time must be the same for all controllers in an algorithm

#### OTHER

- Overlaps are not supported
- TSP is not supported
- Rings 3 and 4 are not supported
- Detector diagnostics must be configured on the controllers in order to show detector status information in Adaptive
- On the Vehicle Detector Phase Assignment screen (MM-6-1), Adaptive only considers the PH column, not the other phase call columns

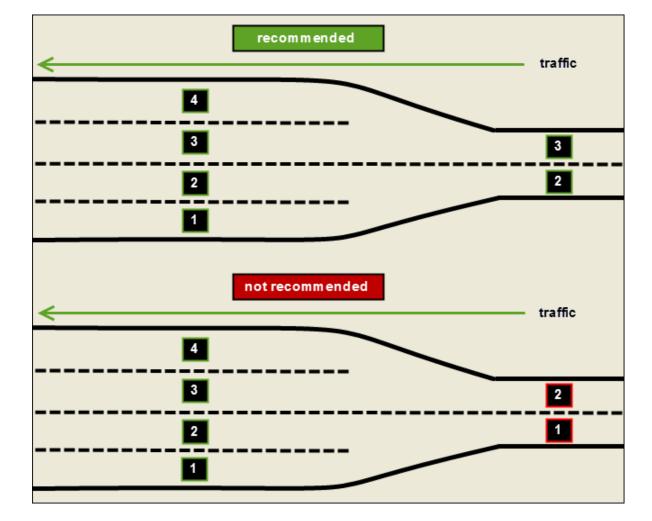
Tips for Configuring Your Detectors •

# Tips for Configuring Your Detectors

### **Detector Placement**

Good detection on all approaches to the intersection is critical to the successful operation of Adaptive. General recommendations for detector placement are:

- Put stop bar detectors in every lane, both main and side streets.
- Put advance detectors (also known as upstream or midblock detectors) on main streets. Advance detectors are needed for calculating offset adjustments.
- Advanced detection is most effective at the nearest point to the stop bar where traffic is still reliably in free flow. For example, maximum queues on most roadways may extend 200 feet or more. A detector placed at 250 feet might be adequate for low flow intersections. However, if queues extend to 350 feet during peak hours, the detector should be placed further upstream beyond the end of the standing queue.
- All should be presence detectors.



### Numbering Your Detectors

Monitoring Adaptive-Related Events

### Monitoring Adaptive-Related Events

When Adaptive sends adjustments to a controller, Centracs keeps a log of these "events". You can then view this event activity in the System Events report. Optionally, you can also configure alerts for the Adaptive events so you can be notified automatically when they occur (for instructions, refer to *Using Triggers* on page 4-25). For a list of all the Adaptive-related events, refer to *Event Types* on page 4-4.

### Running Adaptive with Traffic Responsive and BlueTOAD

The Adaptive, Traffic Responsive (TR), and BlueTOAD modules can all run at the same time, but please note the following considerations:

When TR sends a pattern to a signal:

- The signal goes into transition (up to 3 cycles)
- Adaptive is interrupted during this period
- BlueTOAD continues uninterrupted

When BlueTOAD sends a pattern to a signal:

- The signal goes into transition (up to 3 cycles)
- TR continues uninterrupted
- Adaptive is interrupted during this period

When Adaptive adjust splits/offsets:

- The signal goes into transition (up to 3 cycles for offset changes only)
- TR continues uninterrupted
- BlueTOAD continues uninterrupted

Configuring an Adaptive Algorithm •

# **Configuring an Adaptive Algorithm**

#### To add a traffic algorithm:

1 From the main menu, select **Configuration > Traffic Algorithms**.

0	Traffic Algorithms									
P	Manage algorithm configuration (such as Traffic Responsive) for Sections									
+ ≻ 😥 × ↔ 📟 📮										
	Name		Algorithm	Entity	Configuration State	•		_		
								Close		
								Close		

2 Click the Add Algorithm icon 🛨. The Algorithm Configuration window opens.

$\Box$	Algorithm Configuration									
Specify a name and type for the algorithm, and select one or entities to include in the calculations										
	Name									
	Type Traffic Responsive (Threshold)									
E	Entities	Ŀ								
L										
		OK Cance								

- **3** Enter a name for the algorithm.
- 4 From the Type dropdown list, specify Centracs Adaptive.
- In the Entities field, click is to select one or more Sections, Subsections, or Groups from the Entity Selection window. For details, refer to Using the Entity Selection Window on page 3-18. An algorithm can contain a maximum of 32 signals.
- 6 Click OK.

Configuring an Adaptive Algorithm

The new algorithm is shown in the table with a Configuration State of "Not Configured".

Traffic Algorithms										
Manage algorithm configuration (such as Traffic Responsive) for Sections										
Name	Algorithm	Entity	Configuration State							
Woodmen Rd Corridor Traffic Responsive (Threshold) 👫 Woodmen Rd Not Configured										
				Close						

7 Select the new algorithm in the table and click the Configure Algorithm icon *Link*, or right-click the algorithm and select the **Configure...** option. The Adaptive Controller Settings window opens. For details about this window, refer to *Configuring Adaptive Controller Settings* on page 18-8.

After you have completed the configuration screens, the algorithm is shown in the Traffic Algorithms table with a Configuration State of "Complete":

Traffic Algorithms									
Manage algorithm configuration (such as Traffic Responsive) for Sections									
Name	Algorithm	Entity	Configuration State						
Woodmen Rd Corridor	Complete								
				Close					

**Note** • As an alternative to the icons, you can right-click a row in this table to show a popup menu with options to edit, monitor, configure, and delete the algorithm.

#### To copy an existing traffic algorithm:

1 From the main menu, select **Configuration ▶ Traffic Algorithms...** 

Traffic Algorithms										
Manage algorithm configuration (such as Traffic Responsive) for Sections										
i + ≻ 18 × 4										
Name	Algorithm	Entity	Configuration State	_						
Woodmen Rd Corridor	Traffic Responsive (Threshold)	👬 Woodmen Rd	Complete							

- Configuring an Adaptive Algorithm
- 2 Select the algorithm you want to copy.
- 3 Click the Copy Algorithm icon 📘.
- 4 The Algorithm Configuration window opens, where you can enter a name for the copy. You can also add or remove entities, if needed, but you cannot change the algorithm type.
- 5 Click OK.

The new algorithm copy is shown in the table, and includes all the same configuration settings as the original algorithm you copied.

Configuring Adaptive Controller Settings

# **Configuring Adaptive Controller Settings**

Before you configure these screens, refer to *Controller Configuration Requirements for Using Adaptive* on page 18-2 and *Tips for Configuring Your Detectors* on page 18-3.

#### To configure the algorithm you created:

- 1 Verify that Centracs has good comms to the controllers.
- 2 Click from the Traffic Algorithms window (see page 18-5) to open the Adaptive Controller Settings window.

**Note** • If a signal controller is involved in more than one Adaptive algorithm (for example, for different times of the day), you only need to configure the controller settings one time. Any subsequent changes to the controller settings are automatically applied to all algorithms that contain that signal.

**IMPORTANT** • Some controller settings should not be changed while the algorithm is running. Therefore, it is good practice to disable the algorithm for the controller before making any changes. If the controller belongs to more than one algorithm, disable them all before changing the controller settings. To enable or disable an algorithm, use the Controller Enabled checkbox shown below.

- **3** On the Configuration tab, configure the settings for each of the signals in the algorithm. For details about the Configuration tab, refer to page 18-9.
- 4 Click Apply to save your changes.
- 5 Click Upload to load the detector/pattern/phase/etc. settings from each controller.

After the upload is complete, Adaptive goes into Validation mode to validate all the settings and coordination patterns.

- 6 Click the Patterns tab and verify that the Valid checkbox is enabled for all patterns that were uploaded from the controllers. If the Validation Message column shows anything other than "Pattern validated," you should correct these issues before proceeding. For more information, refer to page 18-13.
- 7 Configure the Detectors tab (page 18-18).
- 8 Configure the Adaptive Runtime Refiner window (page 18-22).
- 9 Configure the Adaptive Links window (page 18-24).
- **10** Configure the Link Detail window (page 18-26).

Once the algorithm is completely configured, you are ready to run it. Refer to *Running an Adaptive Algorithm* on page 18-27.

Configuration tab

# Configuration tab

Centracs Adaptive Controller Settings										
Algorithm Name: Annie Goolahee corridor Configuration										
Runtime Refiner										
Signal Controller 🚦 An	Signal Controller 🚦 Annie Goolahee @ Olaf Way									
Configuration Det	iectors									
Options										
Controller Enabled	Adjust Offset Oversized Peds Allowed									
Split Adjustment										
Phase 1 2 3 4 5										
Upload										
Upload Cancel										
Last Sync Time 9/										
	vnced									
	Auto DB Resync									
Unit Coord Parameters		J								
Unit Coord Parameters	s Patterns Splits Phases Phase Compatibility Ring Sequence	L								
Pattern Table Type	Patterns									
Transition Mode Smooth										
Maximum Mode Max Inhibit										
Force Mode Floating										
Offset Reference Point	Start Lead Green									
		Close								
		Close								

For details about the Runtime Refiner option, refer to page 18-22. For details about the Links option, refer to page 18-24.

### Field Descriptions

Field	Description					
Signal Controller	Select the controller to view or update.					
Controller Enabled	Can be used to temporarily turn off a single signal in the algorithm so you can make configuration changes. The algorithm continues to run for the other signals that are members of the algorithm. To start polling the controller for data again, enable the checkbox.					

Configuration tab

Field	Description
Adjust Offset	Allows Adaptive to send offset adjustments to this signal. If you do not have advance/mid-block detectors, turn this option off. You may also choose to turn this option off for signals that are shared by two crossing corridors, or for intersections that are very close together and do not need offset adjustments
Oversized Peds Allowed	<b>Note</b> • This option should be used sparingly. Leave this option turned off for intersections with high pedestrian traffic.
	An infrequently used pedestrian crossing that is concurrent with a minor vehicle phase may have a time that exceeds the phase split. For example, phase 8 may have a programmed split time of 15 seconds but have an actuated pedestrian crossing that uses a total of 30 seconds. When the actuated pedestrian timing exceeds the split time for a phase (that is, when Walk time + Ped Clearance time + Yellow time + Red Clearance time is greater than the Split time), this is referred to as an "Oversized Ped". To allow for this type of situation, you can turn on the Oversized Peds Allowed option. However, it is important to note that the signal goes into transition after a ped call is served. Because Centracs Adaptive operates best when signals are in coordination, multiple transitions can interfere with optimal Adaptive performance. If the Oversized Peds Allowed option is turned off, the pedestrian timing must be configured to fit within the split time specified for the phase. In general, this is the recommended configuration for optimal Adaptive operation.
	Oversized Peds Allowed feature cannot be used with the Ped Recall function.
Split Adjustment	Only shows checkboxes for the phases that are in use (i.e., that have a cycle time greater than zero); all others are hidden. Turn on the Timing checkbox for each phase that you want Adaptive to adjust. Turn on the Biasing checkbox for higher priority phases; then if the intersection has less than 85% saturation, Adaptive will give a higher proportion of the available green time to the biased phases. As a general rule, you should enable all the Timing checkboxes, and you should enable the Biasing checkboxes only for the coord phases or even/thru phases.
Upload	Click this button to load the detector/pattern/phase/etc. settings from the controller. You must do this when you originally set up a controller in Adaptive, or when the settings on the controller have changed.
Last Sync Time	The date and time of the last successful upload from the controller.

Unit Coord Parameters tab

Field	Description					
DB Sync Status	Shows "Synced" or "Not Synced".					
	The controller database in Adaptive is considered to be "Synced" when it has the same database as the controller in the field. When you upload the database from the controller using the Upload button, a version number is also uploaded, both at the start and the end of the upload. The controller increments the version number whenever a change occurs to the database. If a change happens during the upload, then the version number at the end of the upload will be different than the version at the start of the upload, so the upload will automatically be restarted. Then, each time Centracs polls the controller for signal timing status, the database version number is verified again. If the version number reported by the controller no longer matches the version number of the controller database in Adaptive, the DB Sync Status changes to "Not Synced".					
	<b>Note</b> • Each time Adaptive starts up, it assumes all controllers are out of sync.					
Auto DB Resync	When Adaptive is in Monitoring or Control mode, if the Centracs Adaptive database gets out of sync with the controller database, Adaptive uploads from the controller automatically.					

The top right corner of the window shows the mode the algorithm is currently in: Initialization, Configuration, Validation, Monitoring, Analysis, Control, Inactive, Synchronization, or Shutdown. If the algorithm is in Monitoring, Analysis, or Control mode when you make a configuration change, the algorithm automatically changes to Configuration mode, then to Validation mode. If your changes are successfully validated, the algorithm returns to its prior mode.

### Unit Coord Parameters tab

This tab shows the coordination options that were loaded from the controller (MM-3-1). This tab is display-only.

Field	Description
Pattern Table Type	The selection method for coordinated patterns. For compatibility with Adaptive, this must be set to Patterns (i.e., SYSTEM FORMAT=PTN on the controller).
Transition Mode	The transition method to attain coordination. For compatibility with Adaptive, this must be set to Smooth.

### Field Descriptions

Unit Coord Parameters tab

Field	Description				
Maximum Mode	The Max Select setting from the controller. Max Inhibit is recommended.				
Force Mode	The force-off method to terminate a phase (Floating or Fixed).				
Offset Reference Point	For compatibility with Adaptive, this must be set to Lead. The start of the first coordinated phase green is used as the reference point when calculating offsets.				

# Patterns tab

This tab shows the patterns that were loaded from the controller (MM-3-2), and whether or not the settings for each pattern are valid. This tab is display-only.

1	Unit Coord Parameters Patterns				Splits	Phase	s Phase Compatib	ility	Ring Sequence	
	Show Un									Show Unused
	Pattern	Cycle	Offset	Sequence Number	Split ID	Valid	Validation Message			
	1	90	5	1	1		Pattern validated.			
	2	100	35	1	2	•	Pattern validated.			
	3	110	0	2	3	-	Pattern validated.			
	4	120	0	2	4	L	Pattern validated.			
	5	130	0	3	5		Pattern validated.			
Ľ										
	Close									

### Field Descriptions

Field	Description					
Show Unused	If turned on, patterns with a cycle time of zero are shown in the list; if turned off, patterns with a cycle time of zero are hidden.					
Valid	If the pattern cannot be validated (for example, if the cycle time is zero), the controller will not "adapt" when that pattern is active.					

Splits tab

Field	Description					
Validation Message	If the pattern cannot be validated, this column explains why.					
	Examples:					
	<ul><li>"The configured pattern table type is not supported."</li></ul>					
	Verify that your controller settings match those listed in <i>Controller Configuration Requirements for Using</i> <i>Adaptive</i> on page 18-2.					
	<ul> <li>"The Phase {x} split green time is too short for ped walk and clearance times."</li> </ul>					
	You may need to consider using the Oversized Peds Allowed option.					
	<ul> <li>"Ring 1 has a shorter duration between barriers b and a than other rings."</li> </ul>					
	Compatible phases are not terminating together. Check phase 1+2 timing versus phase 5+6 timing.					
	<ul> <li>"Ring 2 has a shorter duration between barriers b and a than other rings."</li> </ul>					
	Compatible phases are not terminating together. Check phase 3+4 timing versus phase 7+8 timing.					

# Splits tab

This tab shows the split settings that were loaded from the controller (MM-3-3). This tab is display-only. Use the Split Number dropdown list to show the settings for other splits.

Unit Coord	Paran	neters	F	attern	s	Splits	F	hases	;	Phase	Comp	patibilit	ty 🛛	Ring	Seque	nce	
Split Number	: 1	•															
Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	
Time	15	30	15	30	15	30	15	30	0	0	0	0	0	0	0	0	
Mode	None	None	None	None	None	None	None	None	Omit	Omit	Omit	Omit	Omit	Omit	Omit	Omit	
CoordPhase	False	True	False	False	False	True	False	False	False	False	False	False	False	False	False	False	

# Phase tab

This tab shows the timing plan settings that were loaded from the controller (MM-2-1). This tab is display-only.

Unit Coord Parameter	s Pat	terns	Splits	Phase	Phase Cor	mpatibility	Ring Se	equence	
								Show	Disabled Phas
Phase	1	2	3	4	5	6	7	8	
Enabled	Х	Х	Х	Х	Х	Х	Х	Х	
Ring	1	1	1	1	2	2	2	2	
Min Green	5	5	5	5	5	5	5	5	
Max 1	35	35	35	35	35	35	35	35	
Max 2	40	40	40	40	40	40	40	40	
Yellow	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Red Clearance	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
Clearance	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Min Active (No Ped)	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	
Min Active (with Ped)	9.0	30.0	9.0	30.0	9.0	30.0	9.0	30.0	
Walk	0	10	0	10	0	10	0	10	
Pedestrian Clearance	0	16	0	16	0	16	0	16	
Added Initial	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Maximum Initial	0	0	0	0	0	0	0	0	
Passage	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Min Gap	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Time Before Reduction	0	0	0	0	0	0	0	0	
Cars Before Reduction	0	0	0	0	0	0	0	0	
Time to Reduce	0	0	0	0	0	0	0	0	
Min Recall									
Max Recall									
Ped Recall				- 20	1		1		

**Note** • Only Timing Plan 1 can be used with Adaptive, so only Timing Plan 1 gets loaded from the controller.

Phase Compatibility tab

# Phase Compatibility tab

This tab shows the phase compatibility settings that were loaded from the controller (MM-1-1-2). This tab is display-only.

	nit C	oord	Para	meter	rs	Pa	tterns	5	Spli	ts	Phas	es	Pha	se Co	mpatib	ility	Ring Sequence
	1	2	3	4	5	6	7	8	9	10		12		14	15		
1	1	1			X	X											
2					Х	Х											
3							Х	Х									
4							х	Х					2				
5																	
6																	
7																	
8																	
9											Х	Х					
10	<u> </u>							- 3			Х	Х	<u>,</u>				
11	<u> </u>																
12	<u> </u>									_	_			_			
13	_														Х	Х	
14	<u> </u>			-											X	Х	
15	_																
16													2				
																	Close

# Ring Sequence tab

This tab shows the ring sequence settings that were loaded from the controller (MM-1-1-1). This tab is display-only.

Unit Coord Parameters	Patterns	Splits	Phases	Phase Compatibility	Ring Sequence
Sequence 1 Used Validated Ring and Barrier Diagr Sequence 1 Validated Validated Message: Sequence valid Ring: 1 1 2 3 Ring: 2 5 6 7	2 V 2	3 ✔ ✔			C Show Unused
Sequence 1					
Validated 🔽					
Message: Sequence valid	ated.				
Ring: 1         1         2         3           Ring: 2         5         6         7					
					Close



# Detectors tab

withon Ma	ma: Annia Coole	haa aarr	idor										
Igorithm Name: Annie Goolahee corridor Configuration													
Runtime I	Refiner] Links												
nal Contr	oller 🚦 Annie	Goolahee	@ Olaf Way										
		_											
Configura	ation Detecto	rs											
											_	Effective	Second Shift
tector	Description	Call Phase	Phase Utilization	Flow Profiling	Upstream Controller	Downstream Controller		Distance Upstream	Detector Length	FreeFlow Speed	Time To Flow	Green Time Ext.	To Brake Point
	Call Phase(s) 1	1			🖥 Annie Goolahee @ Sweet Trav 🛛 🏘	Annie Goolahee @ Olaf Way	1	0 Feet	30 Feet	30 MilesPerHr		0.0	0.0
	Call Phase(s) 2	2			👔 Annie Goolahee @ Sweet Trav 🛛 🗌	Annie Goolahee @ Olaf Way	11	0 Feet	30 Feet	30 MilesPerHr	0	0.0	0.0
	Call Phase(s) 3	3			Old Bitty Ln @ Olaf Way	Annie Goolahee @ Olaf Way	1	0 Feet	30 Feet	30 MilesPerHr	0	0.0	0.0
	Call Phase(s) 4	4	<b>V</b>	<u>u</u>	Old Bitty Ln @ Olaf Way	Annie Goolahee @ Olaf Way	1	0 Feet	30 Feet	30 MilesPerHr	0	0.0	0.0
	Call Phase(s) 5	5			🛔 Annie Goolahee @ Tofutti Klein Ave 🐅	Annie Goolahee @ Olaf Way	1	0 Feet	30 Feet	30 MilesPerHr	0	0.0	0.0
	Call Phase(s) 6	6			🖥 Annie Goolahee @ Tofutti Klein Ave 🐅	Annie Goolahee @ Olaf Way	11	0 Feet	30 Feet	30 MilesPerHr	0	0.0	0.0
	Call Phase(s) 7	7	V		Nerf Bat Ln @ Olaf Way	Annie Goolahee @ Olaf Way	1	0 Feet	30 Feet	30 MilesPerHr	0	0.0	0.0
	Call Phase(s) 8	8	<b>N</b>	<b>v</b>	Nerf Bat Ln @ Olaf Way	Annie Goolahee @ Olaf Way	1	0 Feet	30 Feet	30 MilesPerHr	0	0.0	0.0
	Call Phase(s) 9	9			Not Specified.	Annie Goolahee @ Olaf Way	1	5 Feet	30 Feet	0 MilesPerHr	0	0.0	0.0
	Call Phase(s) 10	10			Not Specified.	Annie Goolahee @ Olaf Way	11	5 Feet	30 Feet	0 MilesPerHr	0	0.0	0.0
	0.11.01		-	-	Mak Cassified					A 441			

# Field Descriptions

Field	Description
Detector Number	This information is loaded from the controller.
Description	Enter descriptive information about this detector. It is recommended that you use a consistent description format for all detectors. Examples:
	<b>SB 6 R</b> (where <i>SB</i> is the direction, <i>6</i> is the lane number, and <i>R</i> indicates it is a right-turn lane)
	<b>NB 5 T</b> (where <i>NB</i> is the direction, <i>5</i> is the lane number, and <i>T</i> indicates it is a thru lane)
	<b>EB M3</b> (where <i>EB</i> is the direction and <i>M3</i> indicates a midblock detector in lane 3)
	(The Description you enter here will also update this detector in the Entity Tree, the Entity Configuration window, and the Detector Configuration window.)
Call Phase	The assigned phase is loaded from the controller.
Phase Utilization	Turn on this option if this is a stop bar detector, and if you want it to be "adapted".

Field	Description
Flow Profiling	Turn on this option if this is an advance detector, and if you want it to be "adapted". Advance/mid-block detectors are behind the queue and detect the point in the cycle when the vehicles are arriving. (If you are using stop bar detectors as flow profile detectors, turn on <i>both</i> the Phase Utilization <i>and</i> Flow Profiling checkboxes.)
Upstream Controller	Select the upstream controller for vehicles traveling this phase. Like water, traffic flows from "upstream" to "downstream". The "upstream" controller is <i>behind</i> the cars traveling this phase. This field is optional, and for Phase Utilization (stop bar) detectors, this field is ignored.
	<b>Note</b> • If green and red arrows are shown to the right of the controller name, this means the controller is a member of this algorithm.
Downstream Controller	This defaults to the currently selected signal. This should only be changed for exit detectors. A detector's "downstream" controller is <i>ahead</i> of the cars traveling this phase.
	<b>Note</b> • If green and red arrows are shown to the right of the controller name, this means the controller is a member of this algorithm.

Field	Description					
Distance Upstream	The setback distance between the stop bar and the trailing/ downstream edge of the detector. (The diagram below shows the trailing edge versus the leading edge.) This number must be greater than or equal to 0. For a stop bar detector, enter 0.					
	trailing edge					
Detector Length	The length of the loop detector or detection zone. To change the value, double-click it and type the new value. One of these units must be included: feet or ft, miles or mi, meters or m, kilometers or km. For example, "6 ft" or "1.8 m".					
FreeFlow Speed	For thru lanes, it is recommended to use the posted speed limit. For turn lanes, an approximation must be made. For example, you might use 17 mph for left turns and 13 mph for right turns.					
Time to Flow	This field is calculated by the system, and is only for advance detectors. This is the approximate number of seconds it takes traffic to clear off this upstream detector once the light turns green.					

Field	Description
Effective Green Time Ext.	This field is calculated by the system based on the configured Free Flow Speed. This is the approximate number of seconds between the start of yellow and the clearance of the last car over the stop bar. You should set your yellow time to be slightly higher than this number.
Second Shift to Brake Point	This field is calculated by the system. This is the amount of time (in seconds) between a vehicle's arrival at a detector and the time the driver must decide whether to brake for the downstream signal.

**Note** • When an Adaptive traffic algorithm has been fully configured, Adaptive does *not* automatically send adjustments to the field controllers based on its calculations. You must enable Adaptive control via the scheduler or a manual command. You can schedule Adaptive control to run continuously, or only at specified times of the day, week, month, etc. Refer to *Running an Adaptive Algorithm* on page 18-27.

Adaptive Runtime Refiner

# Adaptive Runtime Refiner

To open the Adaptive Runtime Refiner window, click **Runtime Refiner** on the Adaptive Controller Settings window.

Centracs Adaptive Runtime Refiner							
Algorithm Name: Garden of the Gods corridor							
Max Offset Increment (secs)	2 💌						
Max Offset Deviation (secs)	12 💌						
Max Split Increment (secs)	Unbounded 💌						
Max Split Deviation (secs)	Unbounded 💌						
Adjustment Interval (mins)	5 💌						
	OK Cancel						

### Field Descriptions

Field	Description
Max Offset Increment	The maximum adjustment Centracs will make to the offset at one time, in seconds. <i>Recommended value:</i> 6.
Max Offset Deviation	The maximum number of seconds the adjusted offset can deviate from the original value. For example, if the original offset is 10, and if the Max Offset Deviation is 12, Centracs can adjust the offset to as high as 22 or as low as -2. <i>Recommended value:</i> 12 (when running in Control mode) or Unbounded (when running in Analysis mode).
Max Split Increment	The maximum adjustment Centracs will make to the split at one time, in seconds. <i>Recommended value:</i> Unbounded (i.e., no limit).
Max Split Deviation	The maximum number of seconds the adjusted split can deviate from the original value. For example, if the original split is 15, and if the Max Split Deviation is 20, Centracs can adjust the split to as high as 35 or as low as -5. <i>Recommended value:</i> Unbounded (i.e., no limit).

Adaptive Runtime Refiner •

Field	Description
Adjustment Interval	The number of minutes between calculations/adjustments (5, 7.5, or 10). The lowest allowable value is 5 because it can take several cycles for the signals to get back into coordination after an adjustment. If your signals have long cycle lengths, you may need to use a higher Adjustment Interval. <i>Recommended value:</i> 5.
Minimum Required Cycles For Adjustment	The minimum number (1, 2, or 3) of consecutive cycles that is required before Adaptive is permitted to make adjustments to the offsets and splits on the controllers. <i>Recommended value: 3.</i>

**Note** • These values apply to all signals in the algorithm.

#### Example

If the Runtime Refiner options are set as...

```
Max Offset Increment: 4 seconds
Max Offset Deviation: 12 seconds
Max Split Increment: 4 seconds
Max Split Deviation: 12 seconds
Adjustment Interval: 5 minutes
Minimum Required Cycles For Adjustment: 3
```

...and if the original values for a signal are:

**Offset:** 10 seconds **Split:** 15 seconds

...then Centracs Adaptive attempts to make adjustments (if needed) every 5 minutes (if and only if it has at least 3 cycles of new data since the last calculation). If Adaptive determines that the Offset needs to be 15 and the Split needs to be 30, the 1st adjustment (at Time=0) will be:

**Offset:** 14 seconds **Split:** 19 seconds

The 2nd adjustment (at Time=5 minutes) will be:

**Offset:** 15 seconds **Split:** 23 seconds

The 3rd adjustment (at Time=10 minutes) will be:

**Offset:** 15 seconds **Split:** 27 seconds

#### Adaptive Links

Note that the Split will not be adjusted above 27 seconds because the Max Split Deviation is 12 seconds from the original Split value of 15 seconds (12+15=27).

### Adaptive Links

To open the Adaptive Links window, click **Links** on the Adaptive Controller Settings window.

Centrac	s Adaptive Links	
Algorithm N	lame: Annie Goolahee corridor	
Add	Edit Delete	Filter by Signal unfiltered 💌
Enabled	Upstream	Downstream
V	🚦 Annie Goolahee @ Olaf Way	Annie Goolahee @ Sweet Trav
V	🚦 Annie Goolahee @ Olaf Way	👔 Annie Goolahee @ Tofutti Klein Ave
	🚦 Annie Goolahee @ Sweet Trav	Annie Goolahee @ Olaf Way
V	🚦 Annie Goolahee @ Sweet Trav	👔 Annie Goolahee @ Bad Billy Pratt
	🚦 Annie Goolahee @ Tofutti Klein Ave	Annie Goolahee @ Olaf Way
V	Annie Goolahee @ Bad Billy Pratt	Annie Goolahee @ Sweet Trav
		Length: 500 ft Travel Speed: 35 mph Travel Time (secs): 9 OK Cancel

#### To filter the list of Links:

From the "Filter by Signal" dropdown list, select a signal. The window then hides all Links that do not have this signal as the Upstream or Downstream controller.

#### To add a new Link:

Click **Add**. The Adaptive Link Detail window opens. For further instructions, refer to *Adaptive Link Detail* on page 18-26.

#### To add a new Link in the opposite direction of an existing Link:

Right-click the Link and select **Build Complement Link**. The Adaptive Link Detail window opens. For further instructions, refer to *Adaptive Link Detail* on page 18-26.

#### To turn calculations on or off for a Link:

Turn on the "Enabled" checkbox to allow calculations for this Link, or turn it off to ignore this Link during calculations.

Adaptive Links •

#### To change an existing Link:

- 1 Highlight the Link and click **Edit**, or right-click the Link and select **Edit Link**. The Adaptive Link Detail window opens. Refer to *Adaptive Link Detail* on page 18-26.
- 2 Make your changes and click **OK** on the Link Detail window.
- 3 Click **OK** on the Adaptive Links window to save your changes.
- 4 On the Adaptive Controller Settings window, click **Apply** or **OK**. (**Apply** saves your changes and keeps the window open; **OK** saves your changes and closes the window.)

#### To remove an existing Link:

- 1 Highlight the Link and click **Delete**, or right-click the Link and select **Delete Link**.
- 2 Click OK.
- 3 On the Adaptive Controller Settings window, click **Apply** or **OK**. (**Apply** saves your changes and keeps the window open; **OK** saves your changes and closes the window.)

#### To see more information about a Link:

Highlight the Link and click Edit. The Adaptive Link Detail window opens. Refer to Adaptive Link Detail on page 18-26.

#### Or

• Hold the mouse pointer over the Link, as shown in the sample window above.

Adaptive Link Detail

# Adaptive Link Detail

To open the Link Detail window, click Links on the Adaptive Links window.

Link Detail		
Upstream		Downstream
Controller Annie Goolahee @ Sweet Trav Phase 2	Length: 500 ft Travel Speed: 35 mph Travel Time: 9 secs	Controller Annie Goolahee @ Olaf Way
	1	Configure opposite direction OK Cancel

#### To create a Link:

- 1 In the Controller dropdown lists, select the Upstream and Downstream controllers to indicate the direction of travel for this Link. Like water, traffic flows from "upstream" to "downstream". The "upstream" controller is *behind* the cars traveling this Link; the "downstream" controller is *ahead* of the cars traveling this Link.
- 2 In the Phase dropdown lists, select the upstream and downstream progression phase(s) to be analyzed for this Link.
- 3 In the Length field, enter the distance between the two controllers. This could be measured from stop bar to stop bar, from mid-block to mid-block, etc. One of these units must be included: feet or ft, meters or m. For example, "500 ft" or "152.4 m".
- 4 In the Travel Speed field, enter the free-flow speed or the speed limit for this stretch of road. One of these units must be included: mph (miles per hour) or kph (kilometers per hour).

After you enter the Length and Travel Speed, Centracs calculates the expected Travel Time for you.

- **5** Turn on the "Enabled" checkbox to allow calculations for this Link, or turn it off to ignore this Link during calculations.
- 6 To automatically create another Link for this stretch of road but in the opposite direction of travel, turn on the "Configure opposite direction" checkbox.
- 7 Click **OK** to save the Link.

If you turned on the "Configure opposite direction" checkbox, the window is shown again, but with the Upstream and Downstream controllers flipped. Select the Phases, change the Travel Speed if needed, and click **OK**.

- 8 On the Adaptive Links window, click **OK** again.
- **9** On the Adaptive Controller Settings window, click **Apply** or **OK**. (**Apply** saves your changes and keeps the window open; **OK** saves your changes and closes the window.)

# **Running an Adaptive Algorithm**

After an Adaptive traffic algorithm has been fully configured, Adaptive does not automatically send adjustments to the field controllers based on its calculations. You must enable Adaptive control via the scheduler or a manual command. You can schedule Adaptive control to run continuously, or only at specified times of the day, week, month, etc.

After a new algorithm has been configured, it is recommended that you run the algorithm for a period of time *without* sending adjustments to the controllers. Monitor the calculations, and make sure that the adjustments suggested by Adaptive are valid for the conditions at the time. If necessary, make changes to the configuration and repeat the verification. When Adaptive is making the expected adjustments, enable Adaptive to send adjustments to the controllers.

### To run an algorithm:

- 1 In the scheduler (page 7-11), add a new schedule entry and select the "Traffic Algorithm" action. (Alternatively, you can add a new manual command (page 7-8).)
- 2 The Algorithm dropdown contains a list of all the traffic algorithms that have been configured. Select the algorithm to run.
- **3** Select the mode you want the algorithm to run in:
  - Analysis calculates adjustments, but does not send them to the controllers
  - **Control** calculates adjustments and sends them to the controllers
  - Monitoring allows polling only
- 4 Set the scheduling options. For example, it may only be necessary to run the algorithm between 5AM and 10PM on weekdays. For full instructions on how to use the scheduler, see *Using the Scheduler* on page 7-11.
- 5 When the "Traffic Algorithm" action runs, the pattern selected by the most recent calculations is sent to the controllers for the associated Section, Subsection, and/or Group. When the action completes, the Adaptive-selected pattern is stopped and the controllers go back to their prior operation mode. Adaptive continues to run its calculations in the background to keep its pattern selections up-to-date.

• Running an Adaptive Algorithm

On the Signal Status display (page 6-1), when  $\bigcirc$  is shown just above the Comms section, it indicates that the intersection is currently running in Adaptive mode. For example:



Monitoring Adaptive Status •

# **Monitoring Adaptive Status**

To open the Adaptive Monitoring window:

- Click from the Traffic Algorithms window (see page 18-5).
  - Or

From the main menu, select **Monitoring > Adaptive Monitor > {algorithm name}**.

— Centracs Adaptive M	lonitoring																(	
Algorithm Name: Annie	e Goolahee con	ridor															Ana	lysis
Monitoring Logs	s																	
System Manager S	tatus																	
Command Mode	Analysis						_	✓ De	tail									
	Analysis						_											
	Analysis						_											
Controller Manage	r Status																	
Contro	oller	Com	m. Statu	s Co	ontrol Me	ode 0	Operation	al Mode	Active I	Pattern	Sync Stat	tus D	etail Stati	IS	U	pload		
Annie Goolahee @	Olaf Way	Is Re	sponding	Sys	stem Cor	ntrol (	Coordinati	on	1		Synced		Status	No	upload ir	n progres	s	
Annie Goolahee @	Tofutti Klein Ave	Is Re	sponding	sys	stem Cor	ntrol (	Coordinati	on	1		Synced		Status	No	upload ir	n progres	s	
Annie Goolahee @	Bad Billy Pratt	Is Re:	sponding	Sys	stem Cor	ntrol (	Coordinati	on	1		Synced		Status	No I	upload ir	n progres	s	
Annie Goolahee @	Sweet Trav	Is Re	sponding	Sys	stern Cor	ntrol (	Coordinati	on	1		Synced		Status	No I	upload ir	n progres	s	
Runtime Refiner St	tatuc																	-1
Current Time	18:23:20			_	-													
Last Analysis Time	18:20:00				- 11													
Next Analysis Time					- 11													
Split Decommondet	tions																	
Split Recommendat	uons											Sp	lits					
Controller		Pattern	Cycle C	ffset	1	2	3	4	5	6	7	8	9	10	11	12	13	
Annie Goolahee	@ Olaf Way	1				30 30→38	15 3 15→18	30 30→16	15 15→18	30 30→38	15 3 15→18 3	30 30→16	0 0→0	0 0→0	0 0→0	0 0→0	0 0→0	C C
Annie Goolahee @	Tofutti Klein Ave	1				30 30→44	15 ∔ 15→15	30 30→16	15 15→15	30 30→44	15 3 15→15 3	30 30→16	0 0→0	0 0→0	0 0→0	0 0→0	0 0→0	C C
Annie Goolahee @	Bad Billy Pratt	1				30 30→44	15 ∔ 15→15	30 30→16	15 15→15	30 30→44	15 3 15→15 3	30 30→16	0 0→0	0 0→0	0 0→0	0 0→0	0 0→0	C C
Annie Goolahee (	@ Sweet Trav	1	90	5 5→7	15 15→15	30 30→44	15 ∔ 15→15	30 30→16	15 15→15	30 30→44	15 3 15→15 3	30 30→16	0 0→0	0 0→0	0 0→0	0 0→0	0 0→0	C C
Annie Goolaliee (		Phase 7	7 has no	utilizat	tion dete	ctors c	onfigured,	and will	be const	trained to	o discoura	ge adju	stments	shorter	han the	baseline	setting	s.
																	Clo	se
																	_	

**Note** • The Logs tab is for troubleshooting purposes and can generally be ignored.

System Manager Status

# System Manager Status

This section of the window is refreshed once per minute. It shows general status information about the algorithm:

- Command Mode The mode the user requested via the scheduler or a manual command (Control, Analysis, or Monitoring), if applicable. If the algorithm is not scheduled, this field shows the mode the algorithm is currently in, such as Configuration or Inactive.
- Desired Mode The mode the system thinks it needs to go to. For example, if the system determines it needs to sync with the controller again, this field will show Synchronization.
- **Current Mode** The mode the algorithm is currently in.

The possible values for these Mode fields are: Initialization, Configuration, Validation, Monitoring, Analysis, Control, Inactive, Synchronization, or Shutdown.

**Note** • The Detail dropdown is used by Econolite Technical Support for troubleshooting.

# Controller Manager Status

This section of the window shows general status information about the controller:

Field	Description
Comm Status	Shows the communications status between Centracs and the controller (Not Responding or Is Responding).
Control Mode	The mode in which the controller is operating: Backup, Interconnect, Interconnect Backup, Manual, System Control, System Standby, Time Base, Unknown (in the case of no comms), or Other. (For descriptions of these modes, refer to <i>Controller</i> <i>Modes and Patterns</i> on page A-15.) If the Adaptive algorithm is running in Control mode, the Control Mode column shows "System Control".
Operational Mode	The current operation of the controller (Coordination, Free, Flash, Transition, etc.).
Active Pattern	The pattern running on the controller.
Sync Status	The controller database in Adaptive is considered to be "Synced" when it matches the controller database in the field. Each time Centracs polls the controller, this is verified again. If the databases no longer match, the Sync Status changes to "Not Synced". (Each time Adaptive starts up, it assumes all controllers are out of sync.)

Runtime Refiner Status 🔹

Field	Description
Detail Status	This button launches the Controller Status window (page 18-32).
Upload	Shows whether an upload from the controller is currently in progress.

This section of the window is refreshed once per minute; therefore, the information you see may be up to one minute old. For example, if the Operational Mode shows "Transition", it does not necessarily mean the controller was in Transition for the whole minute; it simply means the controller was in Transition at the moment it was polled by Adaptive.

# **Runtime Refiner Status**

This section of the window is updated each time the algorithm runs an analysis, as defined by the Adjustment Interval field on the Adaptive Runtime Refiner window (page 18-22). It shows details about the last analysis performed by Adaptive.

Field	Description
Last Analysis Time	The last time the algorithm ran its calculations.
Next Analysis Time	The next time the algorithm will run its calculations (as defined by the Adjustment Interval field).

If there is insufficient data to perform calculations, Adaptive will try again at the next analysis time.

### Split Recommendations

This section shows how Adaptive thinks the splits should be adjusted (in this example, the algorithm is in Analysis mode, so no changes will be sent to the controllers). For the first controller in the example shown above, Adaptive wants to make these changes:

- Change the offset from 5 to 7 seconds
- Change phase 1 and phase 5 splits from 15 to 18 seconds
- Change phase 2 and phase 6 splits from 30 to 38 seconds
- Change phase 3 and phase 7 splits from 15 to 18 seconds
- Change phase 4 and phase 8 splits from 30 to 16 seconds

In other words, time was taken away from phases 4 and 8 in order to give more time to the other phases.

Analyzing the Adaptive Data

**Note** • If you click the Status button but lose comms to the controller during the status update, the status update continues to run until you either fix the comms or disable the Controller Enabled checkbox on the Controller Settings window (on the Configuration tab, see page 18-9).

# Analyzing the Adaptive Data

To open the Adaptive Controller Status window, click **Status** from the Adaptive Monitoring window (page 18-29).

# Phase Timing tab



The Configured Pattern Timeline shows the programmed splits. The numbers shown inside the colored bars are the phase numbers. The Actual Phase Timeline shows the actual splits for the last 15 minutes. A black bar indicates no data during that time (for example, when an upload is in progress, no polling is done).

Phase Utilization tab

# Phase Utilization tab

atus Fo	DIT: 1 Annie Goolahee	@ Olaf Way												Analys
Phase T	iming Phase Utilization	Flow Profil	e Pattern Histo	ory Detectors	Archive									
Refresh														
tatus dat	a may be dated or inval	id. The syste	m is not currently po	lling for status.										
Estimated	d Controller Time: 23:47	:14 Patter	m: 1											
Phase Number	Number of Ga Observations out		Force- Omit/ offs Skips	Termination Timeline	Average Green Time (sec)	Average Green Occupancy (%)	Average Used Green (sec)	Average Available Green (sec)	Average Phase Utilization (%)	Degree of Saturation	Average Phase Demand (% time)	Min Split	Current Split	Max Split
	9 (100%) 0	0	9 (100%) 0	F,F,F,F,F,F,F,F,F	11.0	100%	11.0	11.0	100.0%		12.2%	9	15	255
<u>.</u>	9 (100%) 0 9 (100%) 0	0	9 (100%) 0 9 (100%) 0	F,F,F,F,F,F,F,F,F,F	47.0	0%	0.0	47.0 11.0	0.0%		0.0%	16	30 15	255 255
,	9 (100%) 9 (1	-	0 0	G.G.G.G.G.G.G.G.G.G.		0%	0.0	26.0	0.0%		0.0%	16	30	255
	9 (100%) 0	0	9 (100%) 0	F,F,F,F,F,F,F,F,F	11.0	100%	11.0	11.0	100.0%		12.2%	9	15	255
	9 (100%) O	0	9 (100%) 0	F,F,F,F,F,F,F,F,F	47.0	0%	0.0	47.0	0.0%		0.0%	16	30	255
	9 (100%) 0 9 (100%) 9 (1	0	9 (100%) 0 0 0	F,F,F,F,F,F,F,F,F G,G,G,G,G,G,G,G,G,G	11.0	100%	11.0	11.0 26.0	100.0%		12.2%	9	15 30	255
Ring 1 $5 \leftarrow 10 \leftarrow 3$ $5 \leftarrow 10 \leftarrow 30$ $5 \leftarrow 10 \leftarrow 30$ $10 \leftarrow 20 \leftarrow 30$ $-6 \leftarrow \Delta \rightarrow +34$ $-14 \leftarrow \Delta \rightarrow +26$ $-6 \leftarrow \Delta \rightarrow +34$ $10 \leftarrow 30 \rightarrow 56$ $05$ $06$ $07$ $08$ $05 \leftarrow \Delta \rightarrow +34$ $16 \leftarrow 30 \rightarrow 56$ $9 \leftarrow 15 \rightarrow 49$ $16 \leftarrow 20 \rightarrow +34$ $16 \leftarrow 30 \rightarrow 56$ $-6 \leftarrow \Delta \rightarrow +34$ $-6 \leftarrow \Delta \rightarrow +34$ $-14 \leftarrow \Delta \rightarrow +26$ $100 \times 5$ $-6 \leftarrow \Delta \rightarrow +34$ $-14 \leftarrow \Delta \rightarrow +26$ $100 \times 5$														
ing 1 ing 2	$b \xrightarrow{25 \leftarrow 45 \rightarrow}{25 \leftarrow 45 \rightarrow}$	+20 a 65 25 ←	$-45 \rightarrow 65$ $-\Delta \rightarrow +20$ b $-45 \rightarrow 65$			-								
arrier Gr	$\begin{array}{c} -20 \leftarrow \Delta \rightarrow \end{array}$ $\begin{array}{c} b \\ -20 \leftarrow \Delta \rightarrow \end{array}$	65 _ 25 ←	$\begin{array}{c} -\Delta \rightarrow +20 \\ -45 \rightarrow 65 \\ -\Delta \rightarrow +20 \end{array} \mathbf{b}$											_
Phase 1	76 D-1 1% 0 Term: force-off	3 D-1 100 76 D-1 1% Term: force	0%         5         3         D-1         1           0         76         D-1         1           -off         Term: ford	00%         5         3         D-1         10           %         0         76         D-1         19           e-off         Term: force	00% 5 3 6 0 76 e-off Te	D-1 100% 5 D-1 1% 0 erm: force-off	3 D-1 76 D-1 Term: fo	100%         5         3           1%         0         7           rce-off         7	B D-1 100% 6 D-1 1% Term: force-of	530 0760 f Term:	1 100% 5 1 1% 0 force-off	3 D-' 76 D-' Term: 1	1 100% 5 1 1% 0 force-off	
	47/47 0% 0 4	7/47 0%	0 47/47 0	% 0 47/47 09	6 0 47/4	7 0% 0	47/47	0% 0 47/	47 0%	0 47/47	0% 0 4	7/47	0% 0	

### Field Descriptions

Field	Description
Number of Observations	The number of cycles included in this analysis.
Gap-outs	The number of cycles that gapped out.
Max-outs	The number of cycles that maxed out.
Force-offs	The number of cycles that were forced off.
Omit/Skips	The number of cycles that were omitted/skipped.
Termination Timeline	The type of termination that occurred for each of these cycles, in chronological order: G=Gap-out, F=Force-off, M=Max-out, O=Omitted/skipped, U=Undetermined (e.g., during a preempt or during transition to Flash mode).

Phase Utilization tab

Field	Description
Average Green Time	The average length of the green time for these cycles, in seconds.
Average Used Green	The average amount of green time during which the assigned detector was actuated.
Average Phase Utilization	The ratio of the green time that was used by the phase to the green time that was available (i.e. Average Used Green divided by Average Available Green). If Average Phase Utilization is less than the Average Green Occupancy, this means it gapped out early, and did not use all of the available green time.
Degree of Saturation	A colored representation of the Average Phase Utilization, showing the demand on each phase. The bar is gray (0%), green (low), yellow (medium), or red (high) to indicate the level of saturation.
Average Phase Demand	The average amount of green time and yellow time during which the assigned detector was actuated.
Min Split	Without peds, Min Split is the larger of these three values:
	Min Green + Yellow + Red Clear
	<ul> <li>Guaranteed Min Green + Guaranteed Yellow + Guaranteed Red Clear</li> </ul>
	Max Initial + Yellow + Red Clear
	With peds, Min Split is the larger of these two values:
	<ul> <li>Walk + Ped Clear + Yellow + Red Clear (if the "Oversized Peds Allowed" option is turned off)</li> </ul>
	<ul> <li>Guaranteed Walk + Guaranteed Ped Clear + Guaranteed Yellow + Guaranteed Red Clear</li> </ul>
Current Split	The programmed split for this phase.
Max Split	If the Max Select option on the controller is set to Max Inhibit, the Max Split is 255. Otherwise, the Max Split is the maximum time that could be allocated to this phase if all other non-compatible phases are reduced to their minimums.

The ring diagrams below the table show the changes that could be made. For example,  $9 \leftarrow 15 \rightarrow 49$  means you could change the programmed split (in this case, 15) to be as high as 49 or as low as 9 (but you must adjust other phases accordingly.)

Flow Profile tab

# Flow Profile tab

Controller Stat	itus																
tatus For: 🚦	👔 Annie Goolahee @	Olaf Way															Analys
Phase Timing	g Phase	Flow Profile	Pattern History	Detectors	Archive												
	Ounzation	L						_	_	_	_	_	_	_	_	_	
Refresh	Summary																
Local Time 17	7:16:59 Available data view	_															
Detector	Available data view atistics Real-Time I																
	atistics Real-Time I																
	atistics Real-Time I																
	atistics Real-Time I																
, 56	Real-Time I	history															
Flow Pro	ofile Summary			_													
All		Link → Annie Goola	hee @ Olaf Way	Pattern 1 0	vcle 90	Inbound Offset 5	0 5 10	15 20	25 3	35	40	45 50	55	60 6	5 70	75 80	85 90
Annie Goolah	hee @ Bad Billy Pratt				,	s Percent Greens		, , , , , , , , , , , , , , , , , , ,								<b>NUMBER</b>	
Annie Goolah	hee @ Bad Billy Pratt	→ Annie Goola	hee @ Olaf Way	Detector 8 5	- 6 Sample	s Occupancy (0% Max, -3 sec shift)											
Annie Goolah	hee @ Sweet Trav	→ Annie Goola	hee @ Olaf Way	Phase 2 6	- 6 Sample	s Percent Greens											
Annie Goolah	hee @ Sweet Trav	→ Annie Goola	hee @ Olaf Way	Detector 6 5	- 6 Sample	s Occupancy (100% Max, -3 sec shift											
		Link				Outbound											
			hee @ Tofutti Klein Av			Offset 5	0 5 10	15 20	25 3	35	40	45 50	55	60 6	5 70	75 80	
	· ,		hee @ Tofutti Klein Av														
			-			s Occupancy (60% Max, 0 sec shift)		Instant								India	In Contraction
			hee @ Tofutti Klein Av hee @ Bad Billy Pratt			s Occupancy (0% Max, 0 sec shift) Offset 5	0 5 10	15 20	25 3	35	40	45 50	55	60 6	5 70	75 80	85 90
	• /		hee @ Bad Billy Pratt		,			, i i i i i i i i i i i i i i i i i i i			10	10 00	9,5				
						s Occupancy (60% Max, 0 sec shift)										la-la-l	
			hee @ Bad Billy Pratt			s Occupancy (0% Max, 0 sec shift)											
			hee @ Sweet Trav	Pattern 1 C		Offset 5	0 5 10	15 20	25 3	35	40	45 50	55	60 6	5 70	75 80	85 90
Annie Goolah	hee @ Olaf Way	→ Annie Goola	hee @ Sweet Trav	Phase 6 6	- 6 Sample	s Percent Greens											
Annie Goolah	hee @ Olaf Way	→ Annie Goola	hee @ Sweet Trav	Detector 2 5	- 6 Sample	s Occupancy (60% Max, 0 sec shift)										Indial	Infinited
Annie Goolah	hee @ Olaf Way	→ Annie Goola	hee @ Sweet Trav	Detector 4 5	- 6 Sample	s Occupancy (0% Max, 0 sec shift)											
				_													
(V	Progressed Flow veh-sec occupancy) (	Measured Flow veh-sec occupar	ncy) Flow Progresse														
Inbound	(per cycle) 4019	(per cycle)	(per cycle) 319 93														
Outbound	6300		319 93	_													
Total	10319		619 97	_													
																	Close

#### Field Descriptions

Field	Description
Progressed Flow	The number of arrivals on green.
Measured Flow	The total number of vehicles.
Percent Measured Flow Progressed	The percent of the total number of vehicles that arrived on green.

#### **Using Centracs Adaptive**

Flow Profile tab

— Controlle	r Status																
Status Fo	DIT: 🚦 Annie Goolahe	e @ Olaf Way															Analysis
Phase T	iming Phase Utilization	Flow Profile	Pattern His	story	Detectors	Archive	•										
Refresh	Summary	-															
Status dat	a may be dated or inv	alid. The system	is not currently	polling f	or status.												
Local Tim	e 23:45:41																
Detector	Available data v	views															
2	Statistics Real-Tin	me History															
4	Statistics Real-Tin	me History															
6	Statistics Real-Tin	me History															
8	Statistics Real-Til	me History															
Detec	tor 2																 
	Occupancy			_													
16:01:35	Volume	بالبالبال	بالبالبال									. Un	l,ll,	li i i		III.	
	Local cycle time	5 10	15 20	25	30	35 40	45	50	55	60	65	70	75	80	85	90	
16:00:05	Occupancy			-													
10.00.00	Local cycle time	5 10	15 20	25	30	35 40	45	50	55	60	65	70	75	80	85	90	
	Occupancy	<u> </u>	15 20	23			45										
15:58:35		_ 88 _ 88 _ 88 _															
																	Close

Pattern History tab

# Pattern History tab

tatua Carr 🕴 Annia	0	16/												Analy
itatus For: 🧯 Annie	Sooianee @ Olar	vvay				_								Anay
	ase Flow	Profile Pattern	n History Deter	ctors	Archive									
Refresh														
	d and share find. The s		- H W											
Status data may be date	d or invalid. The	system is not currei	ntiy polling for statu	s.										
Estimated Controller Tir	ne: 23:45:30													
											_		_	
									_		Splits	-	_	
		Operational Mode	Transition Method	Pattern	Adaptive	Cycle	Offset	1	2	3	4 5	6	7	8
9/21/2012 3:37:32 PM	System Control	Coordination	Smooth	1	No	90	5	15	30 1	15 3	30 15	30	15	30
9/21/2012 3:36:20 PM	System Control	Transition	Smooth	1	No	90	5	15	30 1	15 3	30 15	30	15	30
	System Control	Free	Smooth	254	No	0	0	0	0 (	0	0 0	0	0	0
9/21/2012 3:36:19 PM			Smooth	255	No	0	0	0	0 0	0	0 0	0	0	0
		Flash	Smooth											

The Pattern History table logs a row every time there is a pattern change.

#### Field Descriptions

Field	Description
Timestamp	The date and time of the pattern change.
Control Mode	The mode in which the controller was operating at the specified date/time: Backup, Interconnect, Interconnect Backup, Manual, System Control, System Standby, Time Base, or Other. (For descriptions of these modes, refer to <i>Controller Modes and Patterns</i> on page A-15.) If the Adaptive algorithm was running in Control mode at the time, the Control Mode column will show "System Control".
	The Control Mode is color-shaded if the value changed since the previous timestamp: it is shaded green if the value changed to "System Control", or red if the value changed to any other control mode.
Operational Mode	The mode of the controller (Coordination, Free, Flash, etc.). The Operational Mode is color-shaded if the value changed since the previous timestamp: green if the value changed to Coordination, or red if the value changed to any other operational mode.
Transition Method	The transition method to attain coordination (Smooth, Add, or Dwell). The Transition Method is color-shaded if the value changed since the previous timestamp: green if the value changed to Smooth/Shortway, or red if the value changed to any other Transition Method.

Detectors tab

Field	Description
Pattern	The new pattern number (254=Free, 255=Flash). The Pattern is shaded green if the value changed since the previous timestamp.
Adaptive	Indicates whether this pattern change was commanded by Adaptive.
Cycle	The actual cycle length, in seconds. The Cycle is color-shaded if the value changed since the previous timestamp: green if the value changed to a higher number, or red if the value changed to a lower number.
Offset	The amount of the offset from the reference point, in seconds. The Offset is color-shaded if the value changed since the previous timestamp: green if the value changed to a higher number, or red if the value changed to a lower number.
Splits	The actual amount of each phase split, in seconds. The Split is color-shaded if the value changed since the previous timestamp: green if the value changed to a higher number, or red if the value changed to a lower number.

# Detectors tab

	Controller	Status													
St	atus For	r: 🚦 Annie C	Goolahee	@ Olaf Way											Analysis
ſ	Phase Tin	ning Pha Utili	ise ization	Flow Profile	Pattern History	Detectors	Archive								
	Refresh					-									
S	tatus data	may be date	d or inva	lid. The system is	not currently polling	for status.									
ſ	Estimated (	Controller Tin	1e: 23:43	3:54											
															n l
	Detector	Description	Call Phase	Link				Current Status	Update Time	Minutes of Data	Minutes No Faults	Volume (Veh/Hr)	Occupancy	Utilized Occupancy	
	1		1		@ Tofutti Klein Ave- @ Olaf Way→Annie			ОК	16:03:00 16:03:00		15 15	960 2820	8 23	17 48	
н.	3		3		@ Olaf Way→Annie			OK	16:03:00		15	960	8	17	
	4		4	Annie Goolahee	@ Tofutti Klein Ave-	→Annie Goolah	ee @ Olaf Way	OK	16:03:00		15	0	0	0	
	5		5		@ Sweet Trav→Anı			OK	16:03:00		15	960	8	17	
	6		6		@ Sweet Trav→Anr			OK	16:03:00		15	2820	23	48	
	2		7		@ Bad Billy Pratt→ Ø Bad Billy Pratt→			OK OK	16:03:00 16:03:00	15 15	15 15	960 0	8 0	17 0	
	•			Annie Goolallee	e baa baly Fidu→	Annie Goolanee	, le olui Way	UK .	10.00.00	15	19			0	
	_								_	_	_				
_															
															Close

**Note** • Detector diagnostics must be configured on the controller in order to see detector status information on this window.

Archive tab

## Archive tab

Controller Status		
Status For: 🚦 Annie Goolahee @ Olaf Way		Analysis
Phase Timing Phase Utilization Flow Profile Pattern History Deter	ctors Archive	]
Refresh Save selected file		
Status data may be dated or invalid. The system is not currently polling for statu	us.	
Estimated Controller Time: 23:45:13		
	1	
Type File Name	Size Last	Nodified
Recent Poll Responses		
Annie Goolahee @ Olaf Way.VolumeOccupancyStatus.txt 23	39 Kb 9/21/2012	4:03:04 PM
Annie Goolahee @ Olaf Way.PhaseTimingStatus.txt 11	09 Kb 9/21/2012	4:03:03 PM
Detector VO		
Annie Goolahee @ Olaf Way.2012.09.21.Fri.DetectorVOData.csv 11	05 Kb 9/21/2012	4:03:04 PM
Phase Timing		
Annie Goolahee @ Olaf Way.2012.09.21.Fri.PhaseTimingData.csv	94 Kb 9/21/2012	4:03:03 PM
Pattern Parameter		
Annie Goolahee @ Olaf Way.PatternParameterData.csv	1 Kb 9/21/2012	3:38:05 PM
		Close

click an archive file to download a copy to your computer. Archive files are in .txt or .csv (comma-separated values) format. Archive files keep approximately 500k of data. When an archive file reaches that size, new data begins to overwrite the oldest data in the file.

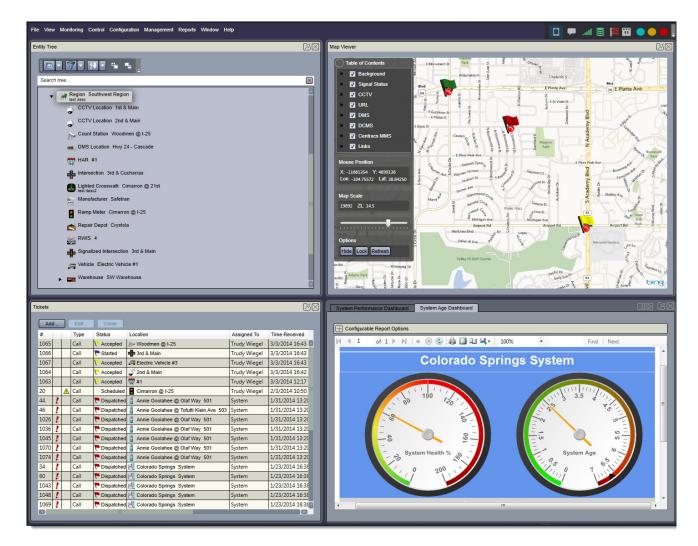


# 19

# **Managing Assets Using MMS**

# Introduction

Centracs MMS (Maintenance Management System) is an automated GIS-based system that manages and tracks ITS and signal equipment assets, trouble tickets, work orders, and preventive maintenance activities performed by technicians. It is offered as a standalone system or as an add-on module to the Centracs ATMS system or Centracs DCMS system.



Features

#### Features

- Real-time asset tracking through the entire asset life cycle
- Asset life-cycle history, including in-service time, failures, repairs, movement to another location, PM activities, depreciation, and replacement value
- User-definable asset types and properties
- User-definable Preventative Maintenance (PM) plans, activities, and schedules
- Tracking and reporting of work order and trouble ticket activity
- Dispatch scheduling and on-call notification planning
- Real-time GIS maps highlight active trouble tickets and work orders at a glance
- Location-based storage and retrieval of drawings, manuals, and other documents
- Mobile web interface for technicians to record equipment transfers, preventive maintenance activities, and trouble ticket resolution using a smart phone, tablet device, or laptop in the field
- Real-time data logging, display, archiving, reporting, and alert notifications
- Scheduled email report delivery to keep users informed even when they are not logged into the system
- Automatic generation of trouble tickets based on alarm and alert conditions
- Sorting and filtering of assets and locations in the Entity Tree

# Configuration

# Configuring the MMS Settings

The MMS Settings window controls various screen behaviors within the MMS application. In most cases, the default settings are sufficient.

To open this window, select **File > Settings** from the main menu.

Settings				$\boxtimes$
Organization Information Licensing	MMS Settings Specify the numbers at which the MMS dashbo	ard indicators c	change to poor.	
SMTP Servers ECPI Tile Server Autoscope Settings Password Strength Confirmation Dialogs Action Priorities Preempts Detector Settings BlueTOAD <sup>TM</sup> Support Services Offline Alert Format MMS Settings	Assets Out of Service Outstanding Call Tickets Outstanding Workorders Assets Nearing Failure Assets Past Expected Failure Preventive Maintenance Past Due Tickets / Location Tickets / Location Over Time (days)	10 10 25 25 10 10 3 30		
	Other MMS Settings Multiple Call Tickets Threshold (hrs)	Concession of the local division of the		
			Close	

Field	Description
Assets Out of Service	Sets the "poor performance" threshold for the "Number of Assets Out of Service" dial on the System Performance Dashboard report (page 19-104). This threshold is shown on the report dial as a small yellow triangle.
Outstanding Call Tickets	Sets the "poor performance" threshold for the "Outstanding Call Tickets" dial on the System Performance Dashboard report (page 19-104). This threshold is shown on the report dial as a small yellow triangle.

• Configuring the MMS Settings

Field	Description
Outstanding Work Orders	Sets the "poor performance" threshold for the "Outstanding Work Orders" dial on the System Performance Dashboard report (page 19-104). This threshold is shown on the report dial as a small yellow triangle.
Assets Nearing Failure	Sets the "poor performance" threshold for the "Number of Assets Nearing Failure" dial on the System Performance Dashboard report (page 19-104). This threshold is shown on the report dial as a small yellow triangle.
Assets Past Expected Failure	Sets the "poor performance" threshold for the "Number of Assets Past Expected Failure" dial on the System Performance Dashboard report (page 19-104). This threshold is shown on the report dial as a small yellow triangle.
Preventive Maintenance Past Due	This option is not used at this time.
Tickets / Location	This option is not used at this time.
Tickets / Location Over Time (days)	This option is not used at this time.
Multiple Call Tickets Threshold (hrs)	On the Tickets window, Centracs shows a yellow indicator $\triangle$ if more than one ticket is created for the same Location within a specific period of time, as it is likely that the tickets are duplicates. This field determines that period of time. For example, if you enter 48, then if two tickets are entered for the same Location within 48 hours, the second ticket is marked with the yellow indicator. (Or if <i>three</i> tickets are entered, the second and third tickets are marked with the indicator.)
	<b>Note</b> • Tickets with a status of Closed or Scheduled are not included in the "multiple calls" indicator.
Master Inventory: Retain Last Added Values	Controls the behavior on the Master Inventory window (page 19-13) when new assets/inventory are added. Select whichever method is easier for you to enter your assets and inventory into the system:
	<ul> <li>Disabled – the last entered values for Type and Location are retained for the next add.</li> </ul>
	<ul> <li>Enabled – the last entered values for Name/Identifier, Service Date, Manufacturer, Type, and Location are retained for the next add.</li> </ul>

#### Configuring User Permissions

User permissions for MMS features can be controlled at the level of the Jurisdiction Roles and the Application Roles. For example, you can control the ability to add tickets, edit tickets, edit PM checklists, move assets, reassign tickets, and so on. For details, refer to *Defining Jurisdiction Roles* on page 20-14 and *Defining Application Roles* on page 20-19.

#### Using the Type and Field Definitions Window

Use the Type and Field Definitions window to:

- Add a new asset type or inventory type to be managed in Centracs
- Delete an asset type or inventory type from Centracs
- Change the fields associated with a specific type of asset or entity
- Record the original value, replacement value, years to depreciate, and/or life span for a specific type of asset
- Record the original value and/or replacement value for a specific type of asset or inventory

#### To add a new asset type or inventory type:

1 From the main menu, select **Configuration ▶ Type and Field Definitions**. The Type and Field Definitions window opens.

— Type and Field Definitions		
Filter: Assets 🔻	Type Details	
ASC/3	Asset - ID ASC/3 Icon Controller - ASC: -	
ASC/3 2070	Fields Type Data	
Autoscope-DUO	Specify the fields that will be filled out when an instance of this type is created	
S Autoscope-SPII	Add New Field Add Shared Field	
Sector Autoscope-Terra		
BIU BlueTOAD Station	Name Name Name	
Cabinet-NEMA	Description	
🚽 Cabinet-Safetran	Name Service Date     Service Date	
TCCTV (camera)	Description Service Date	
> Data Collection Station	Name Manufacturer     Manufacturer	
🔄 Detector - Loop	Description	
Contractor - Video	Name Serial No	וה
DMS Sign     EVP	Description Text	
Lighted Crosswalk	Name User Guide	٦I
Load Switch	File	
№4		-
🕂 Add 🗙 Delete		ose

• Using the Type and Field Definitions Window

- 2 Click Add.
- 3 Under Type Details, use the dropdown to specify whether the new type is an Asset or Inventory item. In general, "inventory" includes bulk items such as bolts and light bulbs, whereas an "asset" is an individual item that is valuable enough to be tracked separately, such as a controller or camera.
- 4 In the ID field, enter a name for the new type. You cannot change this name after it has been saved.
- **5** From the Icon dropdown, select a graphical icon to represent this type of asset or inventory in Centracs.
- 6 If you are adding an asset type (not an inventory type), the Fields tab shows the default fields for this type, such as Name and Manufacturer. FOR ASSETS: These fields will appear on the Master Inventory window (page 19-13) and the Asset Status Display (page 19-74) for this type. FOR ENTITIES: These fields will appear on the Entity Configuration window for this type, in the order shown.

Action	Description			
To delete a field	Click the red X beside it. (Some fields cannot be deleted, and therefore, do not have a red X beside them.)			
To change the order of the fields	Use the 🔳 and 🔳 arrows.			
To add another	1 Click Add New Field.			
unique field	2 Enter a display name for the new field. This Name will appear on the Master Inventory, Asset Status, and/or Entity Configuration windows.			
	3 Optionally, use the Description box to enter notes about the new field. This information appears on the Type and Field Definitions window only.			
	4 In the dropdown list, select the type of field to add. For details, refer to <i>Shared Field Types (MMS)</i> on page 19-9.			
	5 If the icon appears, validation is possible for this field type. Click the icon and select the Validation type. For details, refer to Shared Field Types (MMS) on page 19-9.			
To add another	1 Click Add Shared Field.			
shared field	2 From the Select Field window (page 19-40), select the shared field you want to add.			
	3 Click OK.			
	For more information, refer to <i>Defining Shared Fields</i> on page 19-8.			

- 7 On the Type Data tab, enter dollar values for the original value and the current replacement value of the asset/inventory item. These values are used on the Asset Status display (page 19-74) and the System, Region, and Location Values report (page 19-105).
- 8 If you are adding an asset type (not an inventory type), also enter the number of years it will take the asset's value to depreciate to zero, and the number of months an asset of this type is expected to be in service. These values are used on the Asset Status display (page 19-74), the Assets Nearing Expected Failure report (page 19-88), the Assets Past Expected Failure report (page 19-89), the System Age Dashboard report (page 19-103), the System Performance Dashboard report (page 19-104), and the System, Region, and Location Values report (page 19-105).
- 9 Click Save.

Items of this type can now be added via the Master Inventory window (page 19-13).

**Note** • Use the Filter dropdown in the left-hand pane of the window to see Asset types only, Inventory types only, Entity types only, or All types.

Defining Shared Fields

## **Defining Shared Fields**

A shared field is a predefined attribute that can be used over and over in multiple asset types and/or entity types. For example, you may want to add file attachments to your assets and entities in Centracs — you can easily configure this using a shared field. When you assign a shared field to an asset type, it appears in the Master Inventory window (page 19-13) and Asset Status display (page 19-74). When you assign a shared field to an entity type, it appears in the Entity Configuration window.

#### To add a new shared field:

1 From the main menu, select **Configuration ▶ Shared Field Definitions**. The Shared Field Definitions window opens.

— Shared Field Definitions			
Agile Asset No Attachment	Field Details	Attachment	-
Backup Tech Comments Description In Service Date	Description		
Jurisdiction Latitude Longitude Location/Directions Manufacturer Model No Name Notes Owner Photos Primary Name Product Group Secondary Name Serial No Service Date Supervisor Technician Traffic Control Unique ID URL	Туре	File	
Video Type Warranty Date + Add X Delete		C	lose

- 2 Click Add.
- **3** Enter a display name for the new shared field. This Name will appear on the Master Inventory, Asset Status, and/or Entity Configuration windows.
- 4 Optionally, use the Description box to enter notes about the new field. This information appears on the Shared Field Definitions window only.
- 5 Select a Type. For details, refer to *Shared Field Types (MMS)* on page 19-9.
- 6 Click Save.

The new shared field is now available for use in the Type and Field Definitions window (page 19-5), where you can assign the field to one or more asset types and/or entity types.

The shared fields that are shown in italics on this window are system-generated shared fields. They are available on every Centracs system, and cannot be deleted.

#### Shared Field Types (MMS)

The field types below are used on the Type and Field Definitions window (page 19-5) and the Shared Field Definitions window (page 19-8). Some of these field types apply only to assets, some apply only to entities, and some apply to both.

Туре	Description
Check Box	Appears as a checkbox that can be turned on or off.
Currency	Appears as a text field preceded by a \$ sign.
Date	Appears as a date field; the user can type the date or select it from a dropdown calendar. The date entry will be validated.
Date and Time	A combination of a Date field and a Time field. The date and time entries will be validated.
Decimal	Appears as a text field that allows up to 18 decimal places. If you want to validate the entry by the user, select the Range option from the Validation dropdown. Use the Lower Range and Upper Range fields to define the range of valid values. For example, if you enter a Lower Range of 0.5 and an Upper Range of 1.5, an entry by the user of 0.4 or 1.6 would not be allowed. You can also use the Allow Empty option to specify whether users can leave this field blank (if so, turn on the Allow Empty option; if the field is required, turn off the Allow Empty option).
Description	Appears as a single-line text box. By default, all entity types contain a Description field; this field cannot be deleted or changed.
Dropdown Box	Appears as a dropdown list containing only the choices you specify. Click the Items button to define the choices for the dropdown list. For help, refer to <i>Defining Dropdown Options</i> on page 19-36.
File	Allows the user to attach files, open them, replace them, download them, and delete them. For more information, refer to <i>Using the Attach Files Window</i> on page 19-38.
Integer	Appears as a text field that allows entry of whole numbers. If you want to validate the entry by the user, select the Range option from the Validation dropdown. Use the Lower Range and Upper Range fields to define the range of valid values. For example, if you enter a Lower Range of 100 and an Upper Range of 1000, an entry by the user of 50 or 1200 would not be allowed. You can also use the Allow Empty option to specify whether users can leave this field blank (if so, turn on the Allow Empty option; if the field is required, turn off the Allow Empty option).

Defining Shared Fields

Туре	Description
Jurisdiction	Appears as a dropdown list that allows selection of a jurisdiction from the Jurisdictions window (page 20-12). By default, all entity types contain a Jurisdiction field; this field cannot be deleted or changed.
	<b>Note</b> • For assets, this field is purely informational; it does not affect which users can view or edit the asset.
Latitude Longitude	Appears as a Coordinates button that the user can click to launch the Coordinates window (page 3-71), where the user can enter latitude/ longitude information for the asset/entity. Many entity types contain a Latitude Longitude field by default.
	<b>Note</b> • Because assets cannot be added to the map, this field is purely informational.
Manufacturer	Appears as a dropdown list that allows selection of a manufacturer from the Manufacturers window (page 19-12), or that allows the user to launch the Manufacturers window to add a new manufacturer. By default, all asset types contain a Manufacturer field; this field cannot be deleted.
Multi-line text	Appears as a large text box that can hold multiple lines of text. If you want to limit the amount of text that can be entered by the user, select the Length option from the Validation dropdown and enter the maximum number of characters allowed in the text box.
Name	Appears as a single-line text box. By default, all asset and entity types contain a Name field; this field cannot be deleted or changed.
Notes	Appears as a button that the user can click to launch the Notes window (page 3-14), where the user can add or edit notes for the asset/entity. All entity types contain a Notes field by default.
Primary Name	Appears as a button that the user can click to launch the Street Names Editor window (page 20-88), where the user can select (or add) the name of the primary cross-street for this asset/entity's location. Many entity types contain a Primary Name field by default.
Secondary Name	Appears as a button that the user can click to launch the Street Names Editor window (page 20-88), where the user can select (or add) the name of the secondary cross-street for this asset/entity's location. Many entity types contain a Secondary Name field by default.

Defining Shared Fields •

Туре	Description	
Service Date	Appears as a date field; the user can type the date or select it from a dropdown calendar. The date entry will be validated. By default, all asset types contain a Service Date field; this field cannot be deleted.	
	An asset's Service Date is used in these other areas of the system:	
	<ul> <li>On the Asset Status display, for tracking the asset's in-service/out- of-service history.</li> </ul>	
	<ul> <li>On the Assets Past Expected Failure Report and the Assets Nearing Expected Failure Report, for calculating the expected failure date for the asset.</li> </ul>	
	<ul> <li>On the System Age Dashboard report, for calculating the age of the asset.</li> </ul>	
Text	Appears as a single-line text box. If you want to limit the amount of text that can be entered by the user, select the Length option from the Validation dropdown and enter the maximum number of characters allowed in the text box.	
	If you need more complex validation, select the Regular Expression option from the Validation dropdown, then enter your RegEx syntax in the Regular Expression box. To learn about Regular Expressions, try searching the web for "regular expressions .NET". For example, if you want users to enter a phone number in this format: 555-555-5555, you could enter the expression below:	
	[0-9][0-9][0-9]-[0-9][0-9][0-9]-[0-9][0-9]	
Time	Appears as a time field; the user can type the time or select it using up/ down arrows. The time entry will be validated.	
User or Group	Allows the user to select an item from the "Select User/Group/Role" window (page 19-37).	

**Note** • Some entity types on the Type and Field Definitions window (page 19-5) have additional field types that are not listed above; these field types are pre-defined in the system and cannot be added, changed, or deleted.

**Note** • The following field types are pre-defined on the Shared Field Definitions window, therefore you cannot add additional shared field definitions of these types: Description, Jurisdiction, Latitude Longitude, Name, Notes, Primary Name, Secondary Name, Service Date.

Defining Manufacturers

#### Defining Manufacturers

When you add assets/inventory to the system on the Master Inventory window (page 19-13), you may want to specify the manufacturer of the item(s). Therefore, the manufacturer must first be defined in the system, using the procedure below.

#### To add a manufacturer:

1 From the main menu, select **Configuration ► Manufacturers**. The Manufacturers window opens.

Manufacturers			
Econolite Group, Inc. Encore GE Get Wired ICx 360 IIS KIDD NEMA Safetran Wapiti	Manufacturer Details Manufacturer Name Contact Representative Contact Phone Contact Email Contact Address	Econolite Group, Inc. Shamus O'Toole (719) 471-9866 support@econolite.com 2950 Professional Place Colorado Springs, CO 8090	
+ Add X Delete		Ck	ose

- 2 Click Add.
- 3 Enter the company name and contact information for the manufacturer.
- 4 Click Save.

#### To modify a manufacturer:

- **1** From the main menu, select **Configuration > Manufacturers**.
- 2 On the left side of the window, click the manufacturer to change.
- 3 On the right side of the window, make your changes.
- 4 Click Save.

#### To delete a manufacturer:

- **1** From the main menu, select **Configuration ▶ Manufacturers**.
- 2 On the left side of the window, click the manufacturer to delete.
- 3 Click Delete.
- 4 If a confirmation dialog opens, click Yes.

# Maintaining the Master Inventory List

Use the Master Inventory window to:

- add assets and inventory to your system
- move assets and inventory from one Location to another
- put assets and inventory out of service, either temporarily or permanently
- export a list of all your assets and inventory to Microsoft Excel

Add Scrap Move Yout of Service Clear Selected     Asset Properties     Advanced Search     Advanced Search     Type Name     Ramp Meter Cimarron @ 1-25     Count Station Woodmen @ 1-25     COUNT Station 1st & Main     Warehouse Region NE     Type Name	Description
Advanced Search         Image: Advanced Search         Image: Type         Name         Image: Ramp Meter         Count Station         Woodmen @ I-25         Image: CCTV Location         Image: Warehouse         Region NE	Description -
Type     Name       Ramp Meter     Cimarron @ I-25       Count Station     Woodmen @ I-25       CCTV Location     1st & Main       Warehouse     Region NE	Description
Ramp Meter     Cimarron @ I-25       Count Station     Woodmen @ I-25       CCTV Location     1st & Main       Warehouse     Region NE	Description *
Count Station Woodmen @ I-25	
CCTV Location 1st & Main Warehouse Region NE	
Warehouse Region NE	
Warehouse Region NE	E
Type Name	Colorado Springs
	Quantity
🚯 CMU S/N GEH754	I
BIU S/N JASF53	1
I NEMA Cabinet 1	1
Load Switch S/N HTR6F	1
2070 Controller S/N JLHKD87U4	1
Ī Pole 3	1
af CCTV Location 2nd & Main	

**Note** • Items that are out of service are shown in italics.

These buttons at the top allow you to perform actions on an asset or inventory item:

Button	Description
Add	Add an item (cabinet, DMS, Autoscope, etc.) to the Master Inventory.
Scrap	Put the item out of service permanently, i.e., send the item to the Scrap Recycle bin (page 19-86). When you click <b>Scrap</b> , you must enter a reason for the change of service.
Move	Move the item from the current Location to a new Location. When you click <b>Move</b> , the Entity Selection window (page 3-18) allows you to select the new Location. After you select the new Location, you must enter a reason for the move.

Button	Description
Out of Service	Put the item out of service temporarily, or put the item back into service. When you click <b>Out of Service</b> , you must enter a reason for the change of service. Items that are out of service are shown in italics.
Clear Selected	Some functions on this window (such as Scrap and Out of Service) can be performed on only one item at a time. If you have multiple items highlighted when you select one of these functions, you will see this message: "Must have one and only one row selected. Try clicking Clear Selected and reselect the item." In a Master Inventory that contains a large number of items, the Clear Selected button is a quick way to deselect all items. Then you can select the individual item that you want to act on.
Print	Send the Master Inventory list to a printer.

Adding to the Master Inventory

#### To add an item to the Master Inventory:

**Note** • The Types of assets and inventory that can be added to Master Inventory are those that have been defined on the Type and Field Definitions window. To add a new *type* of asset or inventory, refer to *Using the Type and Field Definitions Window* on page 19-5. You can also use that window to configure the fields for each asset/inventory type.

- **1** From the main menu, select **Configuration > Master Inventory**.
- 2 Click Add. The Asset Properties section of the window expands.
- 3 From the Type dropdown, select the type of item to add.
- 4 Click I to the right of the Location field, select the current Location for the item from the Entity Selection list, then click **OK**. For instructions on how to select a Location, refer to **Using the Entity Selection Window on page 3-18**.
- 5 Enter values for the other fields (the fields vary depending on the type of item you are adding).
- 6 Click **Save**. The new item is added to the Master Inventory list, under the Location you specified.

**Note** • If you need to add multiple assets/inventory with most of the same values (for example, the same type, location, manufacturer, and service date), you can enable the "Master Inventory: Retain Last Added Values" option on the MMS Settings window (page 19-3). When enabled, the last entered values for Name/Identifier, Service Date, Manufacturer, Type, and Location are retained for the next add. When disabled, only the last entered values for Type and Location are retained for the next add.

Searching and Filtering the Master Inventory List

To find an item in the Master Inventory list:

**Note** • This feature is available only in the Locations/Assets view. Refer to *Customizing the Master Inventory View* on page 19-18.

- 1 To expand the Advanced Search section of the window, click the down arrow beside it.
- 2 From the dropdown list, select a field to search on.
- **3** Depending on the field you chose, you will be asked to enter the search criteria for that field. For example:
  - For the Warranty Date field, enter a date (or select one from the dropdown calendar), and specify whether to find items with the exact warranty date you specified, a date that is earlier than the date you specified, or a date that is later than the date you specified.
  - For Out of Service, enable the checkbox to find items that are currently out of service; disable the checkbox to find items that are currently in service.
  - For text fields such as Name or Description, enter a text string to match, and specify whether to find items that *start* with that string, that *end* with that string, or that *contain* that string anywhere within the field. Text string searches are not case-sensitive.
- 4 Optionally, to further refine your search, select additional fields to search on.
- 5 Click Search.

The search results are shown in the bottom section of the window:

Master Inventory - Default	
+ Add Scrap Move X Out of Service Clear Selected	
Asset Properties	
Advanced Search	
Select fields to search on	
Name Contains n	
Out of Service	
Attachment V Has File(s)	
Search Clear	
Type Name Description	
Vehicle DETEL-VDW-07 – 2006 Sterling with International Crane DETEL-VDW-07 – 2006 Sterling with Internation	ial (
	Þ
Close	

Note • Scrapped items are not included in the search results.

In this example, the search found one Location (a Vehicle) that contains assets/ inventory matching the search criteria. To see the assets/inventory, click the down arrow beside the Location (*shown circled in red above*).

A single asset (a cabinet) matched the search:

Master Inventory - Default	
🕂 Add 🛛 🕵 Scrap 🛛 Move 🛛 🗙 Out of Service Clear Selected 🔂 Print	
Asset Properties	
Advanced Search	
Select fields to search on	
Name Contains n	
Out of Service	
Attachment V Has File(s)	
Search Clear	
Type Name Description	
Vehicle DETEL-VDW-07 – 2006 Sterling with International Crane DETEL-VDW-07 – 2006 Sterling with Internatio	nal (
Type Name Quantity Life Span (months) Manufacturer Model No Original Value Service Date	s
Cabinet NEMA TS2 #1 1 240 Econolite ECONTS2T1S1 12500.00 9/2/2014	R
	Þ
	Þ
Close	

- 6 If you want to see details about the item, either:
  - a Click it and then expand the Asset Properties section near the top of the window.

Or

- **b** Double-click it to open the Asset Status display.
- 7 If you want to remove your search criteria and show the entire Master Inventory list, click **Clear**.

8 If you want to start a different search, replace the existing search criteria with your new criteria. To remove any of the criteria fields, select the blank row from the dropdown list, as shown below:



#### To filter a subsection of the list:

1 Within a subsection of the list, hold the mouse pointer over a column header. If a down arrow appears (*as shown below*), you can filter the section based on the selected column.

- Mast	er Inventory - Default			$\Box \boxtimes$		
	Add Scrap Move X Out of Service Clear Selected					
✓ As	set Properties					
A	sset Type		Count	<b>_</b>		
	Autoscope - TAP		19			
	Туре	Name	🗸 🗸 🖓 antity			
	Autoscope - TAP	001955				
	Autoscope - TAP	002589	1			
	Autoscope - TAP	002204	1			
	Autoscope - TAP					

- Maintaining the Master Inventory List
  - 2 Click the arrow to display the filter menu:

- Maste	r Inventory - Default				
- Add	I Scrap Move X Out of the second sec	of Service Clea	ar Selected) 🖵 Print		
As	set Type		Count		<b></b>
^ <b>=</b>	Autoscope - TAP		19		
	Туре	Name		Quantity	
	Autoscope - TAP	001955		Contains	23
	Autoscope - TAP	002589		Contains	Clear
	Autoscope - TAP	002204		Starts With	
	Autoscope - TAP	002327		Ends With Equals	
	Autoscope - TAP	001954		Not Equals	
	Autoscope - TAP	002586		1	,
	Autoscope - TAP	002913			

- 3 Enter a string to match, and specify whether to find items that *start* with that string, that *end* with that string, that *equal* that string, that *do not equal* that string, or that *contain* that string anywhere within the field. Text string filters are not case-sensitive.
- 4 Click Filter.

The rows that match your filter are shown; any other rows are hidden from view.

The down arrow in the column header changes to a  $\mathbf{W}$  filter symbol to show that a filter is in effect.

5 If you want to remove your filter and show all data, click **Clear**.

Customizing the Master Inventory View

#### To change the view style of the window:

- 1 Click the down arrow beside the 💽 icon.
- 2 Select one of the view styles:

#### Locations/Assets view:

<ul> <li>Add Scrap Move Yout of Service Clear Selected Print</li> <li>Asset Properties</li> <li>Advanced Search</li> <li>Name</li> <li>02JEF0502</li> </ul>
Advanced Search      Advanced Search      Name
Name
A 02 (550502
023EF0502
Type Name Quantity
Cell Modem 001893 1
Cabinet 001892 1
Video Encoders 001894 1
UPS 001896 1
61EBR0202
Type Name Quantity
Cameras 000023 1
Network Switches 000012 1
Cabinet 000009 1
Nature Cuitchan NO.1740 1
Clos



#### Locations/Quantities/Assets view:

Master Inventory - Default	
Add Scrap Move X Out of Service Clear Asset Properties	Selected
Name	<u> </u>
©2JEF0502	
Asset Type	Count
T Cabinet	1
Cell Modem	1
🕈 🛷 UPS	1
📕 📃 Video Encoders	1
61EBR0202	
Asset Type	Count
Cabinet	1
Cameras	1
Vetwork Switches	2
🕈 🎢 UPS	1
	Close

**Note** • Items that are out of service are not included in the Count column.

#### Quantity/Assets view:

Master Inventory - Default     Add Scrap Move X Out of     Asset Properties	f Service	ar Selected)	]	
Asset Type		Count		
Autoscope - TAP		19		
📕 📃 Autoscope - TIP		18		
Blue Toad Devices		11		
T Cabinet		390		
ず Cameras		475		
Cell Modem		99		
Controller		93		
DMS Sign		74		
Lowering Devices		5		
Туре	Name		Quantity	
Lowering Devices	001586		1	
Lowering Devices	001584		1	
Lowering Devices	001585		1	
				Close

**Note** • Items that are out of service are not included in the Count column.

#### To change the columns displayed:

1 Click on the **I** icons (one is for the columns associated with Locations, and one is for the columns associated with Assets):

— M	aster In	ventory - Default							$\Box \boxtimes$
+	Add	Scrap Move )	X Out of S	Service Clear Sel	ected) 🕞 Prin	t			
~	Asset P	roperties							
~	Advanc	ed Search							
		Aitachment	Name		Description				<b>^</b>
-	a" c	Description	02JEF050	12	US 90B (EAS	T BOUND) @ TEI	rry P/	ARKWAY (DETE	EL)
Ť	a" c	Jurisdiction	61EBR02	02	I-12 @ ESSEI	N LN (LA 3064) (l'	TS,LLC	;)	
^	5° C	Latitude-Longitude	04CAD01	57	1-20 @ PINE	S RD (DETEL)			
		Location/Directions	Quantity	Life Span (months)	Manufacturer	Model No		Original Value	s
		🔽 Name	1	84	RuggedCom	RS900G-HI-P-2S	FP-XX	3000.00	2/
		Notes	1	240	Unknown	N/A		12500.00	2/
		Photos	1	84	Pelco	HD25-1000		4250.00	12
		Primary Name	1	84	COHU	3925-5100-PEND	)	4250.00	2/
		Quantity	1	60	Axis	Q7401		1000.00	4/
	•	Secondary Name							Þ
-	ଟ C	Technician	61WBR02	:17	I-10 @ LA 415	5 (CCTV/RVD) (IT	S,LLC	)	
^	5" C	Traffic Control	02TER012	25	LA 24 @ N H	OLLYWOOD RD (	ITS,LL	C)	
		✓ Туре	Quantity	Life Span (months)	Manufacturer	P	Model N	lo	0
		Vige Icon		240	A41	£. ^	1202		
		User Manual						CI	ose

2 Enable the checkboxes for the columns you want to show; disable the checkboxes for the columns you want to hide. When you add a column, it is added to the right end of the display.

#### To rearrange the columns:

• Drag and drop each column header to the preferred location in the table.

#### To change the sort order of the data:

- 1 Click a column header to sort the data in ascending order by that column.
- 2 If you want to sort the data in the opposite order, click the column header a second time.

#### To save your customized view:

- 1 Click the 📑 icon.
- 2 Select Save As. The Set Grid View Name window opens:

Ē	- Set Grid \	/iew Name
	Name of G	rid View
	Name	By Service Date
		OK Cancel

**3** Enter a name for your customized view and click **OK**.

If you click the **relation** icon again, you can see your newly saved view in the list:

Save
Save As
Edit
Asset Comments
By Service Date
Show Attachments
Default

#### To select a saved view:

- 1 Click the **E** icon.
- 2 Select the name of the saved view:



#### To delete a saved view:

- 1 Click the **s**icon.
- 2 Select Edit. The Asset Grid Views window opens.

Name	Shared	Default	System Default	
Asset Comments	Yes	No	No	
By Service Date	No	Yes	No	
Default	Yes	No	Yes	
Show Attachments	Yes	No	No	

- **3** Select the view to delete.
- 4 Click Delete.
- 5 Click OK.

**Note** • If the view you are deleting is set as the system default view, you must first set another view as the system default before you can delete the view.

#### To edit a saved view:

- 1 Click the 📑 icon.
- 2 Select the name of the saved view:



- **3** Make the desired changes (e.g., change the view style, add or remove columns, rearrange columns, sort, etc.).
- 4 Click the 🔤 icon.
- 5 Select Save.

#### To rename a saved view:

- 1 Click the 📑 icon.
- 2 Select Edit. The Asset Grid Views window opens.

Name	Shared	Default	System Default	
Asset Comments	Yes	No	No	
By Service Date	No	Yes	No	
Default	Yes	No	Yes	
Show Attachments	Yes	No	No	

- **3** Select the view to rename.
- 4 Click Rename. The Set Grid View Name window opens:

E	- Set Grid \	/iew Name
	Name of G	rid View
	Name	By Service Date
		OK Cancel

- 5 Enter a new name and click **OK**.
- 6 Click **OK** on the Asset Grid Views window.

#### To share a saved view with all other users:

**Note** • Once a view has been shared, it cannot be unshared.

- 1 Click the **s**icon.
- 2 Select Edit. The Asset Grid Views window opens.

Name	Shared	Default	System Default	
Asset Comments	Yes	No	No	
By Service Date	No	Yes	No	
Default	Yes	No	Yes	
Show Attachments	Yes	No	No	
	•			

- **3** Select the view to share with all other users.
- 4 Click Share.
- 5 Click OK.

Other users now have access to the view.

#### To set a saved view as your default view:

- 1 Click the 🔂 icon.
- 2 Select Edit. The Asset Grid Views window opens.

Delete Rename Se	et as Default	Set as S	System Default	Share
Name	Shared	Default	System Default	
Asset Comments	Yes	No	No	
By Service Date	No	Yes	No	
Default	Yes	No	Yes	
Show Attachments	Yes	No	No	
*System default is used whe				

- **3** Select the view to set as your default view.
- 4 Click Set as Default.
- 5 Click OK.

This view will now be used every time you open the Master Inventory window (or until you change it).

To set a saved view as the system-wide default view:

- 1 Click the 🔤 🔤 icon.
- 2 Select Edit. The Asset Grid Views window opens.

Delete Rename Se	t as Default	Set as S	system Default	Share
Name	Shared	Default	System Default	
Asset Comments	Yes	No	No	
By Service Date	No	Yes	No	
Default	Yes	No	Yes	
Show Attachments	Yes	No	No	
*System default is used when there is no user default specified				

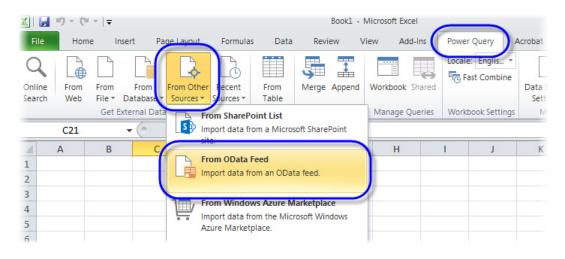
- **3** Select the view to set as the system-wide default view.
- 4 Click Set as System Default. (If the view is not already shared with other users, Centracs will automatically share it.)
- 5 Click OK.

This view is now set as the system default view for all users.

Exporting the Master Inventory List to a File

#### To export the Master Inventory list to Microsoft Excel 2010 or 2013:

1 In Microsoft Excel 2010 or 2013, click the Power Query menu tab:



**Note** • If there is not a Power Query menu tab at the top of your Excel window, you must download the Microsoft Power Query add-in from <u>http://www.microsoft.com/en-us/download/details.aspx?id=39379</u>. From that webpage, click Download, then choose the 32-bit or 64-bit version of the installer, depending on whether your version of Microsoft Office is 32-bit or 64-bit.

- Using the On-Call Scheduler •
- 2 Click From Other Sources, then select From OData Feed.
- 3 In the OData Feed window, enter the following URL, where "yourserver" is the machine name or IP address of your Centracs database: http://yourserver:2082/AssetInventory (for example: http://172.20.96.999:2082/AssetInventory).
- 4 Click OK.

While a connection is made to the database, a "Waiting for..." message is shown.

- 5 In the Navigator pane on the right side of the Excel window, select Assets.
- 6 Click Load (at bottom of pane).

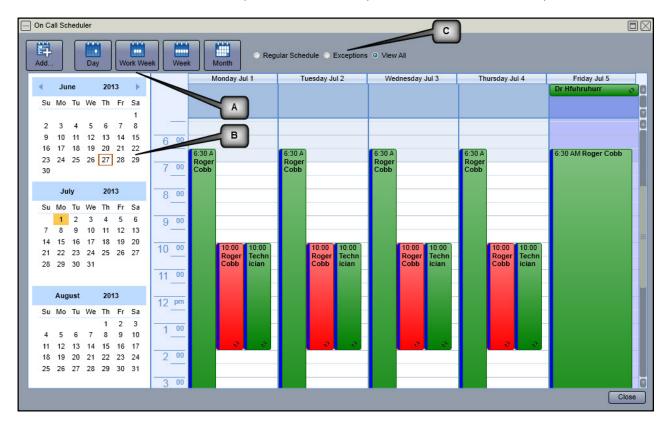
Depending on system resources and the size of the database, it may take several minutes to load the data. When it completes, the Master Inventory list is shown in an Excel spreadsheet, which you can save, sort, rearrange columns, etc.

#### Using the On-Call Scheduler

The On-Call Scheduler is a calendar that determines when each user (or group of users) is available to receive alerts and to be assigned to tickets.

#### To see the on-call schedule:

1 From the main menu, select **Control ▶ On-Call Scheduler...** The On-Call Scheduler calendar window opens, and shows any schedules that have already been added.



*Centracs User Manual* Software Version 2.x - March 2018

- Using the On-Call Scheduler
  - **2** By default, the calendar opens in Week view, for the current week. To change the view, use these settings (see the call-outs on the sample shown above):
    - A: Click the button for the time period you want to see (Day, Work Week, Week, or Month).
    - **B:** To show a time period in the past or future, click a date in the calendar pane on the left side of the window. Use the blue left/right arrows to move backward or forward through the months. Click a month name to jump to a specific month. Click the year to jump to a different year.
    - C: Specify whether you want to see regular (non-exception) schedules only, or exception schedules only, or all schedules. Regular schedules are shown in green; exceptions are shown in red.
  - **3** Double-click an existing schedule to see its details:

Add/Edit Sch	redule		X
	<b>v</b>	Is Exception	
Group / User	🔒 Roger Cobb	⊠	1
Recurrence			
Occurs day 1 from 10:00 AM		effective 6/24/2013	
	R	emove Edit	
	Delete	OK Cancel	)

#### To add a new on-call schedule:

1 From the On-Call Scheduler window, click **Add...** or double-click a day/time inside the schedule. The Add/Edit Schedule window opens.

- Add/	Edit Schedule				
		Is Exception			
Group	/ User				
Schedu	ule time				
Start:	6/24/2013 🕶	1:25 PM - All Day			
End	6/25/2013 -	1:25 PM 🔹 Recurrence			
	Delete OK Cancel				

Using the On-Call Scheduler •

-	Name	Туре	
8	Navin Johnson	User	
8	Roger Cobb	User	
8	Dr. Michael Hfuhruhurr	User	
8	Larry Hubbard	User	
8	CD Bales	User	
8	Rigby Reardon	User	
8	Freddy Benson	User	
8	Gil Buckman	User	
A	First-Line Tech Group	User Group	
A	Autoscope Techs	User Group	
A	Backup Tech Group	User Group	
A	Administrator Alerts	User Group	
A	CCTV Techs	User Group	
A	Vehicle Tech Group	User Group	
8	Administrator	User Group	
A	Technician	User Group	

2 Click 🔲 to the right of the Group/User field. The Select User/Group window opens.

- **3** Select an individual user or a User Group, then click **OK**. If you select a User Group, then all users who are members of that group will be scheduled.
- 4 On the Add/Edit Schedule window, specify the Start and End dates for this schedule.
- 5 Specify the Start and End times for the period during which these users can receive alerts and tickets each day, or turn on the All Day option to keep this schedule enabled around the clock.

• Using the On-Call Scheduler

6 If you want this schedule to repeat, click **Recurrence...** The Recurrence window opens.

Recurrence	
Schedule time	
All Day Start: 6:30 AM 🗧 End: 6:30 PM 🗘	
Duration days/hours: 0 💭 12:00 🗘	
Recurrence pattern	
<ul> <li>Daily</li> <li>Weekly</li> <li>Every 1: day(s)</li> <li>Monthly</li> <li>Yearly</li> <li>Every weekday</li> </ul>	
Range of recurrence	
Start: 6/24/2013 • • No end date	
◯ End after: 0 💭 occurrences	
◯ End after: 6/25/2013 💌	
ОКСА	ancel

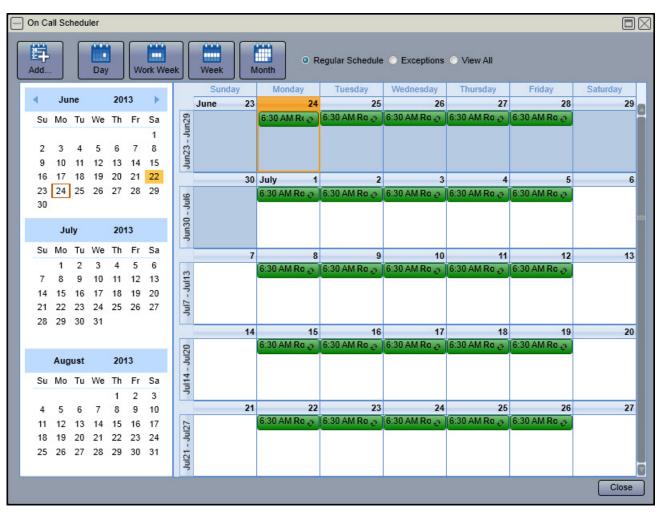
7 Specify how frequently the scheduled period will occur (such as every weekday), and click **OK**. For details, refer to page 19-34.

The Add/Edit Schedule window shows a summary of the recurrence pattern you specified:

Add/Edit Sch	nedule		
		Is Exception	
Group / User	🖁 Roger Cobb	⊠	
Recurrence			
Occurs every to 6:30 PM.	week day effective	e 6/24/2013 from 6:30	AM
		Remove	dit
	Delete	ок са	ancel

8 Click OK.

Using the On-Call Scheduler •



The new on-call schedule is now shown in the On-Call Scheduler calendar:

The 🧧 or 📰 symbol indicates a recurring schedule.

9 Verify that the new schedule was added to the correct day(s) on the calendar, then click **Close**.

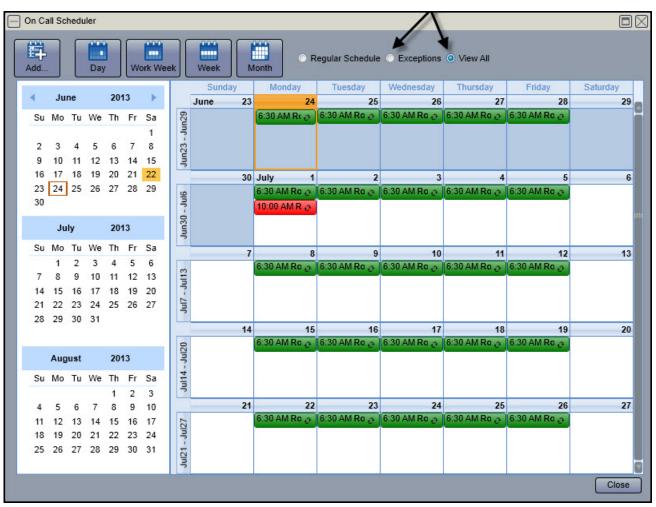
• Using the On-Call Scheduler

#### To add an exception to the schedule:

To create an exception to the on-call schedule (for example, for holidays or vacation days), follow the above steps again to create a new schedule, but turn on the "Is Exception" option. For example, if you want a user to be enabled Monday thru Friday from 6:30m until 6:30pm EXCEPT on the first day of every month from 10am until 2pm, create these two on-call schedules:

Recurrence	
Schedule time All Day Start: 6:30 AM C End: 6:30 PM C Duration days/hours: 0 C 12:00 C	Add/Edit Schedule
Recurrence pattern	Is Exception Group / User Reger Cobb C Recurrence Occurs every week day effective 6/24/2013 from 6:30 AM to 6:30 PM. Remove Edit Delete OK Cancel
○ End after: 6/25/2013 ▼ OK	Cancel
Recurrence      Schedule time      All Day Start: 10:00 AM      End: 2:00 PM	
Duration days/hours: 0 • 04:00 • Recurrence pattern  Daily  Weekly  Day 1 • of every 1 • month(s)  Monthly  Yearly  The First • Sunday • of every 1 •  Range of recurrence  Start: 6/24/2013 • • No end date  End after: 0 • occurrences  End after: 6/25/2013 •	Add/Edit Schedule  Add/Edit Schedule  Sroup / User  Recurrence  Occurs day 1 of every 1 month effective 6/24/2013 from 10:00 AM to 2:00 PM.  Remove Edit Delete OK Cancel
ОК	Cancel

Using the On-Call Scheduler •



Exceptions are shown in red on the calendar. They are only shown if you select the Exceptions option or the View All option, as shown below:

#### To change an on-call schedule:

- 1 From the main menu, select Control ▶ On-Call Scheduler...
- **2** On the calendar, double-click the schedule to change.
- 3 Make your changes on the Add/Edit Schedule window. To remove the recurrence settings for this schedule, click **Remove**; to change the recurrence settings, click **Edit** and make your changes on the Recurrence window (refer to page 19-34).
- 4 Click **OK** to save your changes to the Add/Edit Schedule window.

#### To delete and stop an on-call schedule:

- 1 From the main menu, select Control ▶ On-Call Scheduler...
- 2 On the calendar, double-click the schedule to remove/stop.
- **3** On the Add/Edit Schedule window, click **Delete**.

The schedule is removed from the calendar.

Defining Recurring Schedules

### Defining Recurring Schedules

The Recurrence window is part of the On-Call Scheduler (for scheduling technician on-call days/times) and the PM Scheduler (for scheduling Preventive Maintenance Checklists).

#### To open the Recurrence window:

 From the On-Call Scheduler (Control ➤ On-Call Scheduler), double-click an existing schedule or click Add.

Or

From the PM Scheduler (**Control** > **Preventive Maintenance Plan Schedule**), doubleclick an existing schedule or click **Add**.

2 From the Add/Edit Schedule window, click Recurrence...

Recurrence window for On Call Scheduler (with Daily option selected)	Recurrence window for PM Scheduler (with Weekly option selected)
Schedule time         All Day       Start:         6:30 AM       End:         6:30 PM         Duration days/hours:       0         12:00	Schedule time Duration in days: 2  Recurrence pattern
Recurrence pattern       O Daily       Weekly       Monthly       Yearly   Every weekday	<ul> <li>Daily</li> <li>Weekly</li> <li>Monthly</li> <li>Yearly</li> <li>Recur every</li> <li>Monday</li> <li>Tuesday</li> <li>Wednesday</li> <li>Thursday</li> <li>Friday</li> <li>Saturday</li> </ul>
Range of recurrence Start: 6/24/2013 • • No end date End after: • • occurrences End after: 6/25/2013 • OK Cancel	Start: 6/28/2013 • • No end date End after: 0 • occurrences End after: 6/29/2013 • OK Cancel

#### To use the Recurrence window:

1 If you are in the PM Scheduler, use the Duration field to specify how long each occurrence of the checklist will appear in the schedule (in days).

If you are in the On-Call Scheduler, specify the time of day to schedule the technician. For example, you can set the All Day option to keep this schedule enabled around the clock. Or you can use the Start and End time fields to enter specific start and end times during the day. The schedule will start at the specified Start time on each day that it occurs. When you set the Start and End time fields, the time in the Duration field is automatically adjusted. Verify that the Duration Days/Hours field is correct.

Defining Recurring Schedules •

**2** Under Recurrence Pattern, specify how frequently the technician or checklist will be scheduled. There are four recurrence options:

Recurrence Pattern	Description
Daily	Allows you to schedule the technician or checklist every day, every (x) days, or every weekday (Monday thru Friday) within the specified date range.
Weekly	Allows you to schedule the technician or checklist every week or every (x) weeks, on the selected days of the week.
Monthly	Allows you to schedule the technician or checklist on a specific day every month, or a specific day every (x) months.
	There are two options. Use the first option to select the day of the month by number (such as the 1st of every month); use the second option to select a specific weekday in a specific week (such as the fourth Friday of every month).
Yearly	Allows you to schedule the technician or checklist on a specific day every year.
	There are two options. Use the first option to select the day of the year by date (such as January 1st); use the second option to select a specific weekday in a specific week and month (such as the last Monday in June).

- **3** Under Range of Recurrence, select a starting date, then select one of these options:
  - No end date this schedule will repeat indefinitely.
  - End after x occurrences this schedule will repeat the specified number of time, then stop.
  - End after this schedule will repeat until the specified date.

**Note** • In the Start and End date fields, you can either type the date, or you can click the arrow to pull down a calendar and select the date.

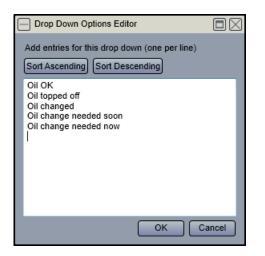
Defining Dropdown Options

### Defining Dropdown Options

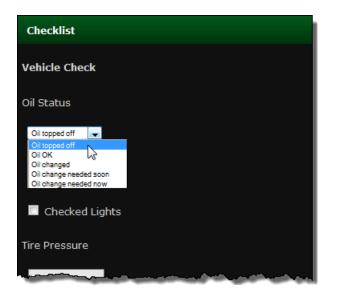
The Dropdown Options Editor is used on the Type and Field Definitions window (page 19-5), the Shared Field Definitions window (page 19-8), and the PM Checklist Items window (page 19-60). Use it to define the options that will appear in a dropdown list. Put each option on a separate line, exactly as you would like it to appear in the dropdown list. To sort the options alphabetically, click Sort Ascending or Sort Descending before you save.

Note • If you want one of the options to be the default value, put it first in the list.

For example, if you enter the options like this on the PM Checklist Items window and then select Sort Descending:



they will appear in the actual dropdown list in the MMS mobile application like this:



Using the Select User/Group Window •

# Using the Select User/Group Window

This window is used in the On-Call Scheduler (page 19-27) and in the Entity Configuration window (page 19-41).

C	S	elect User / Group				
		Name	Туре			
	8	Navin Johnson	User			
	8	Roger Cobb	User			
	8	Dr. Michael Hfuhruhurr	User			
	8	Larry Hubbard	User			
	8	CD Bales	User			
	8	Rigby Reardon	User			
	8	Freddy Benson	User			
	8	Gil Buckman	l Buckman User			
	A	First-Line Tech Group	User Group			
	A	Autoscope Techs	User Group			
	A	Backup Tech Group	User Group			
	A	Administrator Alerts	User Group			
	A	CCTV Techs	User Group			
	A	Vehicle Tech Group	User Group			
	8	Administrator	User Group			
	A.	Technician	User Group			
			ок С	ancel		

If you are in the On-Call Scheduler, select an individual user or a User Group, then click **OK**. If you select a User Group, then all users who are members of that group will be scheduled.

If you are in the Entity Configuration window, click the user or user group to assign to the Location, then click **OK**. The assignment you make here determines which users Centracs will recommend as the Assigned User when a new ticket is created for this Location (refer to the Assigned User field on the Tickets window, page 19-51). To assign more than one user or user group to a Location, you can create a new user group with all of those users in it and assign this new user group to the Location, or you can add more Technician fields to the Entity Configuration window for that Location type.

For details on how to add a user group, refer to *Defining User Groups* on page 20-30. For details on how to add fields to the Entity Configuration window, refer to *Using the Type and Field Definitions Window* on page 19-5.

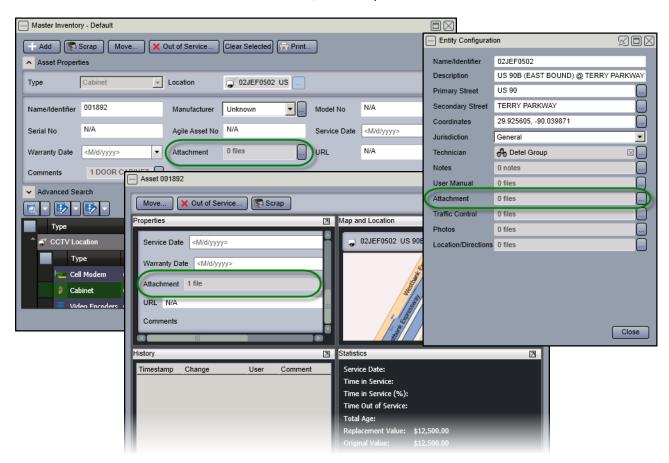
• Using the Attach Files Window

## Using the Attach Files Window

When you:

- add or edit an item in the Master Inventory window (page 19-13), or
- add or edit an entity in the Entity Configuration window, or
- view an asset in the Asset Status display (page 19-74),

if the item includes a field for file attachments (such as the ones circled in the sample screens below), you can click the \_\_\_\_\_ button to add, delete, download, or replace file attachments related to this asset/inventory item:



The Attach File(s) window opens:

Attach file(s)	
Attach file(s) to entities	
Attach Open Update	Retrieve Delete
Filename	Size
instructions.txt	4.27 KB

Using the Attach Files Window

#### To add a new file:

- 1 Click Attach.
- **2** Locate the file in the file system.
- **3** Select the file.
- 4 Click Open.

#### To open a file:

- **1** Select the file.
- 2 Click Open.
- **3** If prompted, select the program to use to open the file (Notepad, Word, etc.), then click **OK**.

#### To delete a file:

- **1** Select the file.
- 2 Click Delete.

#### To replace a file:

- **1** Select the file.
- 2 Click Update.
- **3** Locate the replacement file in the file system.
- 4 Select the file and click **Open**.

#### To download a file:

- **1** Select the file.
- 2 Click Retrieve.
- **3** Select the directory where you want to save the file.
- 4 Click Save.

**Note** • To add an Attachment field to an asset type or entity type so that it appears in the Master Inventory/Asset Status/Entity Configuration windows, you must first define a shared field called "Attachment" (or similar name) using the Shared Field Definitions window (page 19-8). Then open the Type and Field Definitions window (page 19-5) and select the entity type or asset type to edit. Click Add Shared Field, select the Attachment field, then click OK.

• Using the Select Field Window

# Using the Select Field Window

This window opens when you click the **Add Shared Field** button on the Type and Field Definitions window (page 19-5):

Ē	-) Select Field	
	Select field to add	
	Agile Asset No (Text)	Ŀ
	Attachment (File)	
	Backup Tech (User or Group)	
	Comments (Multi-line text)	
	In Service Date (Date)	
	Latitude Longitude (Latitude Longitude)	
	Location/Directions (File)	
	Manufacturer (Manufacturer)	
	Model No (Text)	
	Owner (User or Group)	
	Photos (File)	
	Primary Name (Primary Name)	
	Product Group (Dropdown Box)	
	Secondary Name (Secondary Name)	
	Serial No (Text)	
	Service Date (Service Date)	
	Supervisor (User or Group)	
	Traffic Control (File)	
	Unique ID (Text)	
	URL (Text)	
	Video Type (Dropdown Box)	
	Warranty Date (Date)	
	OK Cancel	

Select the field you want to add to the selected entity type or asset type, then click **OK**. The information shown in parentheses is the field type (such as Dropdown Box, Check Box, Date, or Text). The information shown before the parentheses is the field name. For more information, refer to *Defining Shared Fields* on page 19-8.

MMS Entities and Locations

# **MMS Entities and Locations**

### Configuring Entities and Locations

Use this procedure to add these Location types:

Region (used to group other Locations together)			
CCTV Location	Manufacturer		
Count Station	Ramp Meter		
DMS Location	Repair Depot		
Flashing Beacon	RWIS		
HAR	Signalized Intersection		
Intersection	Vehicle		
Lighted Crosswalk	Warehouse		

Location (for any other type not listed above, such as a Toll Station)

#### To add a new Location entity to the Entity Tree:

- 1 Determine the parent (i.e., a System, Section, Subsection, Group, or Region) for the new Location to be added.
- 2 Right-click the parent entity in the Entity Tree.

- Configuring Entities and Locations
  - 3 From the pop-up menu, select Add Entity ▶ {desired Location type}. The Entity Configuration window opens. The fields differ slightly depending on the Location type.

				[	<ul> <li>Entity Configu</li> </ul>	ration		N
Entity Configu	uration			$\leq$	Name/Identifier	Econo	lite COS	
Name/Identifier	1		_		Description	(Manu	facturer Loc)	
Description					Manufacturer	Econol	ite Group, Inc.	•
Jurisdiction	Gener	al	•		Jurisdiction	All		•
Technician	🔱 Sys	stem	⊠		Technician	🔒 Sys	tem	⊠
Notes	0 note	es			Notes	0 notes	S	
	ſ	<ul> <li>Entity Configura</li> </ul>	tion		(			
		Name/Identifier	1			7		Close
		Description						
		Primary Street						
		Secondary Street						
		Jurisdiction	All			•		
		Technician	불 뤔 First-Line Tech (	Gro	oup			
		Notes	0 notes					
			ОК	C	Cancel App	bly		

**Note** • Because the fields on the Entity Configuration window are configurable, your screen may look different than the sample shown here. For details, refer to *Using the Type and Field Definitions Window* on page 19-5.

- 4 Enter a unique name for the new Location, and optionally, a description. (You can enter any text or numbers for the Name/Identifier and Description fields, and you can change them at any time.)
- 5 If you are adding a Manufacturer Location, select a manufacturer from the Manufacturer dropdown list. Or if you need to add a new one, click to the right of the Manufacturer field. This opens the Manufacturers window; refer to *Defining Manufacturers* on page 19-12 for help using this window.
- 6 Optionally, if the Primary Street and Secondary Street fields are shown, you can select the cross-streets for this Location. Click 📃 to the right of the Primary Street and Secondary Street fields.

Configuring Entities and Locations •

The Street Names Editor opens.

Street Names Editor	
Add or filter street	+ <b>/</b> ×
Casa de Campo Rd Chapel Ln E Pikes Peak Ave Garden of the Gods Rd Lambert Rd McLaughlin Rd Meridian Rd N Academy Blvd N Union Rockrimmon Blvd S Academy Blvd S Powers Blvd W Pikes Peak Ave Woodman Rd	
wondmen RA	OK Cancel

If the street for this Location is not in the list, you can add it. For details about how to search the list of streets and add new streets, refer to *Using the Street Names Editor* on page 20-88.

Once you select the cross-streets, the street names are automatically copied to the Description field on the Entity Configuration window (unless you already entered a Description).

To go back to the Entity Configuration window, click **OK**.

- 7 Select the Jurisdiction to which the new Location will belong. For more information, refer to *Defining Jurisdictions* on page 20-12.
- 8 To assign a user or user group to this Location, click . to the right of the Technician field. For more information, refer to *Defining Users* on page 20-24 and *Defining User Groups* on page 20-30.

• Configuring Entities and Locations

The Select User/Group	window opens.
-----------------------	---------------

N	ame	Туре	
8 N	avin Johnson	User	Ι
Re Re	oger Cobb	User	
8 D	r. Michael Hfuhruhurr	User	Γ
🖁 La	arny Hubbard	User	T
S C	D Bales	User	
Ri Ri	gby Reardon	User	
🖳 Fr	eddy Benson	User	Γ
🖁 G	il Buckman	User	
🔒 Fi	rst-Line Tech Group	User Group	Γ
A A	utoscope Techs	User Group	
A Ba	ackup Tech Group	User Group	Γ
A de	dministrator Alerts	User Group	T
A C	CTV Techs	User Group	T
A V	ehicle Tech Group	User Group	
	dministrator	User Group	
D. Te	echnician	User Group	

- 9 Click the user or user group to assign to the Location, then click OK. The assignment you make here determines which users Centracs will recommend as the Assigned User when a new ticket is created for this Location (refer to the Assigned User field on the Tickets window, page 19-51). To assign more than one user or user group to a Location, you can create a new user group with all of those users in it and assign this new user group to the Location, or you can add more Technician fields to the Entity Configuration window for that Location type. For details on how to add a user group, refer to *Defining User Groups* on page 20-30. For details on how to add fields to the Entity Configuration window, refer to *Using the Type and Field Definitions Window* on page 19-5. If you do not make a selection for the Technician field, and if the Location is the child of a Region entity, then the Technician assigned to the Region will be used for this Location. To remove a value from the Technician field, click the Image.
- **10** Optionally, to add notes for this entity, click lot the right of the Notes field. For more information, refer to *Adding Notes to Entities* on page **3-14**.
- 11 To save your entries, click **Apply** or **OK**. (**Apply** saves your changes and keeps the window open; **OK** saves your changes and closes the window.)

The new Location entity is shown in the Entity Tree.

12 To add the Location to the map, select View ▶ Map or View ▶ Preset Map from the main menu and zoom in on the desired map location. Drag and drop the Location from the Entity Tree onto the appropriate position on the map. The Map Editor opens so that you can define and configure how the Location will be shown on the map. For details about how to use the Map Editor, refer to Editing the Map View on page 5-18. (Note: You cannot add Regions or Vehicles to the map.)

Viewing Location History

**To edit the configuration for a Location entity:** Refer to *Editing Entity Properties* on page 3-9.

### Viewing Location History

The Location History window shows historical information for a specific Location, including Tickets, PM Checklists, and Asset Moves.

#### To open the Location History window:

From the Entity Tree or Map Viewer, right-click a Location entity and select Location History.

Or

From the Ticket Editor window (Control > Tickets), select a ticket, click Edit, then click History...

#### To use the Location History window:

- 1 In the filter dropdown . select the type(s) of history you want to see: Tickets, Asset Moves, and/or PM Checklists.
- 2 Specify a range in the Start Date/Time and End Date/Time fields.
- 3 Click Run.

_ Location History							
<ul> <li>▲ Options</li> <li>✓ Start Date / Time: 9/26/2015 ▼ 9:49 AM ♀ End Date / Time: 10/14/2015 ▼ 9:49 AM ♀ Run</li> </ul>							
Location: 🚛 SuperGree	n EcoHybrid Truck #1						
Timestamp	Туре	Name	Updated By	Assigned To	Status	Summary	
9/28/2015 12:28:59 PM	Ticket	1	Navin Johnson	Navin Johnson	Scheduled	The Ticket was created.	
9/28/2015 12:29:00 PM	Ticket	1	Navin Johnson	Roger Cobb	Dispatched	The Ticket status is set to Dispatched.	
10/14/2015 9:36:11 AM	Preventive Maintenance	DMS 6-month checklist (10/14/2015 - 10/15/2015)	CD Bales		Assigned	The PM Checklist was created.	
10/14/2015 9:38:04 AM	Asset Move	Wiring	Roger Cobb			An Asset was moved to this location.	
10/14/2015 9:40:40 AM	Ticket	1	Navin Johnson	Navin Johnson	Closed	The Ticket status is set to Closed.	
10/14/2015 9:40:42 AM	Ticket	1	Navin Johnson	Rigby Reardon	Dispatched	The Ticket status is set to Dispatched.	
10/14/2015 9:43:45 AM	Ticket	1	CD Bales	Rigby Reardon	Dispatched	The Ticket was updated.	
10/14/2015 9:45:27 AM	Asset Move	Wiring	Roger Cobb			An Asset was moved away from this location.	

The data is sorted by Timestamp, in ascending order.

Viewing Location History

The columns are:

Field	Description
Timestamp	The date and time the activity occurred on this item.
Туре	Ticket, Asset Move, or Preventive Maintenance (i.e., PM checklist).
Name	The ticket number, PM checklist name, or asset name. For PMs, this column also includes the start and end dates.
Updated By	The user who performed the activity.
Assigned To	The assigned recipient (for tickets only).
Status	The status of the item after this activity was performed on it.
Summary	The current status of the ticket or PM. For an asset move, this column shows whether it was a move "from" or a move "to" this Location.

4 For more details, click a row in the table:

$\square$	Location History							
ŀ	Options							
	Start Date /	Time: 9/26/2015	▼ 9:49 AM 🗘 E	End Date / Time: 10/14/2	015 🔻 9:49 AM	Run Print		
L	ocation: 🚛 SuperGr	een EcoHybrid Tru	uck #1				_	
	Timestamp	Туре	Name	Updated By	Assigned To	Status	Summary	_
	10/14/2015 9:43:45 A	N Ticket	1	CD Bales	Rigby Reardo	n Dispatched	The Ticket was updated.	
	Ticket Number:	1	Time Received:	10/14/2015 9:40:42 AM	Time Dispatched:	10/14/2015 9:40:43 AM		
	Ticket Status:	Dispatched	Туре	Call	Priority:	High		
	Person Calling:	Patty O'furniture	Callback Number:	867-5309				
	Description:	wheels fell off						
	Found on Arrival:							
	Work Performed:							
	work Performed.							
	Comment:							
			_		_			
	ETA:							
	Corner:	Northeast						
	Direction:	North						
	Assigned Recipient:	Rigby Reardon						

Sample Ticket in Location History

Viewing Location History

<ul> <li>Location History</li> </ul>	Cocation History							
▲ Options	▲ Options							
Start Date / Time: 9/26/2015 • 9:49 AM 🗧 End Date / Time: 10/14/2015 • 9:49 AM 📮 Run Print								
Location: 🚛 SuperGre	en EcoHybrid Truck #1							
Timestamp	Туре	Name	Updated By	Assigned To	Status	Summary		
10/14/2015 9:45:27 AM	Asset Move	Wiring	Roger Cobb			An Asset was moved away from this location.		
Location Moved To:	City Center							
Location Moved From:	🚝 SuperGreen EcoHybr	id Truck #1						
Inventory	Inventory 🅐 Wiring							
Quantity:	uantity: 1							
Comment:	Performed On: Centracs	. Reason: to warehouse	for storage.					

Sample Asset Move in Location History

**5** Optionally, you can print a report of all the history data for the selected date range. To do so, click **Print**. A new window opens, with a preview of the report:

Location His	story								$\boxtimes$
<b>S</b>	९ ९								ļ
	Timestamp	Туре	Name	Updated By	Assigned To	Status	Summary		
	10/14/2015 9:45:27 AM	Asset Mov	e Wiring	Roger Cobb			An Asset was moved away from this location.		
	Location Mo	wed To:	City Center						
	Location Mo	wed From:	SuperGreen Eco	Hybrid Truck #1					
	Inventory:		Wiring						
	Quantity		1						
	Comment:		Performed On: C	entracs. Reaso	n: to warehouse	for storage.			
				Page 7 of 7		10/14/20	15 10:24:09 AM	' I	
Type text to	find		4 Þ 🔻						

Note that the report may have multiple pages. Use the toolbar to zoom in or out, or to send the report to a printer. Use the scrollbar to move through the pages. Use the text box at the bottom of the window to search for specific text within the report.

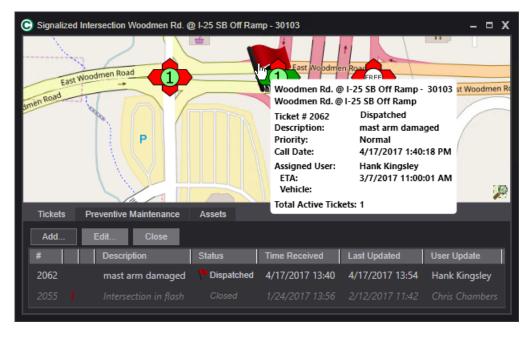
Using the Location Status Display

### Using the Location Status Display

Each of these "Location" types has a status display in Centracs:

- CCTV Location
- Count Station
- DMS Location
- Flashing Beacon
- HAR
- Intersection
- Lighted Crosswalk
- Ramp Meter
- RWIS
- Signalized Intersection

The status display shows the map location, the current asset/inventory information, ticket status, and Preventive Maintenance (PM) status for the Location.



**Note** • To specify which types of entity icons (e.g., for signals, URLs, Links, etc.) to show or hide on the map portion of the Location Status display, refer to *Editing Map Layer Settings* on page 20-83.

Using the Location Status Display

#### To open the status display:

Double-click the Location in the Entity Tree or Map Viewer.

#### Or

Right-click the Location in the Entity Tree and select Show Status... from the popup menu.

You can open status displays for multiple Locations (or other entities) at the same time. You can move them, resize them, and dock them like other windows in Centracs.

The top section of the status display shows an aerial view of the Location on a map. In the sample shown above, the red flag indicates that there is an active ticket for this Location (in this case, a Signalized Intersection). To see details about a specific icon on the map, hold your mouse pointer over it. If there is an active ticket for the entity, information about the ticket is shown when you hover over the icon, as shown above. (If there are multiple active tickets, the one with the highest priority is shown. If there are multiple active tickets with the same highest priority, the newest of those is shown.)

The bottom section of the status display contains three tabs:

#### Tickets tab

This tab shows summary information about the tickets (and work orders) for this Location, including active *and* closed tickets. (Tickets with a status of "Scheduled" are not shown.) You can double-click a ticket to see more details. You can also use the buttons to add a new ticket for this Location, change an existing ticket, or close a ticket.

$\sim$		$\sim$			cerit
Tickets	Preventive Maintenance	Assets			
Add	Edit Close				
#	Description	Status	Time Received	Last Updated	User Update
2062	mast arm damaged	Dispatched	4/17/2017 13:40	4/17/2017 13:54	Hank Kingsley
2055 🚶					

Using the Location Status Display

#### Preventive Maintenance tab

This tab shows summary information about the PM checklists for this Location, including open, completed, and closed PMs. You can double-click a PM to see more details.

Tickets Preventive Main	tenance Assets	
Due Date	Name	Status
6/18/2016 12:00:00 AM	Semi-Annual Cabinet Maint.	Completed
7/15/2016 12:00:00 AM	Spot Check (KW)	Completed
12/31/2017 12:00:00 AM	Annual Signal Maint.	Assigned
11/15/2016 12:00:00 AM	Semi-Annual Cabinet Maint.	Completed
12/30/2016 12:00:00 AM	Annual Signal Maint.	Completed

#### Assets tab

This tab shows the assets and inventory that are currently at this Location. For assets, the window shows the Type and Name; for inventory, the window shows the Type and Quantity. You can double-click an asset or inventory item to see more information about it. You can also move assets and inventory to another Location by dragging and dropping them to a different Location's status display or to a different Location in the Master Inventory window (page 19-13). (To select multiple assets at a time, hold the **Shift** or **Ctrl** key while you click the assets, or click the gray box at the top left corner of the list to select all items. Note that you can move multiple assets at the same time, but you cannot move multiple types of inventory items at the same time.)

				cent
Ticl	kets	Preventive Maintenance Ass Type	Name	Quantity
	E	Cabinet	CAB0002	1
	R	Monitor	MMU-10038	1
	0	Ped Button		8
	()	Ped Head		8
		Signal Controller	EOS-6TH43	1
		Signal Head		1

Working With Tickets •

# **Working With Tickets**

### Viewing Tickets

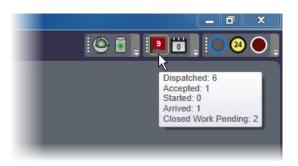
Use the Tickets window to add, edit, and close issue tracking tickets. Tickets are updated real-time on this window with any changes made from the Centracs client or the MMS mobile app. Changes are time-stamped with the user name.

**Note** • To configure Centracs to automatically alert users when tickets are assigned to them, refer to *Alerts for MMS Tickets* on page 4-41.

**Note** • For information on how ticket statuses are shown on the map, refer to *MMS Ticket Status* on page 5-12.

#### To see ticket totals by status:

Hover the mouse over the sticket icon in the Centracs toolbar. A tooltip shows the totals:



The number inside the schecklist icon shows the number of open Call tickets. (All Work Orders and all Call tickets with a status of Closed, Closed Work Pending, or Scheduled are excluded from this number.)

#### To open the Tickets window:

From the main menu, select **Control Tickets**.

Or

Click the sticket icon in the Centracs toolbar. The Tickets window opens.

_ т	Tickets											
A	Add Close											
#			Description	Туре	Status	Location	Assigned To	Time Received	Callback #	Person Calling	Last Updated	Last Update By
1	1		signal in flash	Call	Arrived	Signalized Intersection Location 1	Navin Johnson	5/21/2013 10:21	545-8965	Artie Choke	6/17/2013 13:36	Navin Johnson
2	ŧ		timing complaint	Call	🏲 Dispatched	Flashing Beacon Location 1	Roger Cobb	5/22/2013 16:36	425-8754	Yuri Pulsive	6/17/2013 14:01	Navin Johnson
3			move sign location	Work Order	Accepted	DMS Location 1	Rigby Reardon	5/22/2013 16:36	NA	Central	6/17/2013 13:36	Navin Johnson
4	1		damaged sign	Call	🏲 Started	Flashing Beacon Location 1	CD Bales	5/22/2013 16:37	452-9875	Patty O'Furniture	6/17/2013 14:00	Navin Johnson
6	1		reckless driving	Call	Scheduled	Vehicle Location 001	Dr. Michael Hfuhruhurr	5/23/2013 18:03	657-8452	Ima Pepper	6/17/2013 14:01	Navin Johnson
8	1	⚠	speeding	Call	🏲 Started	Vehicle Location 001	Freddy Benson	5/23/2013 18:05	658-6598	Barry Shmelly	6/17/2013 14:01	Navin Johnson
9	!		power off	Call	Arrived 🀬	Ramp Meter Location 1	Dr. Michael Hfuhruhurr	5/24/2013 11:21	436-9641	Brock Lee Spears	6/17/2013 14:01	Navin Johnson
11	ŧ		graffiti	Call	🏲 Dispatched	Flashing Beacon Location 1	Gil Buckman	5/31/2013 13:41	345-6345	Anna Filaxis	6/17/2013 14:05	Navin Johnson
12			complaint	Call	Accepted	TAR Location 1	Rigby Reardon	5/31/2013 13:43	431-9542	Ivan Farten	6/17/2013 14:02	Navin Johnson
13			power off	Call	🏲 Dispatched	Lighted Crosswalk Location 1 In-Road	Gil Buckman	6/3/2013 14:49	754-4531	B. Boutros-Ghali	6/17/2013 14:03	Navin Johnson
14			road rage	Call	Scheduled	Jehicle Location 001	Navin Johnson	6/3/2013 15:00	986-9531	Duane Pipe	6/17/2013 14:06	Navin Johnson
16			power outage	Call	P Started	Repair Depot Location 1	Larry Hubbard	6/5/2013 13:00	525-9995	Bud Inski	6/17/2013 14:03	Navin Johnson
17			complaint	Call	C Accepted	Jehicle Location 001	Freddy Benson	6/5/2013 13:00	333-5656	Buck Fitty	6/17/2013 14:06	Navin Johnson
20	1		timing complaint	Call	🏲 Dispatched	Flashing Beacon Location 1	CD Bales	6/5/2013 15:53	454-7668	lsh Kabibble	6/17/2013 14:05	Navin Johnson
24	1		FlashAny_On	Work Order	Arrived 🏲	Signalized Intersection Location 1	Navin Johnson	6/11/2013 15:10	NA	Central	6/11/2013 15:10	System

The first three columns indicate:

- The ticket number
- The ticket priority (blank=Normal, 1 = High, 1 = Low)
- A=Duplicate call tickets for the same issue within the time period specified by the Multiple Call Tickets Threshold. (Refer to *Configuring the MMS Settings* on page 19-3.)

### Adding Tickets Manually

**Note** • In addition to the procedure below, you can also add a ticket by any of these methods:

- From the Entity Tree, right-click a Location and select Create Ticket.
- From the Map Viewer, right-click a Location and select Create Ticket.
- From the Location Status display (page 19-48), click Add on the Tickets tab.

### To add a new ticket (or change an existing ticket):

1 From the Tickets window, click **Add...** (or **Edit...**). The Ticket Editor window opens.

Ticket		
Call Date / Time:	6/17/2013	2:08 PM Current
Callback Number*:		
Person Calling*:		
Location*:		History
Type*:	Call	•
Priority*:	Normal	•
Description*:		
Corner:		-
Direction:		•
Assigned User*:		•
Dispatch Date / Time:	6/17/2013	2:08 PM      Current
Ticket Status:	Scheduled	
		OK Cancel

2 Enter the ticket information and click **OK**.

The ticket fields are:

Field	Description
Ticket Number	Shown only after a ticket has been saved to the database. This is a unique number assigned by the system.
Call Date / Time	The date and time the issue was called in or entered into the system. This defaults to the current date and time.
Callback Number *	The phone number of the person who reported the issue.
Person Calling *	The name of the person who reported the issue. If the ticket was created automatically by Centracs, "Central" is shown.
Location *	Click the button beside the field to open the Entity Selection window. Select the Location entity that the ticket relates to and click <b>OK</b> . For details, refer to <i>Using the Entity Selection Window</i> on page 3-18.

Field	Description				
Type *	The type of ticket:				
	Call – added via Centracs				
	Work Order – added via Centracs				
	<ul> <li>Found On-site – this option is shown only for tickets that were added via the MMS mobile application</li> </ul>				
Priority *	The importance level of the ticket: High, Normal, or Low.				
Description *	An explanation of the issue.				
Found On Arrival	Shown only after a ticket has been marked as Arrived; indicates the comments entered by the tech on-site.				
Work Performed	Shown only after a ticket has been marked as Arrived; indicates the comments entered by the tech on-site.				
ЕТА	Shown only after a ticket has been marked as Dispatched. ETA is the Estimated Time of Arrival that was assigned when the ticket was dispatched.				
Corner	If the ticket relates to a specific corner of an intersection/ crosswalk/etc., specify the corner: Northeast, Northwest, Southeast, or Southwest.				
Direction	If the ticket relates to a specific direction of travel, specify the direction: North, South, East, West, Northeast, Northwest, Southeast, or Southwest.				

Field	Description
Assigned User *	The Centracs user assigned to work this ticket.
	All users defined in Centracs are shown in the Assigned User dropdown list. The order in which they are listed is controlled by two factors:
	<ul> <li>whether the user is assigned to the Location (on the Entity Configuration window)</li> </ul>
	whether the user is on call (in the On-Call Scheduler)
	Order of users in the list:
	1 Users who are assigned to the Location AND who are on call are displayed in bold at the top of the list.
	<b>2</b> Users who are assigned to the Location but are NOT on call are listed next.
	<b>3</b> Users who are on call but not assigned to the Location are listed next.
	4 All remaining users are listed last.
	<b>Tip:</b> To quickly find a specific user, click in the Assigned User field and then type the first few letters of their first name to filter the list.
	<b>Tip:</b> You can assign more than one user or user group to a Location by adding multiple Technician fields to the Entity Configuration window for that Location type. For details on how to add fields to the Entity Configuration window, refer to <i>Using the Type and Field Definitions Window</i> on page 19-5.
	In the Assigned User dropdown list, a number is shown to the right of each user name. This is the number of open tickets currently assigned to that user (i.e., Dispatched, Accepted, Started, and Arrived tickets). Tickets with a status of Scheduled, Closed, or Closed Work Pending are not included in this number.

Field	Description
Dispatch Date / Time	The date and time the ticket was dispatched (or will be dispatched, for future tickets). This defaults to the current date and time. Once a ticket reaches Dispatched status, the dispatch date can no longer be changed by the user.
Ticket Status	The current status of the ticket:
	Scheduled (no flag) – Ticket has been created.
	<b>Dispatched</b> (red flag) – Ticket has been assigned. Once a ticket reaches Dispatched status, the dispatch date can no longer be changed by the user.
	Accepted (yellow flag) – A technician has taken ownership of the ticket and entered an ETA.
	<b>Started</b> (purple flag) – The technician is en route to the location.
	<b>Arrived</b> (green flag) – The technician is at the location and starting work.
	<b>Closed Work Pending</b> (blue flag) – The work is finished for now, but more work will be required at a later time. (When a technician later returns to this ticket, it goes back into Started status.)
	<b>Closed</b> – The work is finished. Tickets with this status are removed from the Tickets window.
	This field is system-generated.
	<b>Note</b> • When a ticket that has already been dispatched is reassigned to a different user, the ticket status changes back to Scheduled briefly, then to Dispatched until the new user accepts the ticket.

The fields marked with an asterisk (\*) are required.

### **Closing Tickets**

#### To close a ticket:

**Note** • In addition to the procedure below, you can also close or edit a ticket from the Location Status display (page 19-48).

1 From the Tickets window, click a ticket in the list then click **Close**. The Reason for Change window opens.

Reason for Change	
1	
	OK Cancel

2 Enter details about why you are closing the ticket, and click **OK**. The ticket disappears from the Tickets list.

**Note** • To see a closed ticket, use the Location History window. Refer to *Viewing Location History* on page 19-45.

### **Printing Tickets**

#### To print a ticket:

- 1 From the Tickets window, open an existing ticket (either select the ticket and click **Edit**, or double-click the ticket).
- 2 Click Print. The Ticket Details window opens.
- **3** You can preview the ticket, then click the Print icon (or hit **Ctrl-P**) to send the information to a printer.

• Creating Tickets From Alerts

### Creating Tickets From Alerts

Optionally, you can configure the system so that when a specific event occurs, an MMS ticket is automatically created.

To configure automatic generation of MMS tickets:

- 1 Add a new alert trigger. For details, refer to *Using Triggers* on page 4-25.
- 2 On the Trigger Editor window, select "Create Ticket" as the Action Type.
- 3 Specify the type and priority for the tickets to be generated from this trigger.
- 4 Click OK.

For a ticket that is automatically generated, Centracs assigns it based on the information in the system. For example, suppose a ticket is generated for Entity XYZ. If the Entity Configuration for Entity XYZ has an assigned Technician, the ticket will be assigned to that Technician. If Entity XYZ has a user group specified as the Technician, the ticket will be assigned to the first available person in that group. The system also uses the On-Call Scheduler and the Entity Tree hierarchy when making ticket assignment decisions. For example, if the Entity Configuration for Entity XYZ does not have a Technician specified, the system will look at the Technician field for the parent entity of Entity XYZ. If an assignment decision still cannot be made, the system will assign the ticket to the on-call user who currently has the least number of active tickets assigned, or to "System".

If you want the assigned user to be notified automatically of the newly created ticket, refer to *Alerts for MMS Tickets* on page 4-41.

Reason for Change Window

## Reason for Change Window

When you:

- move an asset or inventory item to a different Location
- put an asset or inventory item out of service (temporarily or permanently)
- close a ticket
- close a PM checklist

you must enter a reason for the change. The reason you enter will be shown in the Location History (page 19-45), and if applicable, the Asset History (page 19-74).

#### Asset / Ticket / PM Checklist

Reason for Change	
1	
	OK Cancel

#### Inventory

Reason for Change	
Quantity: 1 All	
1	
	OK Cancel

For an asset, ticket, or PM checklist, enter a reason for the change you requested, then click **OK**. For inventory, you must also specify the number of inventory items to move or put out of service (or you can click the All button to do them all).

Preventive Maintenance (PMs)

# **Preventive Maintenance (PMs)**

### Adding PM Checklist Items

Before you can add and schedule a Preventive Maintenance checklist (page 19-62), you must first add checklist items, which are the building blocks of all PM checklists.

#### To add checklist items:

1 From the main menu, select **Configuration ▶ Preventive Maintenance Checklist Items...** The Preventive Maintenance Checklist Items window opens.

Preventive Maintenance Checkli	st Items	
Vehicle Maintenance Items	Checklist Item Group Details	
Warehouse Inspection Items	Group Name Vehicle Maintenance I	
	Items	
	Add Item	
	Control Type: Check Box 🔻	
	Header Check oil	
	✓ ► X Default Value	
	Check oil	
	Control Type: Check Box 🔻	
	Header Check battery	
	Check battery	
	Control Type: Check Box 🔻	
	Header Check tire pressure	
	Check tire pressure	
	Control Type: Check Box 🔻	
	Header Check belts	
Add X Delete	Cic	ose

The left side shows the categories of checklist items that have been added. The right side shows the items that have been added for the selected category.

- 2 If you want to add a new category of items, click **Add**; then for Group Name, enter a name for the new category of items. Otherwise, select the category of items to which you want to add new items.
- 3 Click Add Item.

Adding PM Checklist Items •

Control Type	Description
Header	This type will appear on the checklist as plain text that cannot be modified.
	In the Header field, enter the text you want to appear as a heade on the checklist.
Comment	This type will appear on the checklist as a small text box. The technician can enter up to 50 characters.
	In the Header field, enter a name for the comment box. Optionally in the Comment field, you can enter default text for the commen box, such as "enter comments here". The technician will be able t type over the default text.
Dropdown	This type will appear on the checklist as a dropdown list. The technician can select one option from the list.
	In the Header field, enter a name for the dropdown list. Then clice <b>Edit Options</b> to open the Dropdown Options Editor and enter the options for the dropdown list. For details, refer to <i>Defining</i> <i>Dropdown Options</i> on page 19-36. Note that the first option in the list will be treated as the default value.
Checkbox	This type will appear on the checklist as a checkbox option. The technician can turn the option on or off.
	In the Header field, enter a name for the checkbox. If you want the checkbox to be on by default, turn on the Default Value checkbox if you want the checkbox to be off by default, turn off the Default Value checkbox.
Multi-line Text	This type will appear on the checklist as a large text box. The technician can enter up to 4000 characters.
	In the Header field, enter a name for the multi-line text box. Optionally, in the Multi-line Text field, you can enter default text for the text box, such as "enter details here". The technician will be able to type over the default text.

**4** For Control Type, select the type of item to add:

- 5 Optionally, to change the indentation of the control, click the ◄ or ► arrow (one or more times).
- 6 Repeat steps 3-5 to add more items to the category.
- 7 Optionally, to change the vertical order of the controls, use the ▼ and ▲ arrows.
- 8 Click Save.

Adding PM Checklists

The new items will now be available on the Preventive Maintenance Checklists window (page 19-62).

### Adding PM Checklists

The Preventive Maintenance Checklists window allows you to group individual PM tasks into a checklist, specific to a type of maintenance activity to be performed, such as a vehicle maintenance checklist or field device inspection checklist.

**Note** • Before you can add and schedule a Preventive Maintenance checklist, you must first add checklist items, which are the building blocks of all PM checklists. Refer to *Adding PM Checklist Items* on page 19-60.

#### To add a new checklist:

1 From the main menu, select **Configuration ▶ Preventive Maintenance Checklists...** The Preventive Maintenance Checklists window opens.

Preventive Maintenance Checklists					
Checklists	Checklist Det	ails	Items	3	
CCTV Inspection Count Station Inspection DMS Inspection Flashing Beacon Inspection Ramp Meter Inspection Truck Maint Monthly Truck Maint Quarterly Truck Maint Weekly	Name Description Items	Truck Maint Quarterly	•	Vehicle Maintenance Ite Check oil Check battery Check tire pressure Check belts	
		Check battery Check tire pressure	Fill gas tank Change spar Wash vehicle Check tire tre Check filters	Add oil Add air to tires Fill gas tank Change spark plugs	
		Fill gas tank  Change spark plugs  Wash vehicle		Check tire tread	
		Check belts Check tire tread Check filters			
- Add X Delete				Add Item(s) Close	

The left section shows the checklists that have been added. The middle section shows the items that have been added to each checklist. The right section shows the items available to be added to a checklist.

- 2 Click Add.
- **3** Enter a name for the new checklist.

- Adding PM Checklists •
- 4 Optionally, enter a description for the checklist.
- 5 On the right side of the window, click the ► beside an item category to show all the items in that category. You can select an individual item to add to the checklist, or you can select the entire category in order to add all the items in that category to the checklist.
- 6 Click Add Item(s).

The items you selected are moved to the middle section of the window.

- 7 Repeat steps 5-6 to add more items to the category.
- 8 Optionally, to change the indentation of an item, click the ◄ or ► arrow (one or more times).
- 9 Optionally, to change the vertical order of the items, use the ▼ and ▲ arrows.
- 10 Click Save.

The new checklist will now be available in the Preventive Maintenance Checklist Scheduler (page 19-64).

**Note** • To delete an item, click the red X beside it.

**Note** • If you change a checklist that already exists in the PM scheduler, the scheduled checklist is updated automatically with your changes.

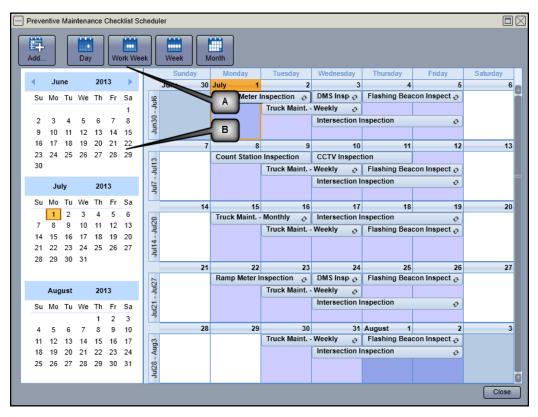
• Using the PM Checklist Scheduler

### Using the PM Checklist Scheduler

The PM Checklist Scheduler is a calendar showing all the Preventive Maintenance (PM) Checklists that have been scheduled but not completed. Use the PM Checklist Scheduler to schedule and track PM activities, and determine which assets or locations are due or past due for PM, and which groups or individuals are responsible for performing the PM.

#### To see the PM schedule:

1 From the main menu, select **Control ▶ Preventive Maintenance Plan Schedule...** The Preventive Maintenance Checklist Scheduler calendar window opens, and shows any schedules that have already been added.



- **2** By default, the calendar opens in Week view, for the current week. To change the view, use these settings (see the call-outs on the sample shown above):
  - A: Click the button for the time period you want to see (Day, Work Week, Week, or Month).
  - **B:** To show a time period in the past or future, click a date in the calendar pane on the left side of the window. Use the blue left/right arrows to move backward or forward through the months. Click a month name to jump to a specific month. Click the year to jump to a different year.

- Using the PM Checklist Scheduler •
- 3 Double-click an existing schedule to see its details:

Add/Edit Sche	dule
Checklist:	Truck Maint Quarterly
Location	HYBRID TRUCK #1 - PJ8-F56 Vehicle
Recurrence	
	of every 3 months effective 8/1/2013 from :00 AM, 12 times.
	Delete OK Cancel

#### To add a new PM schedule:

**Note** • Before you can schedule a Preventive Maintenance checklist, you must first create the checklist. Refer to *Adding PM Checklists* on page 19-62.

1 From the Preventive Maintenance Checklist Scheduler window, click **Add...** or doubleclick a day inside the schedule. The Add/Edit Schedule window opens.

- Add	Edit Schedule	
Cł	necklist:	
Loc	ation	
Sched	ule time	
Start	7/5/2013	
End	7/6/2013	Recurrence
		Delete OK Cancel

- Using the PM Checklist Scheduler
  - **2** Click lot the right of the Checklist field. The Select a Preventive Maintenance Checklist window opens.

Select a Preventive Maintenance Checklist			
CCTV Inspection Count Station Inspection DMS Inspection Flashing Beacon Inspection Intersection Inspection Ramp Meter Inspection Truck Maint Monthly Truck Maint Quarterly Truck Maint Weekly		ry ressure res rk plugs le read	
		ОК	Cancel

- **3** From the left side of the window, select a PM checklist. When you do, the right side of the window shows the details about that checklist.
- 4 Click OK.
- **5** On the Add/Edit Schedule window, click lot the right of the Location field. The Entity Selection window opens.
- 6 Select the Location entity (or entities) where this preventive maintenance will be performed, and click **OK**. For instructions on how to use the Entity Selection window, refer to page 3-18.
- 7 On the Add/Edit Schedule window, specify the Start and End dates for this maintenance schedule.

- Using the PM Checklist Scheduler •
- 8 If you want this schedule to repeat, click **Recurrence...** The Recurrence window opens.

Recurrence
Schedule time
Duration in days: 3 🔹
Recurrence pattern
<ul> <li>○ Daily</li> <li>○ Day 24 </li> <li>○ Day 24 </li> <li>○ of every 3 </li> <li>○ month(s)</li> </ul>
● Monthly ○ Yearly ○ The First ▼ Sunday ▼ of every 1 ↓ month(s)
Range of recurrence
Start: 8/1/2013  No end date
End after: 12     occurrences
◯ End after: 8/2/2013
OK Cancel

**9** Specify how frequently the scheduled maintenance will occur (such as every week or every 3 months), and click **OK**. For details, refer to page 19-34.

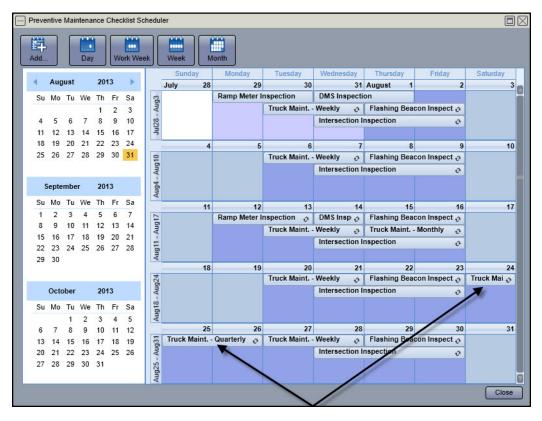
The Add/Edit Schedule window shows a summary of the recurrence pattern you specified:

Add/Edit Sche	dule
Checklist:	Truck Maint Quarterly
Location	HYBRID TRUCK #1 - PJ8-F56 Vehicle
Recurrence	
	of every 3 months effective 8/1/2013 from :00 AM, 12 times.
	Delete OK Cancel

**10** Click **OK**.

• Using the PM Checklist Scheduler

The new PM schedule is now shown in the Preventive Maintenance Checklist Scheduler calendar:



The 🙋 symbol indicates a recurring schedule.

**11** Verify that the new schedule was added to the correct day(s) on the calendar, then click **Close**.

19-68

Using the PM Checklist Scheduler •

#### To change a PM schedule:

- 1 From the main menu, select **Control > Preventive Maintenance Plan Schedule...**
- 2 On the calendar, double-click the schedule to change.
- 3 Make your changes on the Add/Edit Schedule window. To remove the recurrence settings for this schedule, click **Remove**; to change the recurrence settings, click **Edit** and make your changes on the Recurrence window (refer to page 19-34).
- 4 Click **OK** to save your changes to the Add/Edit Schedule window.

**Note** • If you change a PM schedule that is already in progress, Centracs asks you to confirm your change. If you click Yes, Centracs deletes the existing checklist(s) for that schedule and then creates one or more new checklists to reflect your changes. For example, using the sample shown above, suppose today is August 1st. Notice that the DMS Inspection plan already started yesterday. Suppose that plan is scheduled for only one DMS sign, and that a technician already started the inspection on that sign. Now suppose you make a change to that schedule to add another sign to be inspected. Centracs will delete the checklist that was already started by the technician for sign #1, and will create two new checklists: one for sign #1 and one for sign #2.

#### To delete and stop a PM schedule:

- 1 From the main menu, select **Control > Preventive Maintenance Plan Schedule...**
- 2 On the calendar, double-click the schedule to remove/stop.
- 3 On the Add/Edit Schedule window, click **Delete**.
- 4 If a window opens to ask you what to do with the checklists associated with this schedule, answer **Yes** or **No**. For details, refer to *Checklists Associated with a PM Schedule* on page 19-70.

The schedule is removed from the calendar.

• Using the PM Checklist Scheduler

### Checklists Associated with a PM Schedule

If you change or delete a PM schedule that has associated checklists already scheduled in the Scheduled Preventive Maintenance Checklists window (page 19-71), Centracs asks your permission to change or delete those checklists accordingly:

Do you want to edit the exist	ing checklis	ts associated with this Sch	edule?	
Location	Due Date	Name	Status	
📲 3rd & Main	3/8/2014	Intersection Inspection	Assigned	
📲 3rd & Cucharras	3/8/2014	Intersection Inspection	In Progress	
			_	
			E Y	res No

If you want to cancel your changes to the PM schedule, click **No**. If you click **Yes**, Centracs deletes the associated checklists, and if appropriate, recreates them to reflect your changes.

**IMPORTANT** • Any work that has already been done on the checklists will be discarded.

For example, if you added more days to the PM schedule, Centracs deletes the checklists and recreates them with the new due date. If you deleted a Location from the PM schedule, Centracs deletes the checklist for that Location only. If you deleted the PM schedule, Centracs deletes all associated checklists.

Scheduled PM Checklists

### Scheduled PM Checklists

Use the Scheduled Preventive Maintenance Checklists window to see the current status of PM checklists that have been scheduled, or to close a checklist. As soon as a checklist is closed, it is removed from this window. Checklists are updated real-time on this window with any changes made from the Centracs client or the MMS mobile app. Changes are time-stamped with the user name.

### To see totals of Assigned, In Progress, and Past Due checklists:

Hover the mouse pointer over the mouse checklist icon in the Centracs toolbar. A tooltip shows the totals:



The number inside the 📅 checklist icon shows the number of Past Due checklists.

### To open the Scheduled Preventive Maintenance Checklists window:

▶ From the main menu, select Control ▶ Scheduled Preventive Maintenance Checklists...

Or

Click the 🚻 checklist icon in the Centracs toolbar.

The Scheduled Preventive Maintenance Checklists window opens. It shows the checklists that have already been scheduled but not completed yet.

Scheduled Preventive Mainte	enance Chec	klists			
Update Schedule Close Ch	ecklist				
Location	Due Date	Name	Status	Last Modified	Last Modified User
🚝 Electric Vehicle #1	8/3/2013	Truck Maint Quarterly	Past Due	8/9/2013 5:41:19 PM	Sir Robin, the Not-
📲 3rd & Cucharras	8/28/2013	Intersection Inspection	In Progress	8/19/2013 3:03:10 PM	Sir Robin, the Not-
🚥 Hwy 24 - Cascade	8/20/2013	DMS Inspection	Assigned	8/19/2013 2:59:13 PM	Sir Gallahad, the Pu
Ilectric Vehicle #2	8/6/2013	Truck Maint Monthly	Past Due	8/8/2013 11:52:25 AM	Sir Gallahad, the Po
OW Fillmore @ I-25	8/19/2013	Flashing Beacon Inspection	In Progress	8/19/2013 3:08:22 PM	Roger the Shrubbe
Cimarron @ I-25	8/21/2013	Ramp Meter Inspection	In Progress	8/19/2013 3:07:18 PM	Roger the Shrubbe

Scheduled PM Checklists

#### To see the items for a scheduled checklist:

Double-click the checklist. Another window opens, and shows the checklist items, as well as the current state of each item (complete or incomplete).



#### To mark a checklist as completed:

1 Click one or more checklists, then click **Close Checklist**. (To select multiple checklists, click the first checklist you want to close, then hold the **Shift** or **Ctrl** key while you select the others.) The Reason for Change window opens:

Reason for Change	
1	
	OK Cancel

2 Enter a reason for the change you requested, then click **OK**. The reason you enter will be shown in the Location History (page 19-45).

As soon as the checklist has been closed, it disappears from the Scheduled Preventive Maintenance Checklists window, and from the mobile application.

**Note** • You can close a checklist even if the items on the checklist have not been completed.

Scheduled PM Checklists •

**Note** • To see a closed checklist, use the Location History window. Refer to *Viewing Location History* on page 19-45.

#### To add another checklist to the schedule:

Click **Update Schedule...** The Preventive Maintenance Checklist Scheduler opens. For instructions on how to use the scheduler window, refer to *Using the PM Checklist Scheduler* on page 19-64.

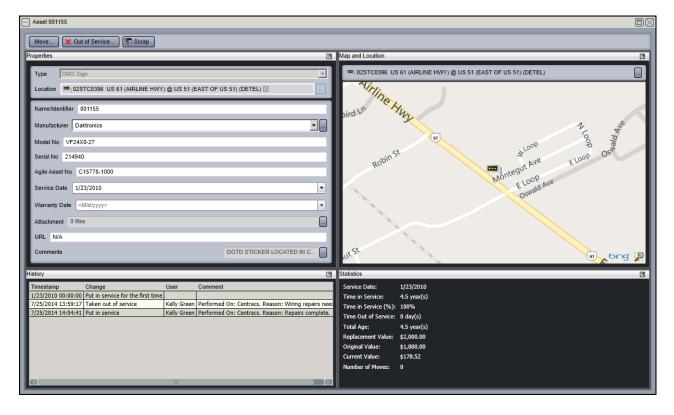
**Note** • Before you can schedule a Preventive Maintenance checklist, you must first create the checklist. Refer to *Adding PM Checklists* on page 19-62.

Monitoring

# Monitoring

## Using the Asset Status Display

The status display for Assets shows the current location of the asset on a map, the asset properties, the asset history, and the asset age/value statistics.



Using the Asset Status Display •

#### To open the status display:

Double-click an asset from any of these windows:

- CCTV Location status display (page 19-48)
- Count Station status display (page 19-48)
- DMS Location status display (page 19-48)
- Flashing Beacon status display (page 19-48)
- HAR status display (page 19-48)
- Intersection status display (page 19-48)
- Lighted Crosswalk status display (page 19-48)
- Manufacturer status display (page 19-81)
- Master Inventory (page 19-13)
- Ramp Meter status display (page 19-48)
- Repair Depot status display (page 19-85)
- RWIS status display (page 19-48)
- Scrap Recycle (page 19-86)
- Signalized Intersection status display (page 19-48)
- Vehicle status display (page 19-83)
- Warehouse status display (page 19-85)

You can open status displays for multiple Assets (or other entities) at the same time. You can move them, resize them, and dock them like other windows in Centracs.

Three buttons at the top of the window allow you to perform actions on this asset:

Button	Description
Move	Move the asset from the current Location to a new Location. When you click <b>Move</b> , the Entity Selection window opens, where you can select the new Location for the asset. For details, refer to <i>Using the Entity Selection Window</i> on page 3-18. After you select the new Location, you must enter a reason for the move.
Out of Service	Put the asset out of service temporarily, or put the asset back into service. When you click <b>Out of Service</b> , you must enter a reason for the change of service.
Scrap	Put the asset out of service permanently, i.e., send the asset to the Scrap Recycle bin (page 19-86). When you click <b>Scrap</b> , you must enter a reason for the change of service.

• Using the Asset Status Display

### Sections of the Status Display

#### Properties

This section of the status display shows basic information about the asset, including the name, serial number, type, manufacturer, service date, and current location. You can make changes to these properties directly from this window (make your changes, then click **Save**).

#### Map and Location

This section shows an aerial view of the current asset location on a map. To see details about a specific icon on the map, hold your mouse pointer over it. If there is an active ticket for the entity, information about the ticket is shown when you hover over the icon. (If there are multiple active tickets, the one with the highest priority is shown. If there are multiple active tickets with the same highest priority, the newest of those is shown.)

Click loopen the status display for the Location where this asset currently resides.

#### History

This section shows any past actions that have been taken for this asset. For example, if the asset has been taken out of service, put back into service, moved from one location to another, or scrapped, that history information is shown here with a date/time stamp. Scroll to the right to see the user who performed the action, and the comments they entered at the time of the action. The Comment field also shows whether the action was performed from Centracs or from the MMS Mobile app.

**Note** • History information is recorded for "Taken out of service" and "Put in service" events *only* if a Service Date is defined for the asset. Service Date is defined on the Master Inventory window (page 19-13) or the Asset Status display (page 19-74).

#### Statistics

This section shows statistics about the performance and life of the asset.

Using the Asset Status Display •

### Viewing More Detail

You can click the D button to "pop out" a section of the window. For example, when you pop out the History section, you can see the events plotted on a timeline; as shown below, you can hover over an event to see all the details.

Asset SDLKG	987						
Move	X Out of Service	e 💽 Scrap	]				
History					E I	Properties	2
			Moved to Repair De Moved from Econolite C Moved By: Dr Hfuhruhu Timestamp:	OS to Repair Depot.		Map and Location	7
			Taken out of service Taken out of service. Updated By: Dr Hfuhruh Timestamp: 7/3/2013 10	Moved to Repair D Moved from Econo Moved By: Dr Hful Timestamp: 7/3/20	olite COS to hruhurr		2
			Put In Service Put in service. Updated By: Dr Hfuhnuh Timestamp: 7/3/2013 10 C	uur 2:51:16 AM			
<b>∮</b> r	Мау	Jun	ul Aug	Sep	Oc 🕨		
2012		2013	20	14 - <b>I41 4 ▶</b>			

You can:

- drag the timeline left or right
- click the left and right arrows to scroll through the months or years
- click so or so to zoom in or out on the time scale
- click K to go to the first event for this asset
- click I or I to scroll through the months
- click I to go to the last event for this asset
- click let to pop the section back to its original size

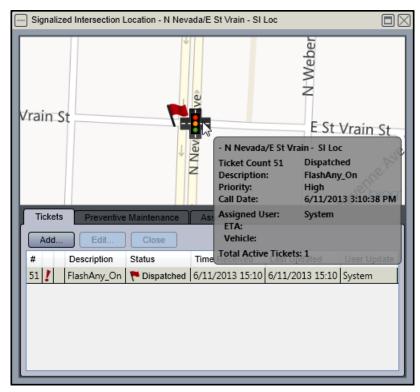
Using the Location Status Display

## Using the Location Status Display

Each of these "Location" types has a status display in Centracs:

- CCTV Location
- Count Station
- DMS Location
- Flashing Beacon
- HAR
- Intersection
- Lighted Crosswalk
- Ramp Meter
- RWIS
- Signalized Intersection

The status display shows the map location, the current asset/inventory information, ticket status, and Preventive Maintenance (PM) status for the Location.



Using the Location Status Display

### To open the status display:

Double-click the Location in the Entity Tree or Map Viewer.

#### Or

Right-click the Location in the Entity Tree and select Show Status... from the popup menu.

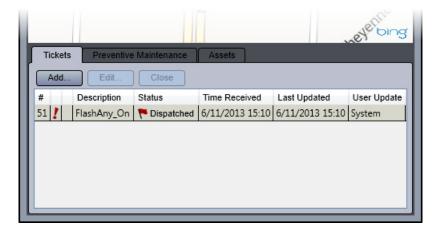
You can open status displays for multiple Locations (or other entities) at the same time. You can move them, resize them, and dock them like other windows in Centracs.

The top section of the status display shows an aerial view of the Location on a map. In the sample shown above, the red flag indicates that there is an active ticket for this Location (in this case, a Signalized Intersection). To see details about a specific icon on the map, hold your mouse pointer over it. If there is an active ticket for the entity, information about the ticket is shown when you hover over the icon, as shown above. (If there are multiple active tickets, the one with the highest priority is shown. If there are multiple active tickets with the same highest priority, the newest of those is shown.)

The bottom section of the status display contains three tabs:

#### Tickets tab

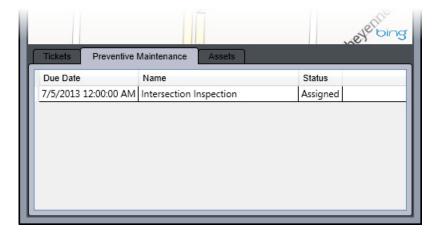
This tab shows summary information about the tickets (and work orders) for this Location, including open, completed, and closed tickets. You can double-click a ticket to see more details. You can also use the buttons to add a new ticket for this Location, change an existing ticket, or close a ticket.



• Using the Location Status Display

### Preventive Maintenance tab

This tab shows summary information about the PM checklists for this Location, including open, completed, and closed PMs. You can double-click a PM to see more details.



#### Assets tab

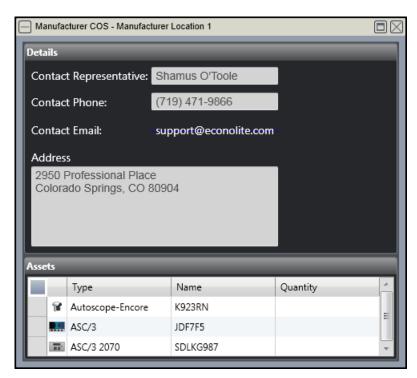
This tab shows the assets and inventory that are currently at this Location. For assets, the window shows the Type and Name; for inventory, the window shows the Type and Quantity. You can double-click an asset or inventory item to see more information about it. You can also move assets and inventory to another Location by dragging and dropping them to a different Location's status display or to a different Location in the Master Inventory window (page 19-13). (To select multiple assets at a time, hold the **Shift** or **Ctrl** key while you click the assets, or click the gray box at the top left corner of the list to select *all* items. Note that you can move multiple assets at the same time, but you cannot move multiple types of inventory items at the same time.)

ïckets	Preventive Mainten		
	Туре	Name	Quantity
8	Autoscope-Terra	SS23234F4	
	ASC/3	HGA876F5	
	DMS Sign	Skyline LED #1	

Using the Manufacturer Status Display

## Using the Manufacturer Status Display

The Manufacturer status display shows current asset, inventory, and contact information for a specific Manufacturer "Location".



### To open the status display:

Double-click the Manufacturer in the Entity Tree or Map Viewer.

Or

Right-click the Manufacturer in the Entity Tree and select Show Status... from the popup menu.

You can open status displays for multiple Manufacturers (or other entities) at the same time. You can move them, resize them, and dock them like other windows in Centracs.

The top section of the status display shows the contact information for the Manufacturer. The bottom section shows the assets and inventory that are currently at this Manufacturer Location. For assets, the window shows the Type and Name; for inventory, the window shows the Type and Quantity.

You can double-click an asset or inventory item to see more information about it. You can also move assets and inventory to another Location by dragging and dropping them to a different Location's status display or to a different Location in the Master Inventory window (page 19-13). (To select multiple assets at a time, hold the **Shift** or **Ctrl** key while you click the assets, or click the gray box at the top left corner of the list to select *all* items. Note that you can move multiple assets at the same time, but you cannot move multiple types of inventory items at the same time.)

• Using the Region Status Display

## Using the Region Status Display

The status display for Regions shows the map locations, current ticket counts, and current PM counts for all the "Locations" in the selected Region. (A Location is in a Region if it is a "child" of the Region in the Entity Tree.)

Region Southwest - Colorado Springs			(	
NUM. Ti Du Pr Ca As E	MS Hwy 24 - ( cket Count 3 escription: iority: all Date: ssigned User: ETA: /ehicle: otal Active Tick	Open move s Norma 5/22/2 Rigby I HYBRII	Cascade ign location mean	Stra
Location	Ticket Count	PM Count		п
Divide Warehouse (SW Loc)	0	1		
🕿 Repair Depot (SW Loc)	0	0		
Econolite COS (Manufacturer Loc)	0	0		
DMS Hwy 24 (SW Loc)	1	1		

### To open the status display:

Double-click the Region in the Entity Tree.

Or

Right-click the Region in the Entity Tree and select Show Status... from the popup menu.

You can open status displays for multiple Regions (or other entities) at the same time. You can move them, resize them, and dock them like other windows in Centracs.

The top section of the status display shows an aerial view of the Region on a map. In the sample shown above, the red flag indicates that there is an active ticket for the DMS Location within this Region. To see details about a specific icon on the map, hold your mouse pointer over it. If there is an active ticket for the entity, information about the ticket is shown when you hover over the icon, as shown above. (If there are multiple active tickets, the one with the highest priority is shown. If there are multiple active tickets with the same highest priority, the newest of those is shown.)

The bottom section shows the number of active tickets and Preventive Maintenance checklists (PMs) for each Location in the Region. You can double-click a Location to open its status display.

## Using the Vehicle Status Display

The status display for Vehicles shows current information for a specific Vehicle "Location", including the current driver, the assets and inventory located on the vehicle, the ticket currently being worked, and the other tickets and PMs for this Vehicle.

Vehicle HYBRID TRUCK #1 - PJ8-F5	56 - Vehicle L	ocation 001		
Current Driver		Driver's Ticket		
Name: Steve Martin Phone: (999) KING-TUT Email: pointybirds@poi	- Í	Ticket # 4 Location: Description:	In Progress i Flashing Beacon Loca damaged sign	tion 1
Login Date/Time: 7/5/2013 12:34:2		Priority: Call Date: ETA: Total Tickets:	High 5/22/2013 4:37:00 PM 6/5/2013 1:25:01 PM 1	
Assets				
Туре	Name		Quantity	*
Paint Remover			1	
🔏 Nails			288	
🎢 Wiring			15	÷
Vehicle Tickets				
Add Edit Close				
#         Description         State           6         /         reckless driving         Image:			ast Updated User Upda /17/2013 16:57 Gil Buckm	
Preventive Maintenance				
Due Date Name			Status	
5/24/2013 12:00:00 AM Truck Ma	-		Past Due	
5/21/2013 12:00:00 AM Truck Ma	lint weekly	1		

### To open the status display:

Double-click the Vehicle in the Entity Tree.

Or

Right-click the Vehicle in the Entity Tree and select Show Status... from the popup menu.

You can open status displays for multiple Vehicles (or other entities) at the same time. You can move them, resize them, and dock them like other windows in Centracs.

### **Current Driver**

This section of the status display shows the name and contact information for the driver currently logged into this Vehicle (if any), and the login date and time.

#### • Using the Vehicle Status Display

### Driver's Ticket

This section shows information about the ticket currently being worked by this driver/ vehicle (if any). You can click the button beside the Location field to open a status display for the Location assigned to this ticket.

#### Assets

This section shows the assets and inventory that are currently on the Vehicle. For assets, the window shows the Type and Name; for inventory, the window shows the Type and Quantity. You can double-click an asset or inventory item to see more information about it. You can also move assets and inventory to another Location by dragging and dropping them to a different Location's status display or to a different Location in the Master Inventory window (page 19-13). (To select multiple assets at a time, hold the **Shift** or **Ctrl** key while you click the assets, or click the gray box at the top left corner of the list to select *all* items. Note that you can move multiple assets at the same time, but you cannot move multiple types of inventory items at the same time.)

#### Vehicle Tickets

This section shows all the active tickets whose assigned Location is this Vehicle. From this section of the window, you can add a new ticket, change an existing ticket, or close a ticket.

#### **Preventive Maintenance**

This section shows all the active PM checklists whose assigned Location is this Vehicle. You can double-click a PM in the list to see the actual checklist, who changed it last, and when it was changed.

Using the Warehouse/Repair Depot Status Display

## Using the Warehouse/Repair Depot Status Display

The status display for Warehouses and Repair Depots shows the map location and the current asset/inventory information for a specific Warehouse or Repair Depot "Location".

Wareho	use - Divide Warehouse - (	SW Loc)		
Assets	Weaver	RC Description: Priority: Call Date:	Accepted power off Normal 6/3/2013 2:49:00 PM Navin Johnson 7/8/2013 10:50:01 AM HYBRID TRUCK #1 - PJ8	-F56
	Туре	Name	Quantity	*
	ASC/3 2070	K99H2Q		
4	Nails		94	=
S	Autoscope-SPII	HJ7856F		
1	Nuts		15	
6	Cabinet		1	
	CCTV/(compare)	kelle comora		Ť

### To open the status display:

Double-click the Warehouse or Repair Depot in the Entity Tree or Map Viewer.

Or

 Right-click the Warehouse or Repair Depot in the Entity Tree and select Show Status... from the popup menu.

You can open status displays for multiple Warehouses or Repair Depots (or other entities) at the same time. You can move them, resize them, and dock them like other windows in Centracs.

The top section of the status display shows an aerial view of the Warehouse or Repair Depot on a map. In the sample shown above, the yellow flag indicates that there is an active ticket for this Warehouse. To see details about a specific icon on the map, hold your mouse pointer over it. If there is an active ticket for the entity, information about the ticket is shown when you hover over the icon, as shown above. (If there are multiple active tickets, the one with the highest priority is shown. If there are multiple active tickets with the same highest priority, the newest of those is shown.)

The bottom section shows the assets and inventory that are currently at this Location. For assets, the window shows the Type and Name; for inventory, the window shows the Type and Quantity. You can double-click an asset or inventory item to see more information about it. You can also move assets and inventory to another Location by dragging and dropping them to a different Location's status display or to a different Location in the

#### Scrap Recycle

Master Inventory window (page 19-13). (To select multiple assets at a time, hold the **Shift** or **Ctrl** key while you click the assets, or click the gray box at the top left corner of the list to select *all* items. Note that you can move multiple assets at the same time, but you cannot move multiple types of inventory items at the same time.)

# **Scrap Recycle**

The Scrap heap is a repository of all the items that have been "scrapped" in Centracs, i.e., all assets and inventory that have been *permanently* put out of service (for example, a burned-out light bulb).

ssets				
	Туре	Name	Quantity	
- 18	Bolts		5	
۴	Bulbs-LED		I	
?	Bulbs-CF		15	
C	Wiring		2	
	Trash Bags		5	
	Nuts		3	
- 4	Nails		6	
Ĩ	Fire Extinguisher		1	
E	Ladder		1	
8	Autoscope-Encore	Encore camera - YE798SFAHF		
<u>~</u>	Road Signs		1	

#### To see the Scrap heap:

Double-click the Scrap Recycle entity in the Entity Tree.

#### Or

Right-click the Scrap Recycle entity in the Entity Tree and select Show Status... from the popup menu.

For assets, the window shows the Type and Name; for inventory, the window shows the Type and Quantity. You can double-click an asset or inventory item to see more information about it.

#### To restore an asset from the Scrap heap:

- **1** Double-click the asset in the Scrap heap to open the Asset Status display.
- 2 Click Move.
- **3** Double-click the new Location for the asset, then click **OK**.
- 4 Enter a reason for un-scrapping the item, then click **OK**.

Scrap Recycle •

**Note** • You cannot restore inventory items from the Scrap heap.

#### To "scrap" an item and move it to the Scrap heap:

- 1 From an Asset's status display or from the Master Inventory window (page 19-13), select the item to scrap.
- 2 Click Scrap.
- 3 Enter a reason for scrapping the item, then click **OK**.

#### To filter the Scrap heap:

- 1 Hold the mouse pointer over the column header of the column you want to filter. A down arrow appears.
- 2 Click the down arrow to display the filter options.
- 3 Enter a string to match, and specify whether to find items that *start* with that string, that *end* with that string, that *equal* that string, that *do not equal* that string, or that *contain* that string anywhere within the field. Text string filters are not case-sensitive.
- 4 Click Filter.

The rows that match your filter are shown; any other rows are hidden from view.

The down arrow in the column header changes to a filter symbol to show that a filter is in effect.

5 If you want to remove your filter and show all data, click **Clear**.

MMS Reports

# **MMS Reports**

## Assets Nearing Expected Failure Report

This report shows assets that are nearing the end of their expected service life. The report shows the date the asset went into service, the expected failure date, and the number of days remaining in its expected service life. To determine the expected failure date for an asset, the report uses the Life Span value for the asset type (from the Type and Field Definitions window) and the Service Date for the asset (from the Asset Status display or Master Inventory window).

	rable Report Options				
rice Da	ays Remaining 365	Location: #1, #2, 1st & Main	i, 2nd & M. 💌	View F	
ion, G	roup, etc.: No Region, Northwest Regio	•			
∢ 1	of 1 🕨 州   🛊 🛞 🚱   🖨 🔲 🕯	🛯 🔍 🔹 Page Width 🔹	Find Next		
Α	ssets Nearing Exp	ected Failure			
No	orthwest Region				
	NW Warehouse	In Service Date	End of Service Date	Service Days R emaining	
	BIU - JASF53	8/1/200	9 8/1/2013	0	
	Load Switch - HTR6F	7/30/200	8 7/30/2013	-2	
	Average Days Remaining In Service				
Re	gion - Average Days Remaining In Service			(1.00)	
So	outhwest Region				
	Electric Vehicle #1	In Service Date	End of Service Date	Service Days R emaining	
	CMU - S/N GEH 754	5/10/200	3 5/10/2013	-83	
	Average Days Remaining In Service			-83	
	SW Warehouse	In Service Date	End of Service Date	Service Days R emaining	
	MMU - S/N KJH WF7F	2/4/200	4 2/4/2014	187	
	2070 Controller - JLHKD87U4	12/27/200	1 12/27/2011	-583	
	Average Days Remaining In Service	1	1	-198	
	gion - Average Days Remaining In Service			(159.67)	

Option	Description
Service Days Remaining	Example: If you set Service Days Remaining to 365, the report shows all assets expected to fail within the next year, including assets that have already surpassed their expected service life.
Region, Group, etc.	Select one or more Location groupings to include in the report.
Location	Select one or more Locations to include in the report.

## Assets Past Expected Failure Report

This report shows assets that have passed the end of their expected service life. To determine the expected failure date for an asset, the report uses the Life Span value for the asset type (from the Type and Field Definitions window) and the Service Date for the asset (from the Asset Status display or Master Inventory window). The report shows the expected life span of the asset (in days), the number of days the asset has been in service, and the number of days the asset has remained in service after its expected failure.

Assets Past Expected Failure							
+ Configurable Report Options							
Region, Group, etc.: 03 DMS, 61 CAM   Locations: 03LAF0399 (I-49 @ PINHOO  View Report							
4 4 1 of 1 ▶ ▶    4 ⊗ 🤅		- Find	Next				
Assets Past Expe	cted Failure			^			
03 DMS							
03LAF0399 (I-49 @ PINHOOK RD	Expected Life Span (Days)	Days in service	Days past expected failure	Ξ			
001376	1095	1485	389				
Average days past expected failure			389				
Region - Average Days Past Fail			389				
61 CAM							
61EBR0188 (I-10 @ COLLEGE DR	Expected Life Span (Days)	Days in service	Days past expected failure				
000035	1095	1714	618				
000037	1460	1636	175				
Average days past expected failure			396				
Region - Average Days Past Fail			396	-			
•			4				

Option	Description
Region, Group, etc.	Select one or more Location groupings to include in the report.
Locations	Select one or more Locations to include in the report.

• Asset and Inventory Counts Report

## Asset and Inventory Counts Report

For each Location, and for each asset/inventory type, this report shows the number of 'In Service' assets/inventory, the number of 'Out Of Service' assets/inventory, and the percent that are out of service. The report also shows overall totals for the entire System.

<u> </u>	- Asset and Inventory Counts						
$(\pm)$	E Configurable Report Options						
	Asset:     2070 Controller, BIU, CMU, L ▼     Out Of Service >=     0%     ▼       Region, Group, etc.:     Colorado Springs     ▼						
И	I						
	Asset And Inventory Counts						
С	olorado Springs						
	Туре	In Service	Out Of Service	Total	Out Of Service%		
	СМИ	0	1	1	100%		
	LED	0	1	1	100%		
L	Load Switch	0	1	1	100%		
L	NEMA Cabinet	0	1	1	100%		
	BIU	1	2	3	66%		
L	2070 Controller	1	1	2	50%		
	Mast Arm	1	1	2	50%		
	Sign	5	3	8	37%		
	Pole	2	1	3	33%		
	Ped Detector	8	2	10	20%		
	MMU	1	0	1	0%		
	NEMA Controller	1	0	1	0%		
	VEHICLE	1	0	1	0%		
To	vtal	21	14	35	40%		
С	olorado Springs						
	3rd & Cucharras	In Service	Out Of Service	Total	Out Of Service%		
	BIU	0	1	1	100%		
	Sign	2	1	3	33%		
	2070 Controller	1	0	1	0%		
	PedDetector	4	0	4	0%		
	Pole	1	0	1	0%		
	3rd & Main	In Service	Out Of Service	Total	Out Of Service%		
	LED	0	1	1	100%		
	Sign	3	2	5	40%		
F	BIU	1	0	1	0% -		
•		III			•		

Asset and Inventory Counts Report •

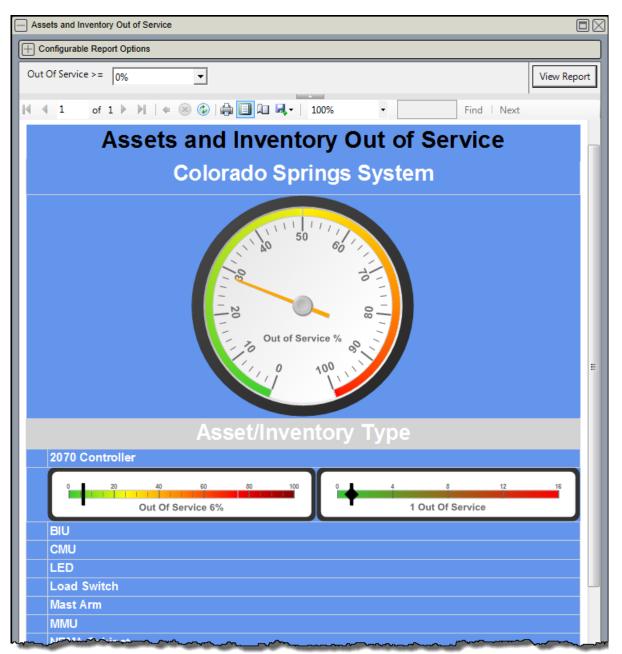
Option	Description
Asset	Select one or more asset/inventory types to include in the report.
Region, Group, etc.	Select one or more Location groupings to include in the report.
Out Of Service >=	To see information for all assets/inventory in the system, set the "Out Of Service >=" option to 0%. Or, for example, to see information for only the asset/inventory types that have 50% or more out of service, set the "Out Of Service >=" option to 50%.

Assets and Inventory Out Of Service Report

## Assets and Inventory Out Of Service Report

The top section of this report shows a dial representing all assets and inventory in the system; the pointer shows the percentage of those assets/inventory that are currently marked as "out of service".

The bottom section of the report shows two graphs for each asset/inventory type; each set of graphs can be shown or hidden individually. In this example, only the graphs for 2070 Controllers are shown. The graph on the left represents all the 2070 controllers in the system, and shows the percentage that are currently marked as Out of Service (in this case, 6%). The graph on the right shows that the total number of 2070 controllers in the system is 16, and that 1 of them is marked as "out of service".



Average Response Times Report

To run the report, specify these options:

Option	Description
Out Of Service >=	To see graphs for all assets/inventory in the system, set the "Out Of Service >=" option to 0%. Or, for example, to see graphs for only the asset/inventory types that have 50% or more out of service, set the "Out Of Service >=" option to 50%.

### Average Response Times Report

This report shows statistics about Call ticket handling. A ticket is included in this report only if it meets these conditions:

- Must be a Call ticket
- Must currently have a status of "Closed"
- Must have been open for longer than 1 minute
- Must have been marked as "Started" at some point
- Must have been marked as "Arrived" at some point

Average Response						
+ Configurable Report Op	otions					
Start Date & Time	4/24/2013 11:09:28 AN	<u>л</u>	End Date & Time	4/25/2014 11:09:28 AM		View Report
Regions, Groups, etc:	02, 02 ALL, 02 CAM, 0	2 DMS 🔻	Location Type:	CCTV Location	•	
Technician:	Econolite User	•				
🖣 🖣 1 of 2 🕨	🕨   🗧 🛞 🚱	🔅 🔲 ն 🗟	• 100%	• Find	Next	
Average F	Response	e Time	5			*
· · · · · · · · · · · · · · · · · · ·			-			
CCTV Location						
Number of Calls				3		
Number of Calls				5		=
Travel Time Hours			1.4	0		
On Site Hours			1.1	D		
Total Hours Spent			2.5	0		
Avg Response Time	Hours Per Call		0.9	3		
g reoponde rinte						
Avg On Site Hours F	Per Call		0.3	7		
			0.3	-		
Avg On Site Hours F				3		
Avg On Site Hours F Avg Total Hours Per			0.8	3		

### Average Response Times Report

### The report shows:

Field	Description
Travel Time Hours	The total number of hours from when the tickets were marked Started to when the tickets were marked Arrived.
On Site Hours	The total number of hours from when the tickets were marked Arrived to when the tickets were marked Closed.
Total Hours Spent	The sum of Travel Time Hours and On Site Hours.
Avg Response Time Hours Per Call	The average number of hours from when the tickets were marked Dispatched to when the tickets were marked Arrived.
Avg On Site Hours Per Call	On Site Hours divided by Number of Calls.
Avg Total Hours Per Call	Total Hours Spent divided by Number of Calls.
% Travel Time Per Call	Travel Time Hours divided by the total time the tickets were in progress (i.e., from the time the tickets were Started until the time the tickets were Closed), multiplied by 100.
% On Site Per Call	On Site Hours divided by the total time the tickets were in progress (i.e., from the time the tickets were Started until the time the tickets were Closed), multiplied by 100.

Option	Description
Start Date/End Date	Selects tickets that were closed within the specified date/time range.
Regions, Groups, etc.	Select one or more Location groupings to include in the report.
Location Type	Select an entity type to include in the report.
Technician	Select the user/technician(s) who closed the tickets.

Dispatch History Report

## Dispatch History Report

ingulubi	e Report Options							
Date & T ate & Tir	ime: 7/21/2013 4:40:45 me Filter Yes	PM End Da	te & Time: 8/1/2013 4:40 Call Tickets, V	45 PM				
n, Group	Prince Herbert, Ro o, etc.: 9 *, No Region, N		#1, #2, 10 *, 1	st & Main, 2nd ▼				
1	of 2 🕨 🎽   🖷 🛞 🔮	)   🚓 🔲 💷 🔍 - 📔 Pag	e Width 🔹	Find   Next				
7/2	ne Range 1/2013 4:40:45 PM-8/1/2013 4 west Region	:40:45 P M						
	3rd & Cucharras Ticket	Description		Status.		Туре	Discrete Data Tima	
	Ticket	Description					Dispatch Date Time	
		4 graffiti		Accepted	Accepted Cai		8/1/2013 5:00:52 PM	
	3rd & Main							
	Ticket	Description		Status		Туре	Dispatch Date Time	
		3 signal in flash		Arrived		Call	8/1/2013 4:38:47 PM	
	User	Update Date Time	Found on Arrival	Work Performed	ETA	Priority	Caller Number	
	Roger the Shrubber	8/1/2013 5:10:11 PM	Confirmed signal is in flash due to MMU conflict		8/1/2013 5:05:01 PM	High	217-8547	
	User	Update Date Time	Found on Arrival	Work Performed	ETA	Priority	Caller Number	
	Roger the Shrubber	8/1/2013 4:48:46 P M			8/1/2013 5:05:01 PM	High	217-8547	
	Cimarron @ 21 st							
	Ticket	Description		Status		Туре	Dispatch Date Time	
		1 power off		Scheduled		Call	7/29/2013 4:32:00 PM	
			Hwy 24 - Cascade					
		Description		Status		Туре	Dispatch Date Time	

This report shows status information about the tickets for each Region and Location.

Option	Description
Start Date/End Date	Selects tickets whose Call Date is within the specified date/time range.
Use Date & Time Filter	To show only tickets whose Call Date is within a specific time range, set the Use Date & Time Filter field to Yes, and specify the range in the Start Date & Time and End Date & Time fields. Or to show all tickets regardless of date, set the Use Date & Time Filter field to No.
Туре	You can filter the report to show call tickets, work orders, tickets found on-site, or all of the above.
Users	You can view only those tickets modified by specific users, or you can view all tickets modified by any user.

Moved Assets Report

Option	Description
Locations	Select one or more Locations to include in the report.
Region, Group, etc.	Select one or more Location groupings to include in the report.

## Moved Assets Report

This report shows assets that have been moved in Centracs from one Location to another.

If the "Use Date & Time Filter" option is set to Yes, only assets moved within the specified time frame are shown; if the option is set to No, all moved assets are shown.

You can view only those assets moved by specific users, or you can view all assets moved by any user.

Moved Assets     Configurable Report O	ptions						
Start Date & Time: Use Date & Time Filter Users:	8/1/2013 11:3 Yes Prince Herbe	16:53 AM		/1/2013 10:36:53 PM Ascending			View Report
Moved As		0 4 9 4 5	• 100% •	Find	Next		
Name	Quantity	From	То	User	Timestamp	Comment	
CMU - S/N GEH754		1 SW Warehouse	Electric Vehide #1	Roger the Shrubber	8/1/2013 3:33:56 PM	transport to repair depot	
Load Switch - HTR6F		1 NW Warehouse	Electric Vehicle #2	Sir Lancelot	8/1/2013 4:17:43 PM	transport to repair depot	
•	•	•	•		•	·	•

Option	Description
Start Date/End Date	Selects assets that were moved within the specified date/time range.
Use Date & Time Filter	To show only assets whose move date is within a specific time range, set the Use Date & Time Filter field to Yes, and specify the range in the Start Date & Time and End Date & Time fields. Or to show all asset moves regardless of date, set the Use Date & Time Filter field to No.
Sort by Date & Time	Assets are sorted by the Timestamp column (i.e., the date and time they were moved). Specify whether to sort them in ascending order or descending order.
Users	You can view only those assets moved by specific users, or you can view all assets moved by any user.

# PM Coming Due Report

This report shows the last modified date, due date, and number of days until the due date for all Preventive Maintenance Checklists that have been scheduled and are still open. If a PM is past due, the "Days Until Due" column shows the number of days beyond the due date.

**Note** • Checklists that are scheduled to start on a future date are not included in the report.

PM Coming Due						
Configurable Report Options					_	
Days until due     30     Locations:     044 Arapahoe & Yosemite (/      View Report       Region, Group, etc.:     CDOT RWIS Locations, City <     View Report						
◀ ◀ 1 of 3 ▶ ▶    ♦	🛞 🚱 🚔 🔲 🛍 🔍 -   1	.00% -	Find Nex	t		
PM Coming D	ue					^
CDOT RWIS Locations						
070W304 Bennett RWIS (Ben	nett RWIS)					
Name	User Name	Last Modified	DueDate	Days Until Due		
Full RWIS PM	System	04/01/2014	04/30/2014		15	=
Full RWIS PM	System	03/01/2014	03/30/2014	PastDue (-16 days)		
Full RWIS PM	System	12/01/2013	12/30/2013	Past Due (-106 days)		
070W384 Cedar Point (Cedar	Point RWIS)	-	I	I		
Name	UserName	Last Modified	DueDate	Days Until Due		
Full RWIS PM	System	04/01/2014	04/30/2014		15	
Full RWIS PM	System	03/01/2014	03/30/2014	PastDue (-16 days)		
070W405 Seibert RWIS (Sieb	ert RWIS)		1	1		
Name	User Name	Last Modified	DueDate	Days Until Due		
Full RWISPM	System	04/01/2014	04/30/2014		15	
Full RWISPM	System	03/01/2014	03/30/2014	PastDue (-16 days)		
DMS			·	·		
070E358 West Limon (West L	imon DMS EB)					Ŧ

PM Coming Due Report

Option	Description
Days until due	Tips on using this option:
	Leave blank to show all PMs.
	Set to 0 to show PMs due today.
	<ul> <li>Set to a negative number to show PMs that are overdue by that number of days (or more).</li> </ul>
	<ul> <li>Set to a positive number to show PMs that are due in that number of days (or less).</li> </ul>
Locations	Select one or more Locations to include in the report.
Region, Group, etc.	Select one or more Location groupings to include in the report.

## PM Progress Report

This report shows the current status, due date, and last modified date for all Preventive Maintenance Checklists that have been scheduled.

**Note** • Checklists that are scheduled to start on a future date are not included in the report.

PM Progress						
Configurable Report Options						
Sort by Due Date Yes Region, Group, etc.: Northwest Region,						
M 4 1 of 2 M 4 S ( PM Progress Southwest Region	)   <b>                    </b>	00% <del>-</del>	Fi	ind   Next	^	
Cimarron @ 21st					≡	
Name	U ser Name	Last Modified	DueDate	Status		
Flashing Beacon Inspection	Roger the Shrubber	01/29/2014	01/31/2014	Completed		
Cimarron @ I-25		1		I		
Name	U ser Name	Last Modified	DueDate	Status		
Ramp Meter Inspection	Roger the Shrubber	01/24/2014	01/24/2014	Past Due		
Flashing Beacon Inspection	hing Beacon Inspection Roger the Shrubber 01/29/2014 01/31/2014 Assigned					
Hwy 24 - Cascade	-			·		
Name	U ser Name	Last Modified	DueDate	Status		
Flashing Beacon Inspection	Roger the Shrubber	01/29/2014	02/06/2014	In Progress		
Woodmen @1.25		ı			•	

Option	Description
Sort by Due Date	If set to Yes, checklists are sorted by the Due Date column within each Location, in ascending order. If set to No, checklists are sorted by the Last Modified date, in descending order.
Region, Group, etc.	Select one or more Location groupings to include in the report.

PM Progress Report

Option	Description
Status	The current status of the PM checklists you want to see:
	Assigned
	In Progress
	Completed
	Past Due
	You can select one or more statuses.
Locations	Select one or more Locations to include in the report.

Project Activity Report

## Project Activity Report

You can generate four different Project Activity reports:

- Call Tickets
- Work Order Tickets
- Found On-Site Tickets (submitted by a technician via the mobile app)
- Preventive Maintenance (PM)

The report can be used to see *all* activity that has taken place on tickets/PMs, or only the *most recent* activity that has taken place.

Project Activity									
+ Configurable Report	rt Options								
Start Date & Time:	1/1/2014 6:21:11 F	m 🛄	End Date & Time:	1/!	15/2014 6:21:11 PM			View Rep	ort
Entity State:	Active	•	Use Date & Time F	Filter: Ye	s 💌				_
Activity Type:	Work Order Tickets	-	Assigned User/Te	chnician: Lo	uis Litt	•			
Last Updated By:	Louis Litt	•	Locations:	02	JEF0100 (I-10 @ CLEARV	IE\ 💌			
Region, Group, etc.:	61 CAM	•	Row Limit:	50	0 🔹				
Most Recent Status	No	•	Status	Sci	heduled, Dispatched	•			
4 4 1 of 2	▶ <b>)</b>   ← ⊗ ۞	a 🛛 🖬 🔍 -	100%	-	Find   Next				
Designet	N - 411 - 114 - ////		an Tiaka	4-1					
Project	Activity (W	ork Ura	er licke	(S)					
Time Range 1/1/2014 6:21:11 Pl	M-1/15/2014 6:21:11 PM	1							
61 CAM									• III
	(US 190 (FLORIDA BLVD.)	@ S. FLANNE RY RD	(DETEL))						
Ticket	Description	Assigned	ETA	Status	Found on Arrival	Work Performed	Dispatch Date/Time	Last Updated by	
Number 28	8 Camera has no PTZ.	User/Technician Louis Litt		Closed	all devices working	Royable to move PTZ	12/20/2013 10:18:31 AM		18
28	8 Camera has no PTZ.	Louis Litt	AM 1/15/2014 8:50:01	Arrived	properly	camera	12/20/2013 10:1831 AM		-
28	8 Camera has no PTZ.	LouisLitt	AM 1/15/2014 8:50:01	Started			12/20/2013 10:1831 AM	8:52:55 AM Louis Litt 1/15/2014	- 11
			AM					8:52:51 AM	_
	8 Camera has no PTZ.	Louis Litt	1/15/2014 8:50:01 AM	Accepted			12/20/2013 10:18:31 AM	Louis Litt 1/15/2014 8:52:46 AM	
	(I-12 @ MILLER VILLE RD								
Ticket Number	Description	Assigned User/Technician	ETA	Status	Found on Arrival	Work Performed	Dispatch Date/Time	Last Updated by User	
25	3 EBRamp Camera is facing the sky.	Louis Litt	1/2/2014 3:55:01 PM	Closed	all cameras are facing the correct direction.	Checked cameras via 511.0rg and ALL cameras are facing the correct direction. No cameras are "facing the sky"	12/12/20131:30:31 PM	Louis Litt 1/2/2014 3:57:44 P M	
		l			i	1	i		

Sample Project Activity Report for Work Orders

Tickets are sorted by ticket number then by date; PMs are sorted by Last Updated date.

Option	Description
Start Date & Time/ End Date & Time	Filters the tickets or PMs by their Last Updated date/time.
Entity State	Specify whether to include only active entities, only deleted entities, or both in the Region, Group, etc. dropdown.

Project Activity Report

Option	Description
Use Date & Time Filter	To show only tickets/PMs whose Last Updated Date is within a specific time range, set the Use Date & Time Filter field to Yes, and specify the range in the Start Date & Time and End Date & Time fields. Or to show all tickets/PMs regardless of date, set the Use Date & Time Filter field to No.
Activity Type	Select the type of records to include in the report: Call Tickets, Work Order Tickets, Found On-Site Tickets, or Preventive Maintenance (PMs).
Assigned User/ Technician	For PMs, the Assigned User/Technician field selects PMs that are <i>currently</i> assigned to that user or group. (Note that if you select a group name, the report will show only the PMs that are directly assigned to that group name; it will not show PMs assigned to specific users who are members of that group.)
	For tickets, the Assigned User/Technician field selects tickets that were assigned to that user at any time during the ticket's history. (Note that tickets cannot be assigned to a group.)
Last Updated By	Select the user who made the most recent change to the ticket/ PM.
Locations	Select one or more Locations to include in the report.
Region, Group, etc.	Select one or more Location groupings to include in the report.
Row Limit	Optionally, use this field to limit the amount of data returned by the report query. For large systems, this will improve the performance of the report.
Most Recent Status	For items with a great deal of activity, this option shows only the most recent activity for each status type. For example, if a ticket has been closed and reopened multiple times, this option will show only the most recent time it was opened, and the most recent time it was dispatched, and the most recent time it was closed, etc. If this option is set to No, all activity will be shown, so you might see multiple dispatches for the same ticket, multiple closures, etc.
	When this option is set to Yes, all statuses are included, regardless of what you selected in the Status dropdown.
Status	Select one or more statuses to include in the report. For example, if you are running the report for Call Tickets, and if you select only the Dispatched status, the report will show only the dispatch activity for the tickets; it will not show when the tickets were Accepted, Started, Closed, etc. To see all activity, select all statuses.

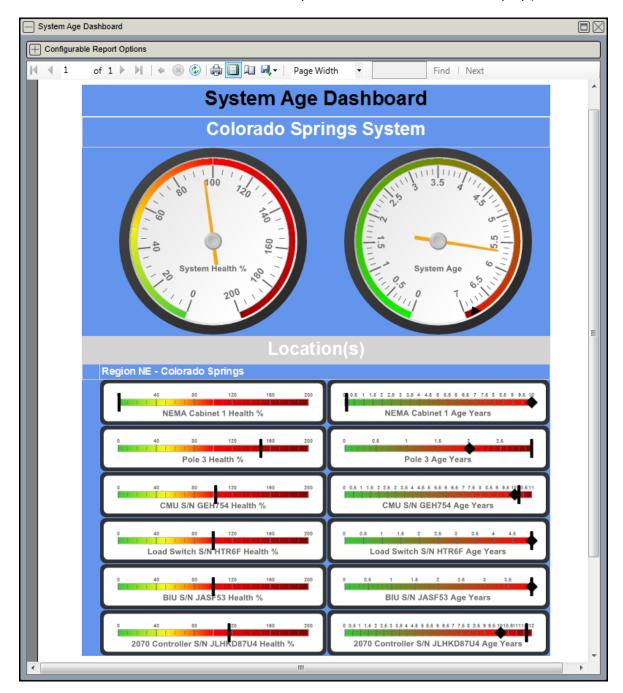
System Age Dashboard Report

### System Age Dashboard Report

This dashboard report graphically shows you the overall age and health of the assets in your system (green = young, red = old).

The report includes only assets that have a Service Date defined. All inventory items, and all assets without a Service Date, are excluded from the report.

The age of an asset is calculated as the asset's Life Span minus the asset's Service Date. (Life Span is defined for each asset type on the Type and Field Definitions window. Service Date is defined on the Master Inventory window or the Asset Status display.)



System Performance Dashboard Report

The Locations section of the report shows the age and health of each individual asset; the dials at the top of the report show the average age and health of all the assets combined.

The black diamond on each Age scale is the asset's Life Span.

The black triangle on the System Age dial is the average of the Life Spans for all the assets.

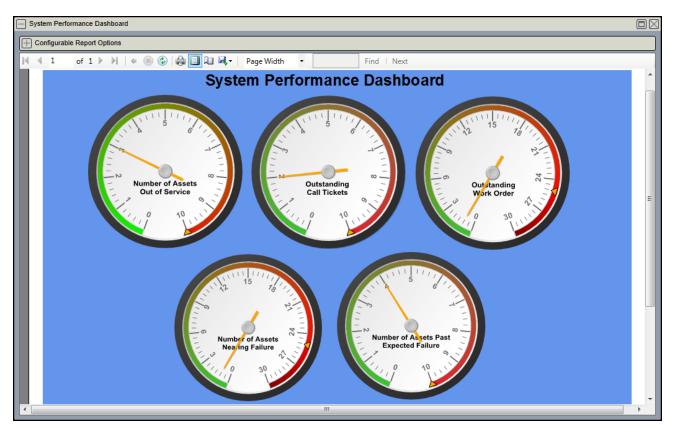
In the example shown above, the 2070 Controller is expected to be in service for 10 years, but it has already been in service for almost 12 years. Therefore, the Health % for the 2070 Controller is greater than 100%.

### System Performance Dashboard Report

This dashboard report graphically shows you the number of:

- assets out of service
- assets nearing expected failure
- assets past expected failure
- outstanding call tickets
- outstanding work orders

The small yellow triangle on each dial shows the current threshold setting for that dial. For details, refer to *Configuring the MMS Settings* on page 19-3.



System, Region, and Location Values Report

## System, Region, and Location Values Report

This report shows the original value and the current depreciated value of each asset in the system — grouped by Region, then by Location.

The report shows assets only (not inventory, because Centracs does not calculate depreciation for inventory items).

**Note** • Original values and depreciation rates are defined for each asset type on the Type and Field Definitions window (page 19-5).

-	etc.: Northwest Region, Southwe  Location	ons: #1, #2, 1st & Main, 2nd & M. 🔻	Vi
	Northwest Region, Southwe	#1, #2, 15t & Main, 2nd & M	
1	of 1 🕨 🗏   🖨 🛞 🚱   🖨 🔲 💷 🔍 -	Page Width	Next
Sys	tem, Region, and Loca	tion Values	
Vorthv	vest Region		
N	W Warehouse	Original Value	Depreciated Value
E	8U - S/N JASF53	\$1000.0	0 \$0.00
Т	otal Location Cos t	\$1000.0	\$0.00
Т	otal Region Cost	\$1000.0	00 \$0.00
South	west Region		
3	rd & Main	Original Value	Depreciated Value
2	070 Controller - S/N BJHDSW65	\$10000.0	0 \$8864.97
N	1MU - S/N DFGD5	\$3000.0	0 \$761.10
L	oop Detector - S/N GJHKGD	\$1500.0	0 \$1359.45
N	IEMA Cabinet - S/N DS76	\$5000.0	0 \$4528.77
P	Ped Detector - S/N ETRW4	\$800.0	0 \$645.26
Т	otal Location Cos t	\$20300.0	\$16159.55
s	W Warehouse	Original Value	Depreciated Value
N	1MU - S/N KJHWF7F	\$3000.0	0 \$0.00
Т	otal Location Cos t	\$3000.0	\$0.00
T	otal Region Cost	\$23300.0	90 \$16159.55
	stem Cost	\$24300.0	00 <b>\$</b> 16159,55

To run the report, specify these options:

Option	Description		
Region, Group, etc.	Select one or more Location groupings to include in the report.		
Locations	Select one or more Locations to include in the report.		

Trending Count Report

### Trending Count Report

This report allows you to track the number of new tickets opened and the number of tickets closed over a specified date range. You can run the report for Call tickets or for Work Orders. A ticket is included in this report only if it meets these conditions:

- Must currently have a status of "Closed"
- Must have been open for longer than 1 minute
- Must have been marked as "Started" at some point
- Must have been marked as "Arrived" at some point

Trending Count								$\ge$
E Configurable Re	port Options							
Start Date:	6/6/2014		End Date:	6/20/2014			View Report	1
Granularity:	Day	•	Activity Type:	Work Order Tickets 💌				1
Regions, Groups, et	c: 02, 02 ALL, 02	CAM, 02 DMS, ( 💌	Status:	New, Closed	•			I
Technician:	Trial Group, De	tel Group, ITS L 💌	Averages over:	Day				I
Include Averages:	Yes	•	Include data table:	Yes 💌				I
<b>4 4</b> 1 of	4 🕨 🎽   👄 (	8 🕲   🖨 🔲 A	100%	- Fin	d   Next		1	1
Trending					- 1 1000C			
Inchang	y count	Report						
				Day Chart				
20 –	1						New	L
							Closed	L
15 -								I
tino								L
– 01 Icket								L
								I
5-				$\langle \rangle$		_		L
0								L
		6.8/2014 -	6/9/2014 -	2014 -	2014 -	2014 -		I
		6/6/2	997	6A 0/2014	6/17/2014	6/20/2014		I
				Granularity				I
								I
Summary	Total	Average						L
Daily	31	6.20						I
	New	Closed						
6/6/2014	1	0						
6/9/2014	8	15						
6/10/2014	1	0						
6/17/2014	2	1						
6/20/2014	0	3						
Totals	12	19					•	·
								]

Sample Trending Count report using the Day option

Trending Count Report •

To run the report, specify these options	s:
------------------------------------------	----

Option	Description
Start Date/ End Date	Enter the date range.
Granularity	Select one of the options below:
	<ul> <li>Day – A data point is shown for each day that had ticket activity within the specified date range.</li> </ul>
	Week – A data point is shown for each week that had ticket activity within the specified date range. (On the X axis of the graph, the weeks are labeled by week number. For example, the 2nd week of 2015 is shown as 02/2015.)
	<ul> <li>Month – A data point is shown for each month that had ticket activity within the specified date range.</li> </ul>
	<ul> <li>Quarter – A data point is shown for each three-month period that had ticket activity.</li> </ul>
Activity Type	Select the type of tickets to include in the report: Call Tickets or Work Order Tickets.
Regions, Groups, etc.	Select one or more Location groupings to include in the report.
Status	Select the type of ticket activity to show in the report:
	New – Shows the opening of new tickets.
	<ul> <li>Closed – Shows the closing of existing tickets.</li> </ul>
Technician	Select the user/technician(s) who closed the tickets.
Averages Over	This option is set automatically when you select a Granularity.
Include Averages	Specify whether to show the Summary/Total/Average table.
Include Data Table	Specify whether to show the New/Closed Totals table.

In the first table below the report:

- Total is the total number of ticket activities ("opens" and "closes") included in the report.
- Average is the total number of ticket activities divided by the total number of days (or weeks, months, quarters) shown on the X axis.

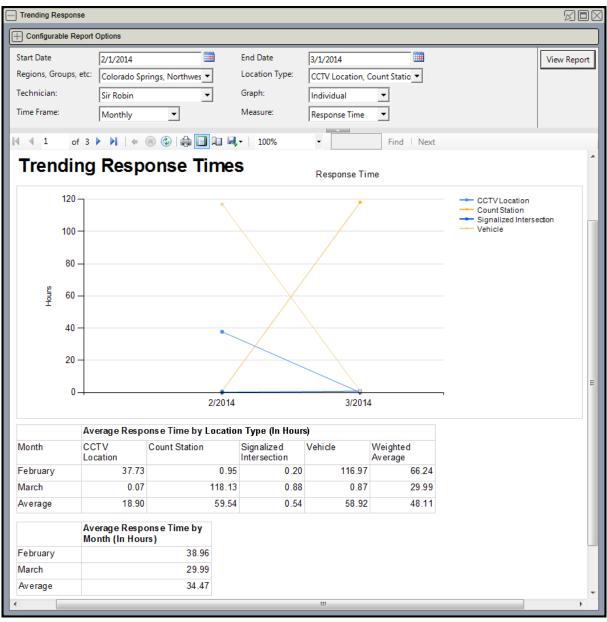
The second table below the report shows the number of New and Closed tickets for each day (or week, month, quarter) shown on the X axis. The bottom row shows grand totals of New tickets and Closed tickets. Note that if a ticket is both opened *and* closed within the selected date range, that ticket is counted twice—once under the New column and once under the Closed column.

• Trending Response Times Report

### Trending Response Times Report

This report shows statistics about Call ticket handling. A ticket is included in this report only if it meets these conditions:

- Must be a Call ticket
- Must currently have a status of "Closed"
- Must have been open for longer than 1 minute
- Must have been marked as "Started" at some point
- Must have been marked as "Arrived" at some point



Sample Trending Response Times report using the Monthly option

Trending Response Times Report

To run the report, specify these options:

Option	Description				
Start Date/ End Date	Enter the date range. If you set the Time Frame to Monthly or Weekly, the range must include the first day of the period in which the tickets were closed.				
	Examples:				
	<ul> <li>If you set the Time Frame to Monthly, and if you want to see statistics for tickets closed at the end of October 2015, the Start Date must be 10/1/2015 or earlier</li> <li>Or</li> </ul>				
	<ul> <li>If you set the Time Frame to Weekly, and if you want to see statistics for tickets closed during the last week of October 2015, the Start Date must be 10/25/2015 or earlier. (Sunday is considered the first day of the week.)</li> </ul>				
Regions, Groups, etc.	Select one or more Location groupings to include in the report.				
Location Type	Select one or more entity types to include in the report.				
Technician	Select the technician(s) to include in the report. Call tickets will be shown in the report only if they were currently assigned to this technician at the time they were closed (regardless of which technician actually closed the tickets).				
Graph	Select the type of graph to draw:				
	Individual – Includes a line for each Location type.				
	<ul> <li>Combined – Includes a line for each Location type plus a line for the weighted average of all Location types.</li> </ul>				
Time Frame	Select one of the options below:				
	Weekly – An averaged data point is shown for each week within the specified date range. (On the X axis of the graph, the weeks are labeled by week number. For example, the 2nd week of 2015 is shown as 02/2015.)				
	<ul> <li>Monthly – An averaged data point is shown for each month within the specified date range.</li> </ul>				
	<ul> <li>Quarterly – An averaged data point is shown for each three- month period.</li> </ul>				
	<ul> <li>Yearly – An averaged data point is shown for each year within the specified date range.</li> </ul>				

• Trending Response Times Report

Option	Description
Measure	Select one of the options below:
	<ul> <li>Response Time – Graphs the average number of hours from when the tickets were marked Dispatched to when the tickets were marked Arrived.</li> </ul>
	<ul> <li>Travel Time – Graphs the average number of hours from when the tickets were marked Started to when the tickets were marked Arrived.</li> </ul>
	<ul> <li>On Site Time – Graphs the average number of hours from when the tickets were marked Arrived to when the tickets were marked Closed.</li> </ul>
	Total Time – Graphs the sum of Travel Time and On Site Time.

The first table below the graph shows the actual numerical values that were plotted on the graph, along with the overall average for each Location type. The Weighted Average is plotted only if you select a Graph type of "Combined".

The Weighted Average is the sum of all the Location types divided by the number of tickets.

The second table shows the overall average for each time period (month, quarter, or year), as well as the overall average for the entire date range.

#### Managing Assets Using MMS

Trending Response Times Report

#### Managing Assets Using MMS

Trending Response Times Report

#### Managing Assets Using MMS

Trending Response Times Report



# **Centracs Administration**

# **Administrative Settings**

On the Settings window, administrators can configure and customize various settings for the Centracs system. The settings described below are accessed from the File ▶ Settings menu option.

### Organization Information

This tab shows the name, location, and function of this installation of Centracs. (The ID field is for the Center-to-Center module only.)

### Active Directory Settings

This tab allows an administrator to configure Centracs to use Microsoft's Active Directory (AD) service for directory-based identity-related services. If you choose to use AD, you do not have to configure user accounts on the User Configuration window in Centracs. Instead, you can simply map a Centracs User Role to an AD group. This capability allows for better security of your system, and allows you to maintain user accounts all in one place (instead of maintaining users at the operating system level *and* in Centracs). For details, refer to *Configuring the Active Directory Service* on page 20-27.

### Licensing

This tab contains information about the current licenses you have for the Centracs system and modules. Only Econolite personnel can edit these values. Administrators can see which modules are licensed as well as any maximum limits on the number of field devices and Server-to-Server configurations permitted (based on the license agreement with Econolite). Examples of modules that must be licensed are Traffic Responsive, the Synchro/UTDF interface, Centracs Adaptive, MOE reports, Cohu and ACTi cameras, Dynamic Message Signs (DMS), BlueTOAD, Center-to-Center, and Server-to-Server.

#### SMTP Servers

Before Centracs can send offline alerts via email and SMS text messages, you must configure the email servers through which messages will be sent and received. You must configure settings for each outgoing SMTP server Centracsand incoming POP server.

#### Autoscope Settings

(Incoming POP server settings are necessary in order to receive alert acknowledgements back from offline recipients via email or SMS text message.) For details, refer to *Defining SMTP and POP Servers* on page 20-67.

#### Autoscope Settings

Controls the behavior of Autoscope detectors in Centracs DCMS. For details, refer to *Global Autoscope Settings* on page 17-6.

#### ECPI Tile Server

This tab specifies the settings for the GIS (Geographic Information System) map tiles used for this Centracs installation. To add images to your maps in Centracs, the map tile server must be installed, and the ECPI Tile Server settings must be configured to point to it.

Use the ECPI Tile Server tab to configure your map tile services and to specify whether to use tile caching. Centracs can use a variety of GIS databases, such as:

- Navtec
- ArcGIS
- Shape Files

- Settings	
Organization Information	Set the location and view details of the ECPI tile server
SMTP Servers	ECPI tile servers can provide custom map images and cached access to other map providers like Virtual Earth. Tile Service Location
ECPI Tile Server Password Strength	Primary http://12.25.110.67:85
Confirmation Dialogs	First server name or IP and port of ECPI tile server.
Action Priorities Preempts	Secondary http://12.25.110.67:85 Optional server name or IP and port of ECPI tile server. This is typically used for an externally facing tile server.
Detector Settings BlueTOAD™	Tile Service Caching
Support Services	MapDotNet Web Map Service Bing
Offline Alert Format	Enable Caching Settings Service Location net.tcp://12.25.110.67:86 Optional server name or IP and port of ECPI tile server. This is typically used for an externally facing tile server. Max Cache Size 512 MB Current Cache Size 0.00 MB Current Tile Count 0 Tile Purge Interval 5 mins Tile Request Timeout 30000 ms Refresh Stats Purge Tile Cache
	Close

Password Strength

**Note** • When "Enable Caching" is turned on, maps are cached to memory, not to disk.

For more information, refer to Adding Images to the Map on page 5-36.

#### Password Strength

This tab sets the password requirements for all users of the system. Centracs enforces the password policy specified on this tab when a user changes their password. For details, refer to *Setting Password Requirements* on page 20-24.

### **Confirmation Dialogs**

Some actions in Centracs require confirmation, such as moving an entity within the Entity Tree. When you do one of these actions, Centracs shows a confirmation dialog to ask whether you are sure you want to continue. Optionally, you can use the Confirmation Dialogs tab to turn off some or all of these confirmation dialogs. For details, refer to *Turning Confirmation Dialogs On/Off* on page 2-26.

Action Priorities

#### Action Priorities

This window controls how the system prioritizes various actions and commands. To open this window, select **File ▶ Settings** from the main menu, then select the Action Priorities tab.

**Note** • In most cases, it is not necessary for you to change the settings on this window.

The four settings at the top of the window determine the relative priorities of various commands in Centracs. If two different types of commands run at the same time for the same entity, the Action Priorities tab determines which will take precedence. For most installations, the default values shown below are appropriate — it is not necessary to change them.

Settings					
Organization Information	Set priorities of action co	ommands	s (from 1 to 255, with 255 being th	ne hiş	ghest priority).
SMTP Servers	Manual Command	255			
ECPI Tile Server	Scheduled High	128			
Password Strength	-	_			
Confirmation Dialogs	Scheduled Normal	127			
Action Priorities	Traffic Algorithm	200			
Preempts					
Detector Settings	Prioritize the entities b				
BlueTOAD™	Each column represents a le this priority determines whic		entity tree. If the settings above do not reso executed.	lve co	onflicting actions at the same entity level,
Support Services					
Offline Alert Format					
MMS Settings	System		! Eagle		A BlueTOAD™ DCS Devices
Default Comm Parameters	Lake County Passage	F		ā	
		- B	! Econolite		🚴 BlueTOAD™ Link Pairs
		34	BlueTOAD™	Ш	🚴 BlueTOAD™ Routes
		3	Autoscope Locations	Ш	Aptakisic - Brandywyn to Pai
			ECON 20 TRP IL 137 TRP Testing	Ш	Butterfield - Allanson to IL 13
			Aptakisic - Brandywyn to Parkway	H	Cedar Lake - Hart to Roseda
		11	Belvidere - Pioneer to Sheridan 11		Deerfield - Buffalo Grove to E
	0				
					Save Cancel Edit
					Close

The Action types are:

- Manual Command a one-time command or override; for typical installations, manual commands are given the highest priority.
- Scheduled High schedule entries that have a priority of "High".
- Scheduled Normal schedule entries that have a priority of "Normal".
- Traffic Algorithm commands started by Traffic Responsive or Centracs Adaptive.

The section at the bottom of the window allows you to prioritize entity parents in the Entity Tree; these priorities are then used to break "ties" when multiple commands are attempting to act on the same entity at the same time. In the sample shown above, suppose there is a "Signal 1" entity that exists in the Eagle group *and* in the Econolite group. If the following commands are issued to run at the same time:

Eagle Group ==> Set Pattern 2

Econolite Group ==> Set Pattern 3

Signal 1 will not know which pattern to run. But in the sample above, the user has specified that the Eagle Group has a higher priority than the Econolite Group; therefore, Signal 1 would run Pattern 2 in this case.

When you open this window, you will see all of your parent entities (Groups, Sections, etc.), shown in hierarchical order from left to right. Each column of the window represents a single tier or level in your Entity Tree. Within each column, by default, your parent entities are sorted by type (Group, Section, etc.), then by name. You can select a parent and use the arrow buttons to move it up (higher priority) or move it down (lower priority). Or you can simply accept the default order.

**Note** • After you have configured the parent entity priorities (relative to each other), any new parent entities that are added to the Entity Tree will automatically be placed at the bottom of the priority list. If you want the new parent entity to have a higher priority, you must use this window (above) to move it higher in the list.

**Note** • For more details about how Centracs prioritizes commands, refer to *Scheduling Conflicts* on page 7-2.

#### Preempts

This tab permits an administrator to change:

- the default labels for various preempts in the system.
- the codes that map the Centracs preempts to the preempt plans configured on the controllers.

#### **Preempt Descriptions**

The preempt labels defined on this window are shown in the Preempt dropdown when you add a manual command, schedule entry, or action set that contains the Preempt action. They are also shown in the Details column of the Alerts Log (page 10-18), Signal Events report (page 10-36), and System Events report (page 10-51).

Preempts

You can override these default labels for specific signals if necessary (refer to *Customizing the Preemptor Descriptions for a Signal* on page 3-42).

Settings			
Organization Information Licensing SMTP Servers ECPI Tile Server Password Strength	These can be overridd Show Centracs	Mappings scriptions associated with each len for a signal via the Entity Configurati Preempt Mapping Codes	ion window.
Confirmation Dialogs Action Priorities Preempts Detector Settings BlueTOAD™ Support Services	Emergency Ve 1 Emergency Ve 2 Emergency Ve 3 Emergency Ve 4 Emergency Ve	Code 1 2 3 4	
Offline Alert Format	5 Emergency Ve 6 Emergency Ve 7 Emergency Ve 8 Emergency Ve	ehicle 5 ehicle 6 ehicle 7	5 6 7 8
	9 Emergency V 10 Emergency V 11 Emergency V 12 Emergency V	ehicle 10 ehicle 11	9 10 11 12
	Railroad 1 1 Railroad 1 2 Railroad 2 3 Railroad 3		13 14 15
	4 Railroad 4 Other 1 Other Preemo	+ 1	16 21
			Close

If you turn on the "Show Centracs Preempt Mapping Codes" checkbox, a column of numbers is shown down the right side of the window. These codes relate the preempt descriptions to their corresponding preempt mappings (on the Mappings tab), which in turn map to the preempt plans configured on the controllers.

#### Preempt Mappings

The codes defined on this window map the Centracs preempts to the preempt plans configured on the controllers.

Settings							
Organization Information	Descriptions	Mappings					
SMTP Servers	Centracs to Econol	ite Preempt Mappings					
ECPI Tile Server	Specify the Centracs pre-	empt number to which the Econolite preempt should be mapped	i.				
Password Strength	Centracs preempt numbe	ers are 1-12 for Emergency Vehicle, 13-16 for Railroad, and 21-	30 for Other Preempts.				
Confirmation Dialogs	ASC/2 ASC/3	ASC/2, ASC/3, and Cobalt					
Action Priorities							
Preempts	ASC Preempt 1	13	1				
Detector Settings	ASC Preempt 2	14	i				
BlueTOAD™	ASC Preempt 3	1	i				
Support Services	ASC Preempt 4	2	i				
Offline Alert Format	ASC Preempt 5	3	i				
	ASC Preempt 6	4	i				
	ASC Preempt 7	5	i				
	ASC Preempt 8	6	i				
	ASC Preempt 9	7	i				
	ASC Preempt 10	21	i				
	Oasis						
	OASIS Preempt 1	13	i				
	OASIS Preempt 2	14	i				
	OASIS Preempt 3	1	i				
	OASIS Preempt 4	2	i				
	OASIS Preempt 5	3	i				
	OASIS Preempt 6	4	i				
			Close				

The preempt numbers down the left side of the window are the preempt plans on the controllers. You can accept the defaults, or you can change the Centracs preempt that is associated with each controller preempt plan. As noted at the top of the window, the Centracs preempt numbers are:

- 1-12 = Emergency Vehicle (EV)
- 13-16 = Railroad (RR)
- 21-30 = Other

For example, in the window shown above, preempt plan 1 (for ASC/2, ASC/3, Cobalt, and Oasis controllers) is associated with a Railroad preempt in Centracs. Because the Railroad preempts in Centracs range from 13 to 16, 13 corresponds to RR1, 14 is RR2, 15 is RR3, and 16 is RR4.

You can hover the mouse over the **i** to see the default value for a specific preempt.

Detector Settings

Centracs Preempt No.	Meaning	Centracs Preempt No.	Meaning
1	EV1	14	RR2
2	EV2	15	RR3
3	EV3	16	RR4
4	EV4	21	Other1
5	EV5	22	Other2
6	EV6	23	Other3
7	EV7	24	Other4
8	EV8	25	Other5
9	EV9	26	Other6
10	EV10	27	Other7
11	EV11	28	Other8
12	EV12	29	Other9
13	RR1	30	Other10

#### Centracs Preempt Numbers

### **Detector Settings**

**Note** • This feature is not supported for Tek-Chile controllers.

Specifies the default length and distance settings for vehicle detector configurations that are uploaded from the controllers:

Settings			
Organization Information Licensing SMTP Servers	Default Settings For Vehic Call Detectors:		
ECPI Tile Server	Length:	40 Feet	
Password Strength	Distance from Stop Bar:	4 Feet	
Confirmation Dialogs	Extended Detectors:		
Action Priorities Preempts	Length:	6 Feet	
Detector Settings	Distance from Stop Bar:	16 Feet	
BlueTOAD™	Average Vehicle Length:	5 Feet	
Support Services			
Offline Alert Format			
			Close

Detector Settings •

The fields are:

Call Detectors:

- Length: default length of call detectors.
- Distance from Stop Bar: default distance of call detectors from the stop bar.

Extended Detectors:

- Length: default length of extension detectors.
- **Distance from Stop Bar**: default distance of extension detectors from the stop bar.

**Average Vehicle Length**: Centracs uses this value for speed calculations in the MOE reports, VOS reports, and Centracs Adaptive.

These values are used on the Detector Configuration window (refer to *Entity Configuration - Vehicle Detectors* on page 3-48). If a detector is configured in the controller as a call detector (or as a call+extend detector), Centracs uses the default "Call Detectors" values; if the detector is configured as an extension detector, Centracs uses the default "Extended Length" values.

A detector is defined as a call detector or extension detector in the controller using the fields below:

Controller Type	Call Detector	Extension Detector
ASC/3 or Cobalt	The ECPI Type field must be set to NTCIP and the Call Option field must be Yes.	The ECPI Type field must be set to NTCIP and the Ext Option field must <i>not</i> be None.
ASC/2	The Call flag must be enabled.	The Extend Time field must be greater than zero.
Oasis	The Call Detector field must be set to Y.	The Extension Detector field must be set to Y.
W4	W4 detectors are always call + extension.	W4 detectors are always call + extension.
Eagle	The Call field must be 1.	The Queue field must be 1.

For each field on the Detector Settings window, one of these units must be included:

- feet or ft
- miles or mi
- meters or m
- kilometers or km

For example, "6 ft" or "1.8 m".

BlueTOAD

### BlueTOAD

Tells Centracs how to communicate with the BlueTOAD server to retrieve travel time and speed data. For details, refer to *Configuring BlueTOAD Entities* on page 14-9.

### **Offline Alert Format**

Specifies the content to be included in alerts that are sent from Centracs via email or SMS text message. For details, refer to *Defining Offline Alert Formats* on page 20-69.

### **Controller Editor Printouts**

Defines custom print templates to be used in the Signal Editor for printing a signal's controller settings. For details, refer to page 15-20.

### **MMS** Settings

Controls various screen behaviors within the MMS/Asset Management module. For details, refer to *Configuring the MMS Settings* on page 19-3.

### Default Comm Parameters

Defines the default user names and passwords for communicating with signal controllers and for communicating with the Genetec server (for Advanced CCTV).

To open this window, select **File > Settings** from the main menu.

0	Settings			
ſ	Organization Information	FTP Username	econolite	
Ì	Licensing	FTP Osemane	econolite	
Ì	SMTP Servers	FTP Password	•••••	
	Autoscope Settings	Verify FTP Password	•••••	
	ECPI Tile Server	CNIMD Community Manag	- desiristantes	
	Password Strength	SNMP Community Name	administrator	
	Confirmation Dialogs	Advanced CCT∨ Gateway	172.20.97.29	
	Action Priorities	Advanced CCTV Username	Admin	
	Preempts			
Ì	Detector Settings	Advanced CCTV Password	<u> </u>	
	BlueTOAD™	Verify Advanced CCTV Password		
	Support Services			
	Offline Alert Format			
	MMS Settings			
	Default Comm Parameters			
				Close

#### FTP/SNMP Fields

- FTP Username and FTP Password For ASC/3 and Cobalt signals only. Used for FTP-based communications between Centracs and the controllers, including MOE uploads and downloads/uploads in the Signal Editor. If you have changed the username and password on your controllers, change them here to match the controllers. If you have not changed the username and password on your controllers, do not change them here.
- SNMP Community Name For ASC/3, ASC/2, Cobalt, and Eagle only. Sets the default access name used in SNMP communications between Centracs and the controllers.

If needed, you can override these parameters for specific controllers on the Device Communication Configuration window. Refer to *Entity Configuration - Signals* on page 3-36.

#### Advanced CCTV Fields

- Advanced CCTV Gateway The IP address of the Genetec server.
- Advanced CCTV Username The user ID you defined on the Genetec server. By default, all users in Centracs will have the permissions assigned to this username in Genetec. However, you can override this for specific users; refer to *Defining Users* on page 20-24 for details.
- Advanced CCTV Password The password you defined for this user on the Genetec server (if any).
- Verify Advanced CCTV Password You must enter the password again (if any).

For more information, refer to Configuring the Advanced CCTV Feature on page 20-64.

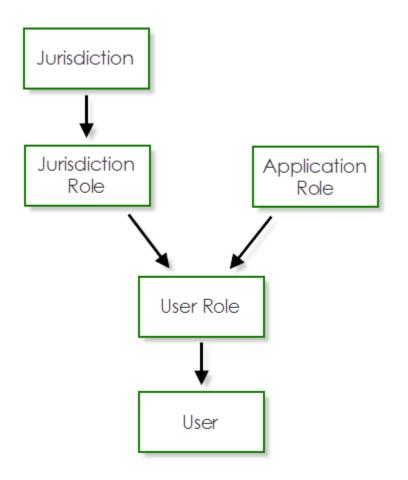
# **Setting Up Security**

#### **Overview of Security**

Access to data and functions in Centracs is strictly controlled. Centracs offers multiple levels of security that you can use to permit or prevent access to specific data and functions on a user-by-user basis. It is recommended that the Administrator design and configure the overall security setup in advance, before people start to use Centracs for the first time.

The flowchart below illustrates the parent/child relationships between the various security levels in Centracs: Jurisdictions, Jurisdiction Roles, Application Roles, User Roles, and User IDs.

Defining Jurisdictions



As this graphic illustrates, you must define Jurisdictions before Jurisdiction Roles; you must define Application Roles before User Roles; and so forth. A role is a collection of privileges that you can define one time, then assign to multiple users. With this feature, it is not necessary to set each user's privileges individually (a very time-consuming task). For each user, it is the combination of roles that permits or prevents their access to data.

### **Defining Jurisdictions**

You can use "jurisdictions" to divide your field devices into groups or areas. For example, you could divide your region into four jurisdictions: North, South, East, and West. You can then give each user access to one of more of these jurisdictions. A jurisdiction can be any selection of devices or entities that makes sense for your installation. You can add as many jurisdictions as necessary; or if it is not necessary to separate your devices into jurisdictions, you can use one jurisdiction for all devices and all users. The system includes a default jurisdiction for all devices called "General".

#### To add a new Jurisdiction:

1 From the main menu, select **Management ▶ User Roles ▶ Jurisdictions...** The Jurisdiction window opens.

- Jurisdiction			
South Houston	Jurisdiction Name	Details South Houston	
	Description Is Default	South devices only	
Add Delete			Close

- 2 Click Add.
- **3** In the Jurisdiction Details part of the window, enter a name and description for the new jurisdiction.
- 4 Specify whether this jurisdiction will be the default jurisdiction when a new System is added to the Entity Tree. (**Note:** When any other type of entity is added to the tree, the jurisdiction defaults to the jurisdiction of the parent entity (i.e., System or Group).)

E	- Jurisdiction	
	South Houston North Houston	Details North Houston North devices only Save Cancel Edit
	Add Delete	Close

5 Click Save.

Now you can set up your Jurisdiction Roles.

**Note** • Devices are assigned to a jurisdiction when they are added to the system. Refer to *Adding Entities via the Entity Tree* on page 3-8. You can assign a device to only one jurisdiction.

Defining Jurisdiction Roles

# Defining Jurisdiction Roles

In general, a Jurisdiction Role specifies which actions a user can do for a jurisdiction of field devices. Specifically, it controls the actions below:

Permission	Controls
Control	<ul> <li>Access to these options in the Entity Tree and the Map Viewer: Manual Command, Schedule</li> </ul>
	Access to this option in the View menu: CCTV Tours
	<ul> <li>Ability to assert and remove vehicle and pedestrian calls to a signal through the Signal Status display</li> </ul>
	<ul> <li>Ability to run W4 actions via the scheduler, manual commands, or action sets: Clear Detector Count Log, Clear Detector Fail Log, Clear Preempt/Power Fail Log, Copy Page 0 Timing, Detector Reset Pulse, EEPROM Burn, Max II, Walk II Off, Walk II On, Transfer to Page 0, Transfer to Page 1, Transfer to Page 2</li> </ul>
	<ul> <li>Ability to add, change, delete, and configure traffic algorithms (you must also have the Traffic Algorithm permission in the Application Role)</li> </ul>
	<ul> <li>Ability to run action sets via the scheduler or manual commands</li> </ul>
	<ul> <li>Ability to run these actions via the scheduler, manual commands, or action sets: CCTV Preset, CCTV Tour, Change Section, Preempt, Set Pattern, Set Time, Signal Upload and Compare, Special Function, Time Broadcast, Time Drift Check, Traffic Algorithm, Upload Controller Logs</li> </ul>
	<b>Note</b> • You must have the Change Scheduler permission in order to use manual commands, the scheduler, and action sets.
Create Maintenance Plan (MMS)	<ul> <li>Access to the Preventive Maintenance Checklist Scheduler option in the Control menu</li> </ul>
	<ul> <li>Access to the Preventive Maintenance Checklists option and the Preventive Maintenance Checklist Items option in the Configuration menu</li> </ul>
Create Ticket (MMS)	Ability to add a new ticket (in Centracs MMS or in the MMS mobile application)

Defining Jurisdiction Roles

Permission	Controls
Download Device	Access to the Download To Controller action in the Signal Database Editor
Configuration	<ul> <li>Ability to override controller locks in the Signal Database Editor (note that the "controller lock override" function can be enabled by <i>any</i> one of these permissions: Load Configuration, Save Configuration, and/or Download Configuration)</li> </ul>
	Ability to run these Oasis actions via the scheduler, manual commands, or action sets: Added Extension, Advance Walk, CNA, CNA2, Delay Walk, Dual Entry, Dynamic Max, Fast Flash, FDW2, First Phases, Flash Entry, Flash Walk, Flash Yellow, Gap Reduce, Gap2, Green Flash, Guaranteed Passage, Inhibit Coord, Inhibit Ped, Inhibit Reservice, Man Control, Man Control No Ped, Max Inhibit, Max Recall, Max2, Max2 Recall, Min 2, Min Recall, Mod Rest Walk, No Skip, Omit Phase, Ped Recall, Ped Red Clear, Ped Reservice, Ped Soft Recall, Ped Yellow Clear, Red Det Lock, Red Rest, Red Revert, Rest Walk, Simultaneous Gap, Soft Recall, Start In Green, Start In Red, Start In Yellow, Startup Calls, Startup Ped Calls, Variable Initial, WAG Overlap, WAG Phase, Walk2, Yel Det Lock
	<ul> <li>Ability to download offsets from the Time Space Analysis to a controller (the Save Configuration permission is also necessary in order to download offsets)</li> </ul>
	<ul> <li>Access to the edit function in the ACT Database Editor (for Oasis/W4 controllers)</li> </ul>
	<b>Note</b> • You must have the Change Scheduler permission in order to use manual commands, the scheduler, and action sets.
Edit Asset (MMS)	<ul> <li>Ability to change an asset on the Asset Status display</li> </ul>
	<ul><li>Ability to add assets and inventory to the Master Inventory list</li></ul>
	<ul> <li>Ability to put assets and inventory out of service or back into service (in Centracs MMS or in the MMS mobile application)</li> </ul>
Edit DMS Message	<ul> <li>Ability to add, edit, and delete messages in the Changeable message library for a Dynamic Message Sign</li> </ul>
	<ul> <li>Ability to use the Quick Message function for a Dynamic Message Sign</li> </ul>
Edit Entities	<ul> <li>Ability to add, delete, edit, or copy entities for the specified jurisdiction</li> </ul>
	Ability to add, delete, edit entity notes
	<ul> <li>Access to these main menu options: Configuration &gt; Autoscopes,</li> <li>Configuration &gt; Detector Groups (for Centracs DCMS systems only)</li> </ul>
	This permission works in conjunction with the Edit Maps permission in the Application Roles (page 20-19).

#### **Centracs Administration**

Defining Jurisdiction Roles

Permission	Controls
Load Configuration	<ul> <li>Access to the Launch Signal Editor option from the Entity Tree, Signal Status display, and the Map Viewer</li> </ul>
	<ul> <li>Ability to override controller locks in the Signal Database Editor (note that the "controller lock override" function can be enabled by <i>any</i> one of these permissions: Load Configuration, Save Configuration, and/or Download Configuration)</li> </ul>
	<ul> <li>Access to these actions in the Signal Database Editor: Load Controller From Database, Load Previously Saved Data, Restore Database Data</li> </ul>
Move Asset (MMS)	<ul> <li>Ability to move assets and inventory from one Location to another, or to/from the Scrap Recycle bin (in Centracs MMS or in the MMS mobile application)</li> </ul>
Remote Front Panel	<ul> <li>Ability to launch the remote front panel emulator (page 15-6) from Centracs and use all of its features, such as viewing the controller status displays, changing the controller settings, printing the controller settings, clearing log buffers, etc.</li> </ul>
	Note • Anytime a user accesses the remote front panel, their user name is logged in the System Activity report.
Save Configuration	<ul> <li>Ability to override controller locks in the Signal Database Editor (note that the "controller lock override" function can be enabled by <i>any</i> one of these permissions: Load Configuration, Save Configuration, and/or Download Configuration)</li> </ul>
	<ul> <li>Ability to save offsets from the Time Space Analysis to the database</li> </ul>
	<ul> <li>Access to these actions in the Signal Database Editor: Store Controller in Database, Export Data File</li> </ul>
Ticket Re- assignment (MMS)	<ul> <li>Ability to reassign a ticket to another technician (in Centracs MMS or in the MMS mobile application)</li> </ul>
Update PM Checklist (MMS)	<ul> <li>Ability to change and delete scheduled PM checklists (in Centracs MMS or in the MMS mobile application)</li> </ul>
	<ul> <li>Access to the Schedule Preventive Maintenance Checklists option in the Control menu</li> </ul>
Update Ticket (MMS)	<ul> <li>Ability to change and delete tickets (in Centracs MMS or in the MMS mobile application)</li> </ul>
Upload Device Configuration	<ul> <li>Access to the Upload From Controller action in the Signal Database Editor</li> </ul>

**IMPORTANT** • Do not give these permissions to a large number of users.

Defining Jurisdiction Roles •

Note • Only the Control and Edit Entities permissions are shown for DCMS systems.

Centracs offers a default Jurisdiction Role called "General Operator", which permits access to all of these actions for the default jurisdiction. (Note that the default role may have been changed and/or renamed during the initial configuration of your system.)

In case it is necessary for a user to have one set of privileges in Jurisdiction A but a different set of privileges in Jurisdiction B, you can assign multiple Jurisdiction Roles to a user.

#### To define a new Jurisdiction Role:

```
Note • You must define your jurisdiction(s) first.
```

1 From the main menu, select Management ► User Roles ► Jurisdiction Roles... The Jurisdiction Roles window opens.

Jurisdiction Role			
Admin	Role Details		
Field Supervisor General Operator	Name	Admin	
Supervisor Technician	Jurisdiction	General	<b>-</b>
TMC Operations	Permissions	Control	
		Create Maintenance Plan	_
		Create Ticket	_
		Download Device Configuration	_
		Edit Asset	_
		Edit DMS Message	_
		Edit Entities	_
		Load Configuration	
		Move Asset	_
		Ticket Re-assignment	_
		Save Configuration	_
		Update PM Checklist	_
		Update Ticket	
		Upload Device Configuration	
Add Delete			Close



- 2 Click Add.
- 3 In the Role Details part of the window, enter a name for the new role.
- 4 Use the dropdown list to select the Jurisdiction of field devices.
- **5** Configure the checkboxes to select the permitted functions for this role, for this jurisdiction of field devices. There are three states for each checkbox:

A checked box means the permission is turned on.

Defining Jurisdiction Roles

An unchecked box means the permission is turned off.

The red prohibit symbol means the permission is explicitly denied. This state is available only if the Active Directory (AD) service is enabled on your Centracs system (refer to page 20-27). When multiple roles are assigned to a user via AD, that user will have all the combined permissions from all of those roles. In such a case, a checked box overrides an unchecked box. For example, suppose both Role A and Role B are assigned to User X. If Role A has the Control permission checked and Role B has the Control permission unchecked, User X will be given the Control permission. But if you want to deny the Control permission to User X, select the red prohibit symbol, which overrides a checked box. When Role A and Role B are combined for User X, the Control permission will be denied.

Jurisdiction Role		
Admin Field Supervisor General Operator Supervisor Technician TMC Operations Control Only - North Side	Role Details Name Jurisdiction Permissions	Control Only - North Side North sector Control Control Create Maintenance Plan
		Create Ticket  Configuration  Edit Asset  Edit DMS Message Edit Entities  Configuration Move Asset
		Ticket Re-assignment Save Configuration Update PM Checklist Update Ticket Upload Device Configuration
Add Delete		Save Cancel Edit

6 Click Save.

# Defining Application Roles

An Application Role specifies which features a user can access in the application. Specifically, it controls these actions:

Permission	Controls
Change Scheduler	<ul> <li>Access to these main menu options: Control &gt; Manual Commands, Control &gt; Scheduler, Control &gt; Holiday/Special Days</li> </ul>
	<ul> <li>Access to these options in the Entity Tree and Map Viewer: Manual Command, Schedule, Parent Operation</li> </ul>
	<ul> <li>Access to the Manual Command and Scheduler options on the Favorites window</li> </ul>
	<ul> <li>Ability to add, edit, and delete action sets (without this permission, action sets are view-only)</li> </ul>
	<ul> <li>Ability to add, delete, edit, and copy manual commands and schedule entries</li> </ul>
	<ul> <li>Ability to add a schedule entry to enable logging for a specific signal from the Split Monitor window</li> </ul>
Database Archive	<ul> <li>Ability to run these actions via the scheduler, manual commands, or action sets: Archive Logs Data, Database Maintenance, Restore Logs</li> </ul>
	<b>Note</b> • You must have the Change Scheduler permission in order to use manual commands, the scheduler, and action sets.
Edit Maps	<ul> <li>Access to these options in the Entity Tree: Launch Map Editor, Edit Properties, Add Entity, Remove entity</li> </ul>
	<ul> <li>Ability to move and copy entities in the Entity Tree</li> </ul>
	<ul> <li>Access to these main menu options: Configuration &gt; Map Layers, View &gt; Preset</li> <li>Map, View &gt; Edit Preset Maps, Configuration &gt; Street Names</li> </ul>
	<ul> <li>Access to these options in the Map Viewer: Add Entity, Save as Default Location, Save as Map Preset, Remove from Map, Launch Map Editor</li> </ul>
	<ul> <li>Ability to drag and drop an entity onto the map</li> </ul>
	This permission works in conjunction with the Edit Entities permission in the Jurisdiction Roles (page 20-15).
Edit On-Call Plan (MMS)	<ul> <li>Ability to make changes to the MMS On-Call Scheduler (without this permission, the On-Call Scheduler is view-only)</li> </ul>
Edit Users	<ul> <li>Access to these main menu options: Management &gt; Users, Management &gt; User Roles, Management &gt; AD Role Mappings, Management &gt; Application Roles, Management &gt; Jurisdiction Roles, Management &gt; Jurisdictions, Management &gt; Recipients</li> </ul>
	Ability to edit and delete preference sets owned by other users

#### **Centracs Administration**

Defining Application Roles

Permission	Controls
Event and Alert Configuration	<ul> <li>Ability to add, edit, and delete Triggers, Alert Escalations, and Events (without this permission, these tabs of the Alerts and Events window are view-only)</li> </ul>
	<ul> <li>Ability to run these actions via the scheduler, manual commands, or action sets: Upload MOE Logs, Signal Change Logging, Split Monitor Logging</li> </ul>
	<b>Note</b> • You must have the Change Scheduler permission in order to use manual commands, the scheduler, and action sets.
Report Generation	<ul> <li>Ability to run the Generate Report action via the scheduler, manual commands, or action sets</li> </ul>
	<b>Note</b> • You must have the Change Scheduler permission in order to use manual commands, the scheduler, and action sets.
	<ul> <li>Access to the options in the Reports main menu</li> </ul>
System Configuration	<ul> <li>Access to these main menu options: File &gt; Settings, Management &gt; Global Settings, Configuration &gt; Servers/Comms, Management &gt; Purge Data, Configuration &gt; Polling Packets, Management &gt; Center-to-Center, Management &gt; Server-to-Server</li> </ul>
	<ul> <li>Access to all Local Settings (without this permission, users have access to the LocalAutoLogoutTime and SaveFloatingWindows settings only)</li> </ul>
	<ul> <li>Ability to delete configurable reports</li> </ul>
	<ul> <li>Access to the Database Statistics option on the status bar/toolbar of the main window</li> </ul>
	Without this permission, users can access the Confirmation Dialogs tab of the Settings window, but no other tabs.
Traffic Algorithm Configuration	<ul> <li>Ability to add, change, delete, and configure traffic algorithms (you must also have the Control permission in the Jurisdiction role)</li> </ul>
	Access to the Run Now option on the Traffic Responsive monitoring window
	<b>Note</b> • This permission is not used in Centracs DCMS.

Centracs offers two pre-defined Application Roles that you can use, or you can make your own:

- Administrator permits access to all features and functions of Centracs.
- Technician permits access to all features and functions of Centracs EXCEPT those specified in the table above.

Defining Application Roles •

#### To define a new Application Role:

1 From the main menu, select **Management ► User Roles ► App Roles...** The Application Roles window opens.

Application Roles			
Administrator DOTD Admin Field Supervisor Supervisor Technician TMC Operator	Role Details Name Permissions	Administrator Database Archive Edit Maps Edit On-Call Plan Edit Users Event and Alert Configuration Report Generation Change Scheduler System Configuration Traffic Algorithm Configuration	
Add Delete			Close

- 2 Click Add.
- 3 In the Role Details part of the window, enter a name for the new role.
- 4 Configure the checkboxes to select the permitted functions for this role. There are three states for each checkbox:
  - A checked box means the permission is turned on.
  - An unchecked box means the permission is turned off.

The red prohibit symbol means the permission is explicitly denied. This state is available only if the Active Directory (AD) service is enabled on your Centracs system. When multiple roles are assigned to a user via AD, that user will have all the combined permissions from all of those roles. In such a case, a checked box overrides an unchecked box. For example, suppose both Role A and Role B are assigned to User X. If Role A has the Edit Maps permission checked and Role B has the Edit Maps permission unchecked, User X will be given the Edit Maps permission. But if you want Defining Application Roles

to deny the Edit Maps permission to User X, select the red prohibit symbol, which overrides a checked box. When Role A and Role B are combined for User X, the Edit Maps permission will be denied.

Application Roles			
Application Roles Administrator DOTD Admin Field Supervisor Supervisor Technician TMC Operator DB Admin	Role Details Name Permissions	DB Admin  DB Admin  Database Archive Edit Maps Edit On-Call Plan Edit Users Event and Alert Configuration Report Generation Change Scheduler System Configuration Traffic Algorithm Configuration	
		Save Cancel Edi	_
Add Delete		Close	

5 Click Save.

Now you can set up your User Roles.

#### **Defining User Roles**

A User Role is a combination of an Application Role and a Jurisdiction Role. Centracs offers these two pre-defined User Roles that you can use, or you can make your own:

- Administrator a combination of the "Administrator" Application Role and the "General Operator" Jurisdiction Role.
- Technician a combination of the "Technician" Application Role and the "General Operator" Jurisdiction Role.

#### To define a new User Role:

Note • Be sure to define your Jurisdiction Roles and Application Roles first.

1 From the main menu, go to **Management ► User Roles ► User Roles...** The User Roles window opens.

User Roles			
Administrator Supervisor - North Houston Technician - North Houston Technician - South Houston	Role Details Name Application Role Jurisdiction Role	Administrator Administrator All Permissions - North Houston All Permissions - South Houston Control Only - North Houston Control Only - South Houston	•
Add Delete			Close

- 2 Click Add.
- 3 In the Role Details part of the window, enter a name for the new role.
- 4 Use the dropdown lists to select the Application Role and Jurisdiction Role for this User Role.

User Roles			
Administrator Supervisor - North Houston Technician - North Houston Technician - South Houston Supervisor - South Houston	Role Details Name Application Role Jurisdiction Role	Supervisor - South Houston Supervisor All Permissions - North Houston All Permissions - South Houston Control Only - North Houston Control Only - South Houston	•
Add Delete			Save Cancel Edit

5 Click Save.

• Setting Password Requirements

### Setting Password Requirements

Before you add users, determine the level of password strength you will require for each user password. You can then configure Centracs to enforce that level of password strength each time a user changes their password.

#### To configure the minimum password requirements for the application:

- 1 From the main menu, select **File ▶ Settings**.
- 2 click the Password Strength tab on the left side of the window.

Settings	
Organization Information         Licensing         SMTP Servers         ECPI Tile Server         Password Strength         Confirmation Dialogs         Action Priorities         Preempts         Detector Settings         BlueTOAD™         Support Services         Offline Alert Format	Set minimum password strength requirements for users.  Minimum Length 8 Passwords must be at least this long. Uppercase Characters  There must be one or more uppercase letters. Lowercase Characters  There must be one or more lowercase letters. Numbers  There must be one or more numbers. Punctuation There must be one or more punctuation characters, such as: ?, !, etc.  Save Cancel Edit
	Close

- **3** Specify the minimum number of characters required for a valid password in the "Minimum Length" field.
- 4 Use the checkboxes to specify whether passwords must contain uppercase characters, lowercase characters, numbers, and/or punctuation.
- 5 Click Save.

If any users are already defined in the system, and if their current passwords do not comply with the restrictions you set, the system will automatically require them to change their password the next time they log in.

### **Defining Users**

**Note** • If your system is configured to use Microsoft's Active Directory service, you do not need to manually define users in Centracs. Refer to *Configuring the Active Directory Service* on page 20-27.

Most interaction with Centracs requires an individual to be defined as a Centracs user, with a login name and password.

**Note** • In some situations, it is necessary to send alert notifications or reports to individuals who are not online users of Centracs. For this purpose, Centracs offers a feature called "recipients". A recipient is an individual to whom Centracs can send alerts via email or SMS text message, or reports via email. Although in most cases recipients will also be set up as users, you can set up a person to be a recipient only, or a user only. For details, refer to *Defining Recipients* on page 20-73.

#### To add a new user:

Note • Be sure to define your User Roles (page 20-23) and Password Requirements (page 20-24) first.

1 From the main menu, select **Management ► Users...** The User Configuration window opens.

User Configuration				
User Configuration Centracs Administrator Econolite User - Doc George Michael Bluth Lonnie J Kingfisher Phil Dunphy	User Details User Login Password Verify Password First Name Last Name Role CCTV Username CCTV Password Verify CCTV Password	ljk ● • Lonnie J Kingfisher Supervisor - North Houston ▼	Role Privileges         Supervisor         Edit Entities         Change Scheduler         Event and Alarm Configuration         Edit Configuration         Upload Device Configuration         Download Device Configuration         Control	
Add Zelete			Clos	•

- 2 Click Add.
- 3 In the User Details part of the window, enter the first and last name of the user, a login name, a password, etc.

#### Defining Users

4 From the dropdown list, select the User Role for this new user. For details about a specific role, select it — the Role Privileges section of the window refreshes to show a list of all the Application/Jurisdiction Role permissions that are enabled for the selected User Role.

<ul> <li>User Configuration</li> </ul>			
Centracs Administrator Econolite User	- User Details		Role Privileges
Econolite User - Doc George Michael Bluth	User Login	ph	Supervisor     Edit Entities
Lonnie J Kingfisher Phil Dunphy	Password	•••••	Change Scheduler Event and Alarm Configuration
Peggy Hill	Verify Password	•••••	All Permissions - South Houston     Edit Configuration
	First Name	Peggy	Upload Device Configuration
	Last Name	Hill	Download Device Configuration Control
	Role	Supervisor - South Houston 👻	
	CCTV Username		
	CCTV Password		
	Verify CCTV Password		
			Save Cancel Edit
+ Add V X Delete			Close

5 The three CCTV fields are for Advanced CCTV only, and are used to assign this user a specific set of Genetec permissions. For example, you may want this user to be able to pan/tilt/zoom the CCTV cameras in Centracs, but not to change the camera presets. To do so, create a user in Genetec that has only the desired permissions, then enter that user name in the CCTV Username field shown above. (The same Genetec user name can be used for more than one Centracs user.) The two password fields are required only if you created a password for this user in Genetec.

The permissions in Genetec that affect Centracs are:

Genetec Permission	Description
SDK (under Applications)	This is required to see the video feed from the camera in Centracs.
Plugin Configuration (under Config Tool privileges)	This is required to see the video feed from the camera in Centracs.
Perform basic operations (under PTZ controls)	This is required to use the pan/tilt/zoom features in Centracs.
User presets (under PTZ controls)	This is required to use the <b>Go to Preset</b> command in Centracs.
Edit presets (under PTZ controls)	This is required to use the <b>Set Preset</b> command in Centracs.

Configuring the Active Directory Service •

Genetec Permission	Description
Save and print snapshots (under General privileges)	This is required to use the <b>Snapshot</b> command in Centracs.

If you leave these three CCTV fields blank, the user will have the same permissions as the user defined in the "Advanced CCTV Username" setting. For details, refer to **Configuring the Advanced CCTV Feature on page 20-64**.

6 Click Save.

**Note** • To view all the permissions for a user, look at the Role Privileges box on the right side of this window. If the user has multiple roles assigned, the Role Privileges box shows the complete combined list of all assigned permissions.

For more details, you can also click into the right of the Role field. This opens the User Roles window, where you can see the details of the assigned User Role. You can then click into the right of the Application Role field to see the details of the user's Application Role, or click into the right of the Jurisdiction Role field to see the details of the user's Jurisdiction Role; from there you can click into the right of the Jurisdiction details.

### Configuring the Active Directory Service

Optionally, an administrator can configure Centracs to use Microsoft's Active Directory (AD) service for directory-based identity-related services. If you choose to use AD, you do not have to configure user accounts on the User Configuration window in Centracs. Instead, you can simply map a Centracs User Role to an AD group. This capability allows for better security of your system, and allows you to maintain user accounts all in one place (instead of maintaining users at the operating system level *and* in Centracs).

**Note** • The Active Directory service is not available in Local Edition.

#### **To configure AD:**

- 1 From the main menu, select File ▶ Settings.
- 2 click the "Active Directory Settings" tab on the left side of the window.
- 3 Click Set.
- 4 On the Microsoft window that opens, click **Object Types**.
- 5 Enable the checkboxes for Groups and Built-in security principals, then click **OK**.
- 6 Click Locations.
- 7 Select the default location to use when attempting to authenticate users and click OK.

- Configuring the Active Directory Service
  - 8 In the text box at the bottom, enter the AD group name to use, then click Check Names. You can also use the Advanced feature to help you find the group name. If you need help, you can click the "examples" link to open the online help from Microsoft, or contact your in-house network administrator.
  - 9 Click OK.
  - 10 Click Save.
  - 11 Next you must associate your Windows users with a set of permissions in Centracs. From the main menu, select Management ► Users Roles ► AD Role Mappings...
  - **12** Select a user role on the left side of the window.
  - 13 Click Add.
  - 14 On the Microsoft window that opens, select a group or user to map to the user role. This can be a domain group, domain user, local machine group, or local machine user (note that the local machine is the machine where the Centracs Core service is running). If you select a group, all users that are members of that group will be mapped to the selected user role.
  - 15 Click OK.
  - 16 Click Save.

Any Windows users that are members of the group you mapped to the user role should now be able to login to Centracs using their Windows credentials. (Depending on how your AD locations and groups are configured, users may need to specify the domain name before their user name, separated by a backslash. If the domain name is provided, the login process looks for AD mappings in that domain instead of the domain configured on the Active Directory Settings window.)

Upon the first successful login, a user account (see page 20-24) is automatically created in Centracs, as well as a Recipient record (see page 20-73). Note that Centracs does not store user passwords when Active Directory is enabled.

Notes About AD

- Multiple user roles can be associated with a user/group (and vice versa). If a user has multiple roles assigned, that user will have all the combined permissions from all of those roles. To see a list of all the permissions currently assigned to a user, view the Role Privileges section of the User Configuration window (see page 20-24).
- If, subsequently, a Windows user account is deleted (outside of Centracs), the user account in Centracs will remain; however, the user will no longer be authenticated for login. On the other hand, if the user account in Centracs is deleted, the Windows/

Active Directory user account remains, so the user will still be able to log in to Centracs. To prevent the user from logging in to Centracs, you must delete the Windows/Active Directory user account.

- If a user account in Centracs has a different role assignment than a matching user account in Windows/Active Directory, the role(s) assigned in Active Directory will be used for that user.
- Optionally, you can configure your client machine(s) to automatically log in to Centracs using the Windows credentials that are currently logged into the machine (instead of prompting the user for a user name and password). To set up the auto-login feature, go to the Desktop and make a copy of the Centracs shortcut icon. Right-click the copy you created and select **Properties**. On the Shortcut tab, at the end of the Target path, add " true" (for example, "C:\Program

Files\Econolite\Centracs\CentracsClient\Centracs.exe" true). On the General tab, change "Centracs" to "Centracs auto-login" (or similar) and click **OK**. Any time the user launches this shortcut, Centracs will attempt to log in automatically using their Windows credentials. To log in with different credentials, use the original shortcut icon.

Defining User Groups

# Defining User Groups

User Groups are used in the On-Call Scheduler (page 19-27) and in the Entity Configuration window.

### To add a user group:

1 From the main menu, select **Management** ▶ User Groups... The User Groups window opens. The left side shows the groups that have been added. On the right side, the Selected Recipients box shows the users that have been added to each group.

User Groups			
Supervisors	User Group Details		
Technicians I	Name Supervisors		
	Selected Recipients	Available Recipients	
	Augustus McCrae	Big Zwey	
	Blue Duck	🛃 Cholo	
	B July Johnson	Dee Boot	
	Po Campo	🗟 Dish Boggett	***
	🖗 Wilbarger	🗟 Elmira Johnson	
	Woodrow F. Call	Frog Lip	
		Jake Spoon	
		Janey	
		Josh Deets	
		🛃 Lorena Wood	
		R Newt Dobbs	
Add Delete		Clo	se

- 2 Click Add.
- **3** Enter a name for the new user group.

- Monitoring Users
- User Groups User Group Details Supervisors Technicians I Name Technicians II Technicians II Selected Recipients Available Recipients 😽 Josh Deets 😽 Augustus McCrae 🖧 Lorena Wood 🖧 Big Zwey R Newt Dobbs R Blue Duck 🖧 Pea Eye 🖧 Cholo 🖧 Po Campo 🖧 Dee Boot 👵 Dish Boggett R Elmira Johnson 🖧 Frog Lip 🜷 Jake Spoon 👤 Janev Save Cancel Edit Delete Close
- 4 In the Available Recipients box, select the user(s) you want to add to the new user group. To select multiple users, hold the **Ctrl** or **Shift** key while you click them.

- 5 Click down on the highlighted user(s) to the Selected Recipients box.
- 6 Click Save.

# Monitoring Users

When you are logged into Centracs, you can open a list of all users currently logged in, along with their workstation name and login date and time. This is helpful when it is necessary for all users to log out — for example, when you do maintenance on the database. Centracs makes real-time updates to this monitoring window as users log in and out.

#### To see the list of current logins:

1 From the main menu, select **Monitoring ► Current Users.** The Current Users window opens.

Current Users			
User	Workstation	Login Date/Time	
Econolite User	CentracsWS2	10/1/2010 10:00:01 AM	
Econolite User2	CentracsWS2	10/4/2010 1:20:13 PM	

**2** Click  $\mathbf{X}$  to close the window.

If you have access to the Centracs reports, you can also get user login/logout information for a specified period of time via the User Login report (page 10-60).

Setting Up Communications

# **Setting Up Communications**

Centracs uses Device Managers for communications and for the management of various device types. One of the reasons the system is so scalable and expandable is that you can add more Device Managers. A Device Manager can be on the same machine as the Centracs Core and Centracs database, or on a different machine.

Before you can set up field devices in Centracs:

- 1 Configure Device Managers (page 20-32).
- 2 Configure Communication Channels (page 20-36).

**Note** • DCMS systems use Device Managers, but not Comm Channels. Autoscope device support is handled by the "Autoscope" Device Manager, the Autoscope Service, and the Data Collection service. RTMS device support is handled by the "Signals and Signs" Device Manager. For more information about this module of Centracs, refer to Chapter 17, Using DCMS for Data Collection.

**Note** • After you make changes to the Servers/Comms Configuration settings, it may be necessary to stop and start the Centracs services on the server machine to activate your changes.

## Configuring Device Managers

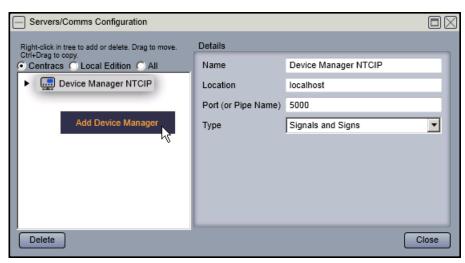
Device Managers manage all system communications. They isolate the knowledge of specific device types into separate executable applications, which allows modularity and scalability. The communication process uses a polled-response type of communications to the field devices. The Device Manager software does all of the low-level communications functions necessary to interface with the different field devices for traffic signal control, status monitoring, and data upload/download. Low-level functions include device polling, message input/output buffering, message sequencing and prioritization of tasks, error checking/correction, data filtering, and short-term data storage. This distributed processing architecture in the system relieves the traffic application/file server from doing these processing-intensive tasks and also prevents these functions from becoming a bottleneck on the local area network.

Centracs offers a pre-defined Device Manager that you can change or use as-is. You can also add more Device Managers.

Configuring Device Managers •

#### To add a Device Manager:

1 From the main menu, select **Configuration ▶ Servers/Comms...** The Servers/Comms Configuration window opens.



- 2 Leave the "Centracs" radio button enabled. (You cannot add Device Managers for Local Edition.)
- **3** Right-click in the blank area on the left side of the window and select "Add Device Manager" from the pop-up menu (as shown above).
- 4 In the Name field, enter a unique identifier for the new Device Manager.
- 5 In the Location field, specify the IP address or the computer name on the LAN for the Device Manager computer. If the Device Manager is on the same computer as the Centracs Core server, you can specify "localhost" or "127.0.0.1" as the location. In this case, Centracs uses the "named pipes" method of communication rather than TCP/IP.
- 6 In the Port field, enter the TCP port number. This must be a specific number for a specific Device Manager. If the server is on the same computer as the Centracs Core server, set the Port field to the name of the pipe rather than the TCP port number. For signals and for RTMS devices, use port 5000; for Autoscope devices, use port 5002.
- 7 From the Type dropdown, select the communications protocol:
  - Signals and Signs Select this if you are creating a Device Manager for signal controllers, RTMS devices, and/or DMS entities.
  - Autoscope Select this if you are creating a Device Manager for Autoscope detectors in a DCMS system.

- Configuring Device Managers
  - 8 If you selected Autoscope as the Type, several more fields are shown:

<ul> <li>Servers/Comms Configuration</li> </ul>		
Right-click in tree to add or delete. Drag to move.	Details	
Ctrl+Drag to copy. Centracs C Local Edition C All	Name	Device Manager Autoscope
Device Manager NTCIP	Location	localhost
Device Manager Autoscope	Port (or Pipe Name)	5002
	Туре	Autoscope
	SoloPro	ISS Version Autoscope 8
		Port 54832
	Terra/Encore/Duo	ISS Version Autoscope 10
		Port 54310
		Save Cancel Edit
Delete		Close

Complete the ISS Version and Port fields for whichever *Autoscope* model(s) you use (SoloPro, Terra, Encore, Duo). The ISS Version field must match the version of the ISS (Image Sensing Systems) Communications Server interface you use. The Port field must match the Listening Port set in the ISS Communications Server.

9 Click Save.

**Note** • Each Device Manager must have a unique combination of Location and Port values.

#### To edit a Device Manager:

- 1 From the main menu, select **Configuration ▶ Servers/Comms...** The Servers/Comms Configuration window opens.
- 2 click the Device Manager to change.
- 3 Make your changes in the Details section of the window.
- 4 Click Save.

#### To delete a Device Manager:

From the Servers/Comms Configuration window:

click the Device Manager to remove and click **Delete** at the bottom of the window.

Or

Right-click the Device Manager to remove and select "Delete Device Manager" from the pop-up menu.

Configuring Device Managers •

**Note** • If you attempt to delete a Device Manager that is associated with active devices, you will be prompted to first dissociate the devices (either by assigning a different Device Manager to them, or by deleting the devices from Centracs). Then you can delete the Device Manager.

# Configuring Communication Channels

Centracs offers two pre-defined communication channels that you can change or use asis — one IP and one Serial. You can also add more channels of these types:

- IP
- Serial
- TCP
- Serial over IP ▶ TCP
- Serial over IP ▶ UDP

**Note** • Centracs DCMS systems do not use Comm Channels.

### To add a channel:

- 1 From the main menu, select **Configuration ▶ Servers/Comms...** The Servers/Comms Configuration window opens.
- 2 If this channel will be used in Centracs Local Edition, click the "Local Edition" radio button. Otherwise, leave the "Centracs" radio button enabled.
- **3** Right-click a Device Manager.

Servers/Comms Configuration			
Servers/Comms Configuration	Details Name Location Port (or Pipe Name) Type	Device Manager NTCIP localhost 5000 Signals and Signs	
Add TCP Channel Add Serial over IP Channel Delete Device Manager			
Delete			lose

4 From the pop-up menu, select the type of channel to add (Serial, IP, TCP, or Serial over IP).

One of several sets of parameters is shown, depending on the type of channel you chose to add.

Servers/Comms Configuration		
Right-click in tree to add or delete. Drag to move.	Details	
Ctrl+Drag to copy.	Channel Type	IP
▼ 🛄 Device Manager NTCIP	Name	IP - NTCIP
局 IP - NTCIP	Protocol	UDP 🔽
Device Manager Autoscope	Time Format	Local
Device Manager ACT	Retries	3
	Poll Retries	0
Com Serial - ACT	Poll Error Threshold	3
	Primary Poll Rate (mSec)	1000
	Secondary Poll Rate (mSec)	30000
	Tertiary Poll Rate (mSec)	0
	Priority Poll Rate (mSec) Adaptive Poll Rate (mSec)	1000
	Device Timeout (mSec)	10000
	Max Expected Packet Size (bytes)	
	Source IP	0.0.0.0
	Source Port	0
	Broadcast IP	0.0.0.0
		Save Cancel Edit
Delete		Close

# Sample IP Channel:

# Sample Serial Channel:

Servers/Comms Configuration			
Right-click in tree to add or delete. Drag to move.	Details		
Ctrl+Drag to copy.	Channel Type	Serial	
Device Manager NTCIP	Name	Serial - ACT	
R IP - NTCIP	COM Port	1	
_	Protocol	ACT	-
Device Manager Autoscope	Baud Rate	19.2 kb/s	]
Device Manager ACT	Parity	None	]
Com Serial - ACT	Data Bits	8	
	Stop Bits	1 •	]
	Flow Control	None	]
	Time Format	Default	-
	Retries	3	1
	Poll Retries	0	1
	Poll Error Threshold	3	1
	Primary Poll Rate (mSec)	1000	1
	Secondary Poll Rate (mSec)	30000	
	Tertiary Poll Rate (mSec)	0	1
	Priority Poll Rate (mSec)	1000	1
	Adaptive Poll Rate (mSec)	10000	
	Device Timeout (mSec)	1000	
	Intra-Packet Timeout (mSec)	1500	
	Max Expected Packet Size (bytes)	1500	
		Save Cancel Ed	it
Delete		Close	•

- Configuring Communication Channels
  - **5** In the Details section of the window, specify values for the appropriate fields for the chosen channel type. All parameters for the various channel types are defined below, in alphabetical order. Unless specified otherwise, all fields are required.

Field	Description
Adaptive Poll Rate	During periods when primary polling is considered to be in a failed polling state (because the number of consecutive poll attempt failures reached the Poll Error Threshold), Centracs changes from the Primary Poll Rate to the slower Adaptive Poll Rate. This prevents Centracs from continuing to frequently poll a device when there are no comms to that device. This is especially helpful on serial channels where many controllers share the same channel and all comms must be done sequentially. If a poll succeeds at any time during adaptive polling, the counter is reset, and polling goes back to the Primary Poll Rate. This value is in milliseconds.
Baud Rate	For serial channels, the data transmission rate (between 1200 bytes per second and 154.2 kilobytes per second).
Broadcast IP	For IP channels, the broadcast address for the group of devices to which Centracs will send time broadcasts. If left blank, time broadcasts are sent to all devices.
Channel Type	IP, Serial, TCP, Serial Over TCP, or Serial Over UDP.
COM Port	For serial channels, the number of the Windows COM port. For COM1, enter "1". Each serial channel within a specific "Centracs" Device Manager must have a unique port number. (Serial channels for "Local Edition" Device Managers are not required to have unique port numbers.)
Data Bits	For serial channels, the number of data bits per byte (7 or 8).
Destination IP	For serial over IP channels.
Destination Port	For serial over IP channels.

Field	Description
Device Timeout	The number of milliseconds the Device Manager will wait for a device to reply before considering the communication request to have failed. More specifically, this is the time from when the device receives the last byte of the incoming packet until it sends the first byte of the outgoing packet (also known as the device turn-around time), plus any expected delays in the communication medium.
	For serial channels, do not include the time for the transmission itself in this parameter because the sending transmission time is automatically computed from the packet size and the baud rate, and the receiving transmission time is checked by the Intra-Packet Timeout parameter (below).
	<b>Note</b> • For help determining whether your timeout value is too large or too small, refer to the examples in <i>Interpreting the Comm Stats Graph</i> on page 6-58.
Flow Control	For serial channels, the type of flow control used to prevent the sending computer from transmitting information at a faster rate than the destination computer can receive/process it. Choices are the XON/XOFF protocol (software flow control), RTS (Request to Send) protocol (hardware flow control), both, or none.
Intra-Packet Timeout	For serial channels, the number of milliseconds the Device Manager will wait between received bytes before considering the transmission to have failed. The time for the first byte of a response to be received is checked by the Device Timeout parameter (above), but after that first byte is received, the gaps between the arrivals of subsequent bytes must not be larger than the Intra-Packet Timeout value.
Max Expected Packet Size	The largest size expected for a packet, in bytes. The PMPP (Point-to-Multi-Point Protocol) uses this to prevent a received packet from overflowing the input buffer if no terminating character is received. For no limit, enter 0.
Name	A unique alphanumeric string to identify the channel. You can change this name at any time without any effect on communications. If you will have multiple channels, it is recommended that you use descriptive names. For example, you can have two serial channels named "Serial - NTCIP - 19.2 kb/s" and "Serial - ACT - 1200 b/s".
Parity	For serial channels, the type of parity (Odd, Even, Mark, or Space) used to detect errors in transmission. (In Mark parity, the parity bit is always 1; in Space parity, the parity bit is always 0).

Field	Description
Poll Error Threshold	Primary polling is considered to have failed when the number of consecutive poll failures reaches this number. When this threshold is reached, polling changes from the Primary Poll Rate to the slower Adaptive Poll Rate (refer above). Adaptive polling is a means to slow down the polling for a device with failed communications so that the channel is not tied up waiting for communication timeouts. By continuing to poll, but at a slower rate, polling automatically goes back to normal when communications are restored. The Poll Error Threshold has no effect on the overall communications status (good, marginal, or bad); it only decides which polling rate to use.
Poll Retries	The default number of retries for polling communication attempts by the Device Manager. This sets the number of times the system will try to send a poll to a device before considering the operation to have failed. For more information, refer to <i>Overview of Polling Comms vs. Non-polling Comms</i> on page 20-47.
	You can also override the number of poll retries for a specific device via the Poll Retries parameter in the Device Communication Configuration window (page 3-44).
	Poll retries only occur if neither the Priority Poll Rate nor the Adaptive Poll Rate is in effect, and the device is not in a state of communications failure. Poll Retries apply to Primary, Secondary, and Tertiary polls.
	In some cases, setting Poll Retries to a value greater than zero will allow customers (especially those in a cellular environment) to set slower Primary/Secondary/Tertiary poll rates; consult Econolite Technical Support to discuss whether this scenario is appropriate for your situation. Once poll rates are reduced, the importance of poll retries is greater. For example, in a traditional one-second polling model, it is not crucial that a single poll request be successful, because another poll will occur in one second. But when the poll rate is reduced, say to 30 seconds, it is more important that the request be given multiple chances to succeed, because another poll will not occur for 30 seconds.

Field	Description
Primary Poll Rate	The default rate of primary polling for the channel, in milliseconds. A value of zero disables polling. The recommended value is 1000 milliseconds (1 second).
	You can override the primary poll rate for a specific device via the Primary Poll Rate parameter in the Device Communication Configuration window. Refer to page 3-44.
	In Centracs, you can set three different polling rates for three different types of polling. The information requested in each type of poll is dependent on the device type. For NTCIP signal types, the information requested in each type of polling is configurable via the Polling Packet Editor (page 20-50). For example, you can poll for critical data (such as the flash status of each signal) every second, and poll for less critical information (such as volume and occupancy data) every 30 seconds; in this case, you would set the Primary Poll Rate to 1000 milliseconds and the Secondary Poll Rate to 30000 milliseconds. The poll rates on this window are the default rates for a comm channel, but the communication settings of an individual device (on the Device Communication Configuration window) can override these values. A value of zero disables polling.

Field	Description
Priority Poll Rate	The Primary/Secondary/Tertiary Poll Rates define static polling intervals, whereas the Priority Poll Rate option allows for on-demand polling, which requests data only when the user needs it. Priority polling is automatically activated for a specific signal or DMS device when these "polling priority" features are used by any user:
	<ul> <li>Signal Status Display</li> </ul>
	DMS Status Display
	Split Monitor Logging
	<ul> <li>Map Viewer (only if Priority Polling is enabled in the Map Layers; for details, refer to <i>Editing Map Layer Settings</i> on page 20-83)</li> </ul>
	When priority polling is activated, the Priority Poll Rate is used instead of the Primary Poll Rate. When Centracs must communicate with many devices over the same channel, this allows more efficient display of status to the user. This also allows customers using cellular modems to reduce data charges — you can set a slower Primary Poll Rate for normal monitoring of pattern activity and general status, but then switch automatically to a faster priority poll rate for specific devices only when needed.
	Once all the polling priority functions (listed above) are closed/stopped, priority polling expires after approximately one minute.
	Notes:
	The Priority Poll Rate is only used if it is configured to be faster than the Primary Poll Rate.
	<ul> <li>The default Priority Poll Rate is 1000 milliseconds (1 second) for a new signal and 10000 milliseconds (10 seconds) for a new DMS.</li> </ul>
	Priority polling does not apply to Secondary or Tertiary polling.
	<ul> <li>A value of zero disables priority polling.</li> </ul>
	On the Comm Statistics window (page 6-51), the Subscribers column shows which Centracs functions, if any, are currently requesting priority polling for a device. (Even if you have the Priority Poll Rate set to 0, the Subscribers column shows you which priority polling features are in use.)

Field	Description
Protocol	The protocol to use over IP on the channel:
	<ul> <li>UDP – This is the default. This option usually does not add any layer other than the UDP protocol.</li> </ul>
	PMPP – Wraps the communications packet in NTCIP PMPP (Point-to-Multi-Point Protocol) before wrapping it in UDP. This is useful for devices that use a terminal server to change Ethernet to serial. The PMPP uses the serial drop address from the Device Communication Configuration (page 3-44). If that address is "0", specification of PMPP for the protocol will force it to "1" before use.
	<ul> <li>ACT – Assumes the data is in the ACT protocol for use with Oasis and W4 controllers, and then wrapped in UDP.</li> </ul>
	<ul> <li>RTMS – For Remote Traffic Microwave Sensor devices in DCMS systems.</li> </ul>
Retries	The default number of retries for non-polling communication attempts by the Device Manager. This sets the number of times the system will try to send a command to a device before considering the operation to have failed. For more information, refer to <i>Overview of Polling Comms vs.</i> <i>Non-polling Comms</i> on page 20-47.
	For some types of devices and communications, the Device Manager can override this value. For example, in some devices where polling is frequent (such as one time per second), the retry count is overridden with a zero.
	You can also override the number of retries for a specific device via the Retries parameter in the Device Communication Configuration window (page 3-44).
Secondary Poll Rate	The default rate of secondary polling for the channel, in milliseconds. Secondary polling is usually used for volume/occupancy/speed data from vehicle detectors. A value of zero disables polling. The default value is 60000 milliseconds (60 seconds).
	You can override this poll rate for a specific device via the Secondary Poll Rate parameter in the Device Communication Configuration window (page 3-44).
	For more information, refer to the Primary Poll Rate parameter on page 20-41.
Source IP	For IP channels, the source IP address for outgoing packets from the Device Manager. For a Device Manager that includes multiple network interfaces, you can use this option to specify the correct network interface. If you use the default value of 0.0.0.0, the operating system selects the network interface and the IP address. For ASC/2 controllers, you must specify a non-zero Source IP.

Field	Description
Source Port	For IP channels, the source UDP port for outgoing packets from the Device Manager. If you use the default value of 0, the operating system selects the port number. This setting is useful when a dedicated port number is necessary, for example in devices that use terminal servers that must be configured with the destination port number (such as ASC/2 controllers). It can also be used by the administrator of a restrictive network to dictate the port through which communications will occur. For ASC/2 controllers, you must specify a non-zero Source Port.
Stop Bits	For serial channels, the number of stop bits sent at the end of each byte (1, 1.5, 2, or none).
Tertiary Poll Rate	The default rate of tertiary polling for the channel, in milliseconds. A value of zero disables polling. Because tertiary polling is seldom used, zero is the default.
	You can override this poll rate for a specific device via the Tertiary Poll Rate parameter in the Device Communication Configuration window (page 3-44).
	For more information, refer to the Primary Poll Rate parameter on page 20-41.
Time Format	When the system sends the time to a device, it gets the current time from the Device Manager just before the packet is transmitted. This parameter specifies which format to use when it adds the current time to the packet:
	<ul> <li>Default – Uses the default time format, as set in the "DefaultTimeFormat" Global Setting. The default for this Global Setting is to use the local time.</li> </ul>
	<ul> <li>UTC – Uses Coordinated Universal Time (UTC), and ignores the local time zone offset.</li> </ul>
	■ Local – Uses the local time.
	<ul> <li>ACT – Uses the time format used by devices that support the ACT protocol (specifically, the Oasis and W4 controllers).</li> </ul>
	For time broadcasts, all devices on the same channel must expect the same time format. In the case of a mixture of ASC/2 and ASC/3 (or Cobalt) controllers, select the local time format (ASC/2 controllers only support local time), and configure the ASC/3 and Cobalt controllers to expect local time (i.e., set the time zone offset to zero).
	<b>Note</b> • The time format specified in Centracs must be the same as the time format configured on the controller.

6 Click Save.

**Note** • To add more channels with similar characteristics, it is not necessary to add a new one from scratch — you can simply make a copy of an existing channel. For details, refer below.

#### To edit a channel:

- **1** From the Servers/Comms Configuration window, click the channel to change.
- 2 Make your changes in the Details section of the window, then click **Save**.

#### To delete a channel:

From the Servers/Comms Configuration window:

• click the channel to remove and click **Delete** at the bottom of the window.

Or

• Right-click the channel to remove and select "Delete Channel" from the pop-up menu.

**Note** • If you attempt to delete a channel that is associated with active devices, you will be prompted to first dissociate the devices (either by assigning a different channel to them, or by deleting the devices from Centracs). Then you can delete the channel.

#### To move a channel to a different Device Manager:

- 1 From the Servers/Comms Configuration window, drag and drop the channel from the old Device Manager to the new Device Manager.
- 2 Click Save.

#### To copy a channel:

- 1 From the Servers/Comms Configuration window, hold the **Ctrl** key while you drag and drop the channel to a new Device Manager.
- 2 Optionally, after the copy is added, you can drag the copy back to the original Device Manager.

# Overview of Polling Comms vs. Non-polling Comms

Centracs makes a distinction between comm requests associated with the periodic polling of devices (referred to as "polling comms") and other comm operations such as commands to send a pattern change, synchronize the time, and upload/download controller settings (referred to as "non-polling comms"). When Centracs determines that there is a communications problem and issues the "Communication Bad - ON" or "Communication Marginal - ON" event, this is based on polling comms only.

### Non-Polling Comms

When a non-polling comm request fails, the operation that started the comm request (for example, a command to update the time on the device) fails; but unsuccessful non-polling comm requests do not affect the overall status of communications. As long as the polling comm requests are successful, communications are considered to be good.

On the Comm Statistics monitoring window (page 6-51), the Attempts, Failures, and Comm Success % values include both polling and non-polling comms; the Poll Success % column is based on polling comms only.

The Retries field (page 20-43) in the Servers/Comms Configuration for a communications channel (and also in the Device Communication Configuration for a device) applies only to non-polling comms, such as sending a command to a device; the Poll Retries field applies only to polling comms.

**Note** • A number of non-poll attempts occur automatically when Centracs first establishes comms to a device.

### Polling Comms

### Adaptive Polling

The Poll Error Threshold field (page 20-40) in the Servers/Comms Configuration for a communications channel tells Centracs when to consider primary polling to have failed. If the number of consecutive poll failures reaches this number, Centracs changes from its normal Primary Poll Rate to a slower Adaptive Poll Rate (both of these values are also defined on the same window as Poll Error Threshold). This prevents Centracs from continuing to frequently poll a device when there are no comms to that device. This is especially helpful on serial channels where many devices share the same channel and all comms must be done sequentially. If a poll succeeds at any time during adaptive polling, the counter is reset, and polling goes back to the Primary Poll Rate. The Poll Error Threshold has no effect on the overall communications status (good, marginal, or bad); it only decides which polling rate to use.

### Communications Status

Communications between Centracs and a device are always considered to be in one of three conditions: good, bad, or marginal. You can configure Centracs to issue events when communications change from one condition to another, such as from good to marginal. You can then define triggers to alert you when these events occur.

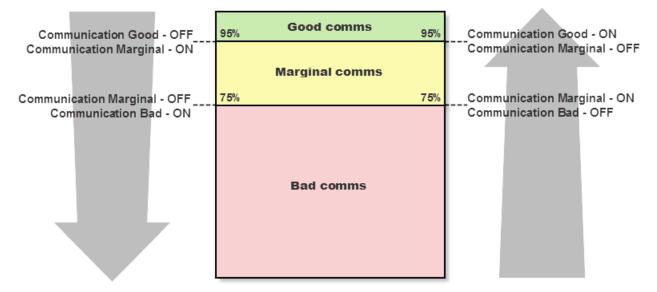
• Overview of Polling Comms vs. Non-polling Comms

Specifically, you can set up Centracs to issue the events below when the polling success rate crosses user-specified thresholds:

- Communication Bad ON
- Communication Bad OFF
- Communication Marginal ON
- Communication Marginal OFF
- Communication Good ON
- Communication Good OFF

(For more information about these event types, refer to Events on page 4-2.)

The thresholds are specified in the "FilteredCommBad" and "FilteredCommMarginal" Global Settings. Each time a threshold is crossed, two events are issued: one to tell you the prior state of communications, and one to tell you the current state. The graphic below illustrates the events that occur at each threshold, depending on whether communications are in decline (left side of graphic) or in recovery (right side of graphic).



For example, if you set FilteredCommMarginal to 95%, and if Centracs determines that the polling success rate has dropped from 100% to below 95%, the "Communication Good - OFF" and "Communication Marginal - ON" events are issued. If you set FilteredCommBad to 75%, and if Centracs determines that the polling success rate has dropped below 75%, the "Communication Bad - ON" and "Communication Marginal - OFF" events are issued. As communications are regained and the FilteredCommBad threshold is crossed again (but in the opposite direction), the "Communication Bad - OFF" and "Communication Bad - OFF" and "Communication Marginal - OFF" and "Communication Marginal - OFF" and "Communication Bad - OFF" and "Communication Marginal - ON" events are issued.

**Note** • "Good" comms are considered to be anything above the FilteredCommMarginal value.

**Note** • The "Marginal" events may be skipped, especially if you configure a small range between the FilteredCommMarginal and FilteredCommBad values. For example, if you set FilteredCommMarginal to 90% and FilteredCommBad to 85%, then if comms suddenly drop from 100% to 80% in an instant, the "Communication Marginal - ON" and "Communication Marginal - OFF" events may not get triggered. Instead, you will see "Communication Good - OFF" followed directly by "Communication Bad - ON".

In addition to the events that are issued, the map visuals that represent a device change colors to reflect the current state of communications. For example, a signal and a DMS with good comms are shown as:



The same signal and DMS with bad comms are shown as:



You can see the current polling success rate on multiple screens, including:

- the "Comms" section of the Signal Status display (page 6-1)
- the "Comms" section of the Autoscope Status display (page 17-29)
- the "Comm" column on the Section/Subsection Status display (page 6-10)
- the "Communications" column on the Device Status window (page 6-23)
- the "Poll Success %" column of the Comm Statistics monitoring window (page 6-51)

To determine the polling success rate, Centracs monitors successive polls over a period of approximately 30 seconds and calculates the percentage of those polls that were successful. You can think of it as looking at a sliding window of the last 30 seconds of polls. The number of successful polls during this time is divided by the total number of polls attempted during that window. When the sliding average is calculated, the most recent

Configuring Polling Packets

poll is weighted heavier than the others because, presumably, the last poll is more indicative of the current state of communications than a poll that occurred 20 or 30 seconds ago. (The weighting factor is set in the "FilteredCommWeightingFactor" Global Setting.)

# Configuring Polling Packets

### **NTCIP Controllers**

Use the Polling Packet Editor to set the types of information that Centracs requests in primary, secondary, and tertiary polls to the controllers. For example, you can poll for some types of information (such as the flash status of each signal) every second via primary polls, and other less critical types of information (such as volume and occupancy data) every 30 seconds via secondary polls.

### To add a new polling packet definition:

1 From the main menu, select Configuration ▶ Polling Packets...

The Polling Packet Editor opens.

Polling Packet Editor  Dynamic Object Definitions:						
ASC/3 Primary Poll ASC/3 Secondary Poll ASC/2 Primary Poll ASC/2 Secondary Poll	View/Edit: Dynamic Object Definition         Name:       ASC/3 Primary Poll         Description:       Primary Poll         Dynamic Object Fields:       Available MIB Objects:					
	phaseStatu phaseStatu phaseStatu phaseStatu phaseStatu unitControl unitFlashS unitAlarmS shortAlarmS shortAlarm specialFun coordPatte	tatus tatus2 status1 Status ctionOutputStatus rrnStatus	Index 1 1 1 1 1 1 1 1 1 1 N/A N/A N/A N/A N/A N/A 1 N/A	Index 2 N/A N/A N/A N/A N/A N/A N/A N/A N/A N/A		alarmGroupState asc3DownloadRequest asc3SworlapStatusGroupFlashing asc3pedOverlapStatusGroupPedClears asc3pedOverlapStatusGroupPlashing coordOycleStatus coordPatternStatus coordSyncStatus OID: 1.3.6.1.4.1.1206.4.2.1.3.12.1.2 OID Description: 8 bits of alarm input status. Index1=which set of 8 alarms (1=alarms 1-8).
New Delete Copy	Auto Add	Detector Fields				Close

The four definitions shown above are the defaults that are included when Centracs is initially installed. You can change or delete these if necessary.

- 2 Click New...
- 3 Enter a name and, optionally, a description for the new polling packet definition.
- 4 From the Signal Type dropdown, select the type of controller that will be polled.

Configuring Polling Packets •

5 From the "Available MIB Objects" list, select the types of information to be included in the poll, and move them to the "Dynamic Object Fields" list. To move objects, double-click them or highlight them and click <./p>

The list of available objects depends on the chosen Signal Type. To show the meaning of an object, click the object name; a description is shown in the "OID Description" box (where OID=Object ID). Consider your bandwidth limitations before you choose a large number of objects.

6 Click Save.

After a polling packet definition has been saved, you can choose it from the Primary Poll, Secondary Poll, or Tertiary Poll dropdown list on the Entity Configuration window for a signal. The rate of polling for the new packet is specified on the Servers/Comms Configuration window (for all devices on a specific channel; refer to page 20-36), or on the Device Communication Configuration window (for a specific device; refer to page 3-44).

### Polling Packets for Detector VOS Data

Secondary polling is usually used to gather VOS (Volume/Occupancy/Speed) data from the vehicle detectors. To collect VOS data from detectors that are not defined in the Entity Tree, the secondary polling packet must include a "detectorVolume" and "detectorOccupancy" object for each detector to poll (where Index 1 is set to the detector number). As a convenience, the "Auto Add Detector Fields" option automatically polls all detectors that are defined in the Entity Tree as children of the signal. When this option is enabled, it is not necessary to configure the "detectorVolume" and "detectorOccupancy" objects for these detectors.

### **ACT Controllers**

For ACT controllers, the types of information that Centracs requests in primary, secondary, and tertiary polls to the controllers are:

Primary Poll Packet

- Signal phases and phase states
- Overlaps
- Pedestrian phases
- Preempts
- Vehicle calls
- Pedestrian calls
- Coordination plan
- Local clock
- Master clock
- Local zero

Configuring Polling Packets

Secondary Poll Packet

Detector counts (for detectors defined in the Entity Tree)

Tertiary Poll Packet

- Flash status
- Transition
- Stop time
- Free state
- Low AC
- 24V failure
- Conflict
- Red failure
- Watchdog error
- Special monitor
- Special functions
- Police switch
- Keyboard hit

For an Oasis controller, the tertiary poll also contains the actual plan/offset, and the reason it is running that plan/offset.

Configuring Local and Global Settings •

# **Configuring Local and Global Settings**

# **Overview of Local Settings**

**Note** • The Local Settings window shows all available settings for all systems. Some settings may not apply to your installation.

You can use Local Settings to customize various parameters that control how the Centracs application behaves on a specific workstation.

In most cases, the settings configured for you by Econolite during the initial system installation are sufficient and do not require modification.

**IMPORTANT** • Do not delete any of the settings configured by Econolite personnel during installation.

Local Settings are customizable for each user. They control local behaviors such as whether an alert shows a pop-up window on the screen and/or makes a sound. They also control the levels and types of logging done on the local machine.

**Note** • Some settings are included in both Global Settings *and* Local Settings. In such cases, if both are set, the Local Setting overrides the Global Setting.

Parameter	Parameter Group	Description
Login With Local Preference Sets	Centracs	Allows you to use different preference sets for different workstations. The default is false. For more information, refer to <i>Using Preference Sets</i> on page 2-19.
Save Floating Windows	Centracs	Controls whether any undocked floating windows are saved to your current preference set when you log out.
Save Preference Set On Logout	Centracs	Controls whether Centracs automatically saves changes to the current preference set when you log out. The default is true. For more information, refer to <i>Using Preference Sets</i> on page 2-19.

These Local Settings are modifiable by all users:

Overview of Global Settings

Parameter	Parameter Group	Description
Local Auto Logout Time	Centracs	Controls how long (in minutes) you can be inactive in the Centracs application before the system logs you out; this setting takes effect only if the "Allow Local Auto Logout Time" Global Setting is not set to "false".
		<b>Note</b> • If the "Allow Local Auto Logout Time" Global Setting is set to "true", and if the "Global Auto Logout Time" Global Setting and the "Local Auto Logout Time" Local Setting are both enabled, the "Local Auto Logout Time" setting overrides the "Global Auto Logout Time".

All other Local Settings are modifiable only by users with sufficient Application Role permissions.

For more information, refer to *Viewing and Editing Global and Local Settings* on page 20-61.

# **Overview of Global Settings**

**Note** • The Global Settings window shows all available settings for all systems. Some settings may not apply to your installation.

You can use Global Settings to customize various parameters that control how the Centracs application behaves globally — that is, for all users in the system.

In most cases, the settings configured for you by Econolite during the initial Centracs installation are sufficient and do not require modification.

**IMPORTANT** • Do not delete any of the settings configured by Econolite personnel during installation.

Use Global Settings to configure system-wide settings such as diagnostic logging levels and intervals, proxy settings, memory thresholds, and map zoom levels. These settings are usually accessible only to administrators of the system.

**IMPORTANT** • With a few exceptions (identified below), we recommend that administrators do not change these settings unless instructed to do so by Econolite personnel. If you feel that a setting should be changed, please contact Econolite Technical Support to discuss.

The Global Settings below can safely be changed without contacting Econolite Technical
Support:

Parameter	Parameter Group	Description			
Alert Settings					
Core Alert Cap	Core	Controls the maximum number of alerts that can be in the Alert List (page 4-22) at one time. The default value is 1000; the maximum value is 5000. Once per minute, Centracs checks the total number of alerts in the Alert List; if the alert cap is exceeded, Centracs closes the oldest alerts. (To see these alerts that Centracs closes automatically, you can run the Alerts Log; refer to page 10-18.)			
Core Offline Alert Fetching Enabled	Core	Controls whether responses to offline SMS/email alerts will be fetched and applied to the system.			
Core Offline Alert Fetching Interval	Core	Controls how frequently Centracs logs in to the mail server to retrieve responses to offline SMS/email alerts.			
Toast Enabled	Centracs	Controls whether alerts are shown in a pop-up "toast" window at the bottom of the screen for each user.			
Toast Size	Centracs	Controls the size of alert pop-ups.			
Toast Duration Secs	Centracs	Controls how long an alert pop-up is shown before it closes.			
Toast Filter	Centracs	Controls which levels of alerts are shown in pop-ups (all, Critical only, or Critical and Warning).			
Toast Sound	Centracs	Controls whether alert pop-ups are accompanied by a sound.			
CCTV Tooltip Settings					
Cctv Tooltip Width Px	Centracs	Controls the pixel width of the CCTV video display window for camera views accessed via the Map Viewer.			
Cctv Tooltip Height Px	Centracs	Controls the pixel height of the CCTV video display window for camera views accessed via the Map Viewer.			
Communications Setting	gs				
Comm Statistics Log Period	Comms	This setting defines the interval at which communication statistics are logged for the Comm Statistics report (page 10-20).			

#### **Centracs Administration**

Parameter	Parameter Group	Description		
Filtered Comm Bad	Comms	The threshold at which Centracs considers communications to a device to be "bad". For more details, refer to <i>Communications Status</i> on page 20-47.		
Filtered Comm Marginal	Comms	The threshold at which Centracs considers communications to a device to be "marginal". For more details, refer to <i>Communications Status</i> on page 20-47		
Logout Settings				
Allow Local Auto Logout Time	Centracs	Controls whether users can change the "Local Auto Logout Time" setting for their workstation.		
Global Auto Logout Time	Centracs	Controls how long (in minutes) a user can be inactive in the Centracs application before the system logs them out. If "Allow Local Auto Logout Time" is enabled, individual users can override this timeout setting.		
Auto Logout Time	Centracs	If the following conditions are true:		
Warning		the database editor/signal editor is open, and		
		<ul> <li>Centracs is getting ready to log out the user due to a period of no activity, and</li> </ul>		
		<ul> <li>this global setting is less than the Auto Logout Time global setting,</li> </ul>		
		then Centracs issues a warning that the editor will be closed soon and any changes will be lost. For example, if the Auto Logout Time is 10 minutes and the Auto Logout Time Warning is 8 minutes, Centracs issues a warning two minutes before logging out the user. If the Auto Logout Time Warning is disabled or is greater than the Auto Logout Time, no warning is issued.		
Preference Settings				
Login With Local Preference Sets	Centracs	For details, refer to <i>Overview of Local Settings</i> on page 20-53.		
Save Preference Set On Logout	Centracs	For details, refer to <i>Overview of Local Settings</i> on page 20-53.		

Parameter	Parameter Group	Description
Signal Settings		
Enable Remote Interval Advance	Device Manager	Turns on Remote Manual Advance mode, which allows you to manually control a signal from the Signal Status display (page 6-1). It adds a slide-out menu to the Signal Status display with options to:
		Enter Manual Advance mode
		Advance the interval
		Exit Manual Advance mode
Restrict Set Pattern In Flash	Centracs	If set to true, this option allows a non-administrator user to put signals in Flash, but if the user attempts to put the entire System entity in Flash, an error message tells the user they do not have permission to do this.
Stuck Preempt Timeout	Core	Controls the length of time a preempt can be active before Centracs triggers a "Stuck Preempt" event. Refer to the Preempt events on page 4-13.
System Pattern Override Enable	Signals	For ASC/3 and Cobalt controllers only. Adds a System Pattern Override checkbox when configuring a Set Pattern action for a signal. See "System Pattern Override Default" below.

#### **Centracs Administration**

Parameter	Parameter Group	Description
System Pattern Override Default	Signals	For ASC/3 and Cobalt controllers only. Determines the default value for the System Pattern Override checkbox when configuring a Set Pattern action for a signal. See "System Pattern Override Enable" above.
		When the System Pattern Override checkbox is enabled, a Set Pattern command from Centracs completely overrides the current action plan that is running on the controller with the new one. The Mode/Pattern section of the Signal Status display shows OTHER/x (where x is the pattern number).
		When the checkbox is disabled, the existing action plan and the new action plan are OR'd together, and the Mode/Pattern section of the Signal Status display shows SYS/x (where x is the pattern number).
		For complete information about how to configure your controllers so that you can remotely activate controller action plans from Centracs, as well as how to activate/ deactivate action plans from Centracs using a manual command/scheduled command/action set, refer to Application Note AN2164 "Controller Action Plan Activation from Centracs", available on the <u>Econolite</u> <u>website</u> .
Use Oasis Split Monitor Log	Centracs	<i>For Oasis controllers only.</i> Specifies the source of the data used in the Split Monitor window and the Split Monitor report:
		If set to true, the Split Monitor functions in Centracs use the data logged in the Split Monitor log on the Oasis controllers themselves. This setting may result in more accurate Split Monitor data. However, you must consider your bandwidth limitations in the comms between Centracs and your Oasis controllers before setting this option to true.
		<ul> <li>If set to false, the Split Monitor functions use the data logged by Centracs when it receives information in poll responses from the Oasis controllers. With this setting, you may see occasional aberrations in the Split Monitor data due to missed poll responses.</li> </ul>
		This setting applies to <i>all</i> Oasis controllers in your system. The default is false.
		Whether this option is set to true or false, you must still run the "Split Monitor Logging" action to collect the data.

Parameter	Parameter Group	Description
Other Settings		
Activate Detector Diagnostics	Centracs	Controls whether Centracs monitors detector faults for all detectors. (It may be necessary to stop and start the Centracs Core service on the server machine in order for changes to this parameter to take effect.)
		For more information, refer to <i>Monitoring Detector</i> <i>Faults</i> on page 6-48 and <i>Detector Fault Status Report</i> on page 10-22
		Note • If this setting is turned on, users can also see detailed information about an existing detector fault by hovering the mouse pointer over the detector fault icon for an intersection on the Map Viewer or the Signal Status display (note that the detector fault icon must be configured in the Map Editor for that intersection in order for this feature to work).
ECcomPath	Centracs	Sets the path to the executable for the EDI Malfunction Management Unit (MMU) Conflict Monitor program.
Link LOS Source	Centracs	<i>For Level of Service links only.</i> Specifies whether to base the Level of Service calculations for all Links in the system on Volume, V+kO, Occupancy, or Speed data:
		1 = Volume
		2 = Occupancy
		■ 3 = Speed
		■ 4 = V+kO
		The default is Volume. (For BlueTOAD links, Level of Service calculations are always based on speed data.)
Show Exact Time Drift	Centracs	Controls how controller time drift is shown in the Status display. If this option is set to true, the exact time drift for a controller is shown in seconds, minutes, or hours (as appropriate). If this option is set to false, and if the time drift is larger than 60 seconds, the drift is shown as "Error: > 1 min".

#### **Centracs Administration**

• Overview of Global Settings

Parameter	Parameter Group	Description
Spatial Timeout	Centracs	For the Time Space Analysis window. On systems that use spatial map data, Centracs uses the spatial data in the database to determine the distance between each intersection in the Time Space diagram. If Centracs is unable to get a distance from the spatial database within the time specified by this global setting (which defaults to 15 seconds), the distance is set to 0. Refer to <b>Using the</b> <b>Time Space Analysis</b> on page 6-33.
Use Asset ID For ACT Synchro	Centracs	This option is used with the Synchro Import and Synchro Export options for ACT controllers:
		<ul> <li>If set to true, the INTID value is the asset ID / serial drop address.</li> </ul>
		If set to false, the INTID value is the entity ID.
		For more information, refer to <i>Using the UTDF Interface</i> <i>Module</i> on page 15-24.
Use Metric Units By Default	Centracs	For the Time Space Analysis window. If set to true, metric units are used by default for speed (kph) and distance (km) in all newly added Time Space configurations. Refer to <b>Using the Time Space Analysis on page 6-33</b> .

**Note** • Some settings are included in both Global Settings *and* Local Settings. In such cases, if both are set, the Local Setting overrides the Global Setting.

For more information, refer to *Viewing and Editing Global and Local Settings* on page 20-61.

Viewing and Editing Global and Local Settings •

# Viewing and Editing Global and Local Settings

## To see or change the settings currently in effect for your system:

1 From the main menu, select Management ▶ Local Settings... or Management ▶ Global Settings...

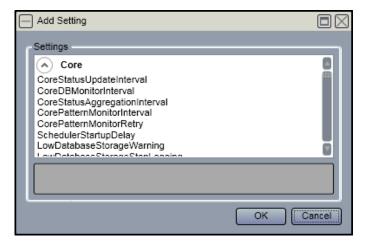
The Settings Editor opens.

Global Application Settings Editor	
Settings	_
Key	
Centracs	
Core	
	- 10
	- 11
	- 10
	- 10
	_11
Add Delete	ose

2 To see the settings which have already been activated, click the down arrow (*circled above in red*) to expand the parameter lists.

Global Application Settings E	ditor	
Settings		
Key		
<ul> <li>Centracs</li> </ul>		
AllowLocalAutoLogoutTime GlobalAutoLogoutTime	false 20	
ToastDurationSecs ToastEnabled	120 1	- 11
ToastFilter ToastSize	1 2	
Core		
Add Delete		Close

- Viewing and Editing Global and Local Settings
  - 3 To add a new setting, click Add... The Add Setting window opens.



4 Expand the parameter lists to find the setting you want. As shown below, when you click a setting, a description of that setting is shown near the bottom of the window (*highlighted below in yellow*).

Add Setting	
Settings OASISDeitaStep SkinEditorEnable ToastSound ShowNavteqLogo ShowRefreshMenuItem MapImageMoveOpacity AdvancedCCT/Username AdvancedCCT/Vername AdvancedCCT/Vername AdvancedCCT/Vername ShowSignalDouMarSimulateDrap	
Play Toast Sound: Off = 0, Play sound once = 1, Play sound continuously = 2. Default is 1.	
ОК Са	ancel

5 Double-click the setting, or single-click it and click **OK**. To select multiple settings, hold the **Ctrl** or **Shift** key while you select them, or to select all settings, press **Ctrl-A**.

Viewing and Editing Global and Local Settings

The Settings Editor is shown again, with the addition of the setting(s) you selected.

Global Application Settings E	ditor	
Settings		
Key		
<ul> <li>Centracs</li> </ul>		
AllowLocalAutoLogoutTime GlobalAutoLogoutTime ToastDurationSecs ToastEnabled	false 20 120 1	
ToastFilter ToastSize ToastSound		_
<ul> <li>Core</li> </ul>		
EmailBody EmailSubject SmsBody	Alert Criticality: [Criticality][NewLine]Source Event Name: [EventNa Centracs [Criticality] Alert: [Name], Event: [EventName] Alrt: [Name], Tm: [RaiseTime], Crit: [Criticality], Evt: [EventName]	ame]
Play Toast Sound: Off = 0, Pl	ay sound once = 1, Play sound continuously = 2. Default is 1.	
Add Delete	C	lose

- **6** Double-click the current value of the setting, then type the new value over it.
- 7 To save your change(s), press Enter.
- 8 To close the window, click **Close**.

For more information, refer to *Overview of Local Settings* on page 20-53 and *Overview of Global Settings* on page 20-54

• Configuring the Advanced CCTV Feature

# **Configuring the Advanced CCTV Feature**

## To initialize the advanced CCTV feature of Centracs:

- 1 Install the Genetec Omnicast client software (optional) and SDK redistributables on the server and client machines. For details, refer to the Genetec documentation.
- 2 Set up the cameras in the Genetec software. For details, refer to the Genetec documentation.
- 3 Set up a user in the Genetec software, with the desired permissions for *most* Centracs users. For details, refer to the Genetec documentation. The username should be no longer than 32 characters. If you choose to assign a password, it should be no longer than 128 characters. The permissions in Genetec that affect Centracs are:

Genetec Permission	Description
SDK (under Applications)	This is required to see the video feed from the camera in Centracs.
Plugin Configuration (under Config Tool privileges)	This is required to see the video feed from the camera in Centracs.
Perform basic operations (under PTZ controls)	This is required to use the pan/tilt/zoom features in Centracs.
User presets (under PTZ controls)	This is required to use the <b>Go to</b> <b>Preset</b> command in Centracs.
Edit presets (under PTZ controls)	This is required to use the <b>Set</b> <b>Preset</b> command in Centracs.
Save and print snapshots (under General privileges)	This is required to use the <b>Snapshot</b> command in Centracs.

- 4 *OPTIONAL*. Configure the CCTV-related Global Settings in Centracs. For instructions, refer to the procedure below. (For more information about Global Settings, refer to *Viewing and Editing Global and Local Settings* on page 20-61.)
- **5** Configure the Genetec connection parameters. For instructions, refer to the procedure below.

It is only necessary to do these steps one time.

## To define or change the CCTV Global Settings (optional):

- 1 From the main menu, select Management ► Global Settings... The Settings Editor opens.
- 2 To see the settings which have already been activated, click the down arrow for the "Centracs" set to expand the parameter list. The following two settings affect CCTV:
  - **CctvTooltipWidthPx** the pixel width of the CCTV video display window for camera views accessed via the Map Viewer.
  - CctvTooltipHeightPx the pixel height of the CCTV video display window for camera views accessed via the Map Viewer.

If these have not been activated yet, continue to the next step.

- 3 To add a new setting, click Add... The Add Setting window opens.
- 4 Expand the "Centracs" parameter list to find the CCTV settings specified above.
- **5** Double-click a setting, or single-click it and click **OK**. To select multiple settings, hold the **Ctrl** or **Shift** key while you select them.

The Settings Editor is shown again, with the addition of the setting(s) you selected.

- 6 Double-click the current value of each setting, then type the new value over it.
- 7 To save your change(s), press Enter.
- 8 To close the window, click **Close**.

**Note** • You may need to close and re-open Centracs before changes to these settings will take effect.

### To define or change the Genetec connection parameters:

- 1 From the main menu, select **File ▶ Settings...** The Settings window opens.
- 2 click the Default Comm Parameters tab.
- 3 Enter values for these parameters that affect Advanced CCTV:
  - Advanced CCTV Gateway The IP address of the Genetec server.
  - Advanced CCTV Username The user ID you defined on the Genetec server. By default, all users in Centracs will have the permissions assigned to this username in Genetec. However, you can override this for specific users; refer to *Defining Users* on page 20-24 for details.
  - Advanced CCTV Password The password you defined for this user on the Genetec server (if any).
  - Verify Advanced CCTV Password You must enter the password again (if any).
- 4 To save your changes, click **Save**.
- **5** To close the window, click **Close**.

• Setting Up Email/SMS Capability

**Note** • You may need to close and re-open Centracs before changes to these settings will take effect.

After the CCTV feature has been configured, it is possible to add CCTV entities to the Entity Tree (page 3-65) and define presets for each camera (page 8-6). For more information, refer to *Using CCTV Displays* on page 8-1.

# Setting Up Email/SMS Capability

You can configure Centracs to not only show system alerts in the user interface, but also to send them to specific people via email and/or SMS text message. You can also configure Centracs to automatically generate reports and send them to offline recipients. To enable and configure these features, you must do these steps:

Step		Description	This Step Is Required For	For details
1 Define S POP ser	vers	Configure the settings for the outgoing and incoming mail servers	<ul> <li>Sending alerts</li> <li>Alert escalations</li> <li>Sending generated reports</li> <li>MMS ticket alerts</li> <li>MMS ticket escalations</li> </ul>	Refer to page 20-67
2 Define a formats		Specify the content to be included in alerts that are sent from Centracs via email or SMS text message	<ul> <li>Sending alerts</li> <li>Alert escalations</li> <li>MMS ticket alerts</li> <li>MMS ticket escalations</li> </ul>	Refer to page 20-69
3 Define a Global S		Configure the Global Settings that control offline alerts	<ul> <li>Sending alerts</li> <li>Alert escalations</li> <li>MMS ticket alerts</li> <li>MMS ticket escalations</li> </ul>	Refer to page 20-72

Defining SMTP and POP Servers

St	ер	Description	This Step Is Required For	For details
4	Define alert recipients	Tell the system who will receive offline alerts and reports, and specify their email/SMS addresses	<ul> <li>Sending alerts</li> <li>Alert escalations</li> <li>Sending generated reports</li> <li>MMS ticket alerts</li> <li>MMS ticket escalations</li> </ul>	Refer to page 20-73
5	Enable alert recipients in the On-Call Scheduler	Tell the system when it is permitted to send alerts to these people (such as specific times of the day and/or specific days of the week)	<ul> <li>Sending alerts</li> <li>Alert escalations</li> <li>This step is <i>not</i> required for sending generated reports or for MMS ticket alerts and escalations. Reports and MMS alerts will be sent even if the user is not "enabled" in the On-Call Scheduler.</li> </ul>	Refer to page 20-75

After these tasks have been done, you can set up and enable specific alert types (refer to *Configuring Events, Alerts, and Triggers* on page 4-1) and schedule reports to run (refer to *Scheduling a Report to Run* on page 10-12).

**Note** • If you are having trouble with offline alerts or offline alert acknowledgements, refer to *Troubleshooting Offline Alerts* on page 20-82.

# Defining SMTP and POP Servers

Before Centracs can send offline alerts via email and SMS text messages, you must configure the email servers through which messages will be sent and received. You must specify settings for each outgoing SMTP server and incoming POP server. An outgoing SMTP server is necessary in order to send emails and text messages from Centracs; an incoming POP server is necessary in order to receive alert acknowledgements back from offline recipients via email or SMS text message. Defining SMTP and POP Servers

#### To define an SMTP or POP server:

- 1 From the main menu, select File ▶ Settings...
- 2 click the SMTP Servers tab on the left side of the window. The SMTP Server Settings window opens.

[	Settings		_					
	Organization Information Licensing SMTP Servers	SMTP Server Sett	ings dit	Delete				
	ECPI Tile Server	Host	Port 1	Port 2 Credentials Required	Username	SSL Rqd?	Server Type	Email
	Password Strength	smtp.gmail.com	587	1	EconoliteTest@gmail.com	<b>v</b>	Smtp	EconoliteTest@gmail.com
	Confirmation Dialogs	pop.gmail.com	995	<b>V</b>	econolitetest@gmail.com	1	Pop	
	Action Priorities						-	
	Preempts							
	Detector Settings							
	BlueTOAD™							
	Support Services							
	Offline Alert Format							
								Close

3 Click Add. The Edit SMTP Setting window opens.

Edit SMTP Setting	
Host	smtp.gmail.com
Port 1	587
Port 2	
Credentials Required	<b>v</b>
Username	EconoliteTest@gmail.com
Password	•••••
Verify Password	•••••
Require SSL	V
SMTP Server Type	Smtp 🗸
From Address	EconoliteTest@gmail.com
	Test Save Cancel

- 4 Enter the server settings. (Note: The "From Address" field is not used at this time.)
- 5 Click **Test** to try to connect to the server. The test may take a minute or two. When the test is finished, a message tells you whether it succeeded or failed.
- 6 If the connection is successful, click **Save**.
- **7** Set up more server entries, if necessary.

**Note** • If you are having trouble with offline alerts or offline alert acknowledgements, refer to *Troubleshooting Offline Alerts* on page 20-82.

# Defining Offline Alert Formats

This window specifies the content to be included in alerts that are sent from Centracs via email or SMS text message.

### To change the format of offline alerts:

- 1 From the main menu, select File ▶ Settings...
- 2 click the Offline Alert Format tab on the left side of the window.

Settings	
Organization Information	Offline Alert Format
Licensing	The alert ID is included automatically. Insert a data field by selecting it from the 'Add a Field' list or by typing the field name in square brackets.
SMTP Servers	Disable notifications after Acknowledgement
ECPI Tile Server	Disable notifications after Close
Autoscope Settings	Email Subject
Password Strength	A text string specifying what appears in the subject line of an offline alert email.
Confirmation Dialogs	Add a Field
Action Priorities	Centracs [Criticality] Alert: [Name]
Preempts	Connecto [connection]
Detector Settings	
BlueTOAD™	
Support Services	Email Body A text string specifying what appears in the body of an offline alert email.
Offline Alert Format	Add a Field
MMS Settings	
	[Separator][NewLine][NewLine]Alert Criticality: [Criticality][NewLine]Acknowledge State: [AckState] [NewLine]Last AckState Changed By: [AckUser][NewLine][NewLine][Separator][NewLine][NewLine] Entity Name: [Device][NewLine]Event Name: [EventName][NewLine]Event Created At: [RaiseTime] [NewLine]Event Details: [EventDetail][NewLine][NewLine][Separator][NewLine][NewLine]Main Street: [MainStreet][NewLine]Side Street: [SideStreet][NewLine][Google Maps Link: [GoogleMapsLink][NewLine][NewLine][Separator][NewLine][NewLine]Event Type: [EventType] [NewLine]Trigger Name: [Name][NewLine]Trigger Description: [Description][NewLine]Trigger Type: [TriggerType][NewLine]Trigger Type Desc: [TriggerDetail][NewLine][NewLine][NewLine][NewLine][NewLine] [NewLine]Reply with one of the following:[NewLine][NewLine][NewLine][NewLine][NewLine] [NewLine]- CLOSE {Alert ID}{NewLine][NewLine][NewLine][NewLine][NewLine] Note: For Informational alerts, only CLOSE is valid.[NewLine][NewLine][Separator][NewLine]
	SMS Body A text string specifying what appears in the body of an offline alert SMS message. Add a Field Alrt: [Name], St: [AckState], Dev: [Device], Tm: [RaiseTime], Crit: [Criticality], Evt: [EventName]

The recommended values are shown in the sample window above. There are three sections on the window:

- the first sets the format for the Subject line of offline emails
- the second sets the format for the body of offline emails
- the third sets the format for the body of offline text messages

Each value enclosed in square brackets is a variable that can be included in alerts. Each variable is described in the table at the bottom of this page.

- Defining Offline Alert Formats
  - 3 You can delete elements, cut/copy/paste them, or add new ones. To add a new element, from the Add a Field dropdown list, select the variable to add. It is added at the end of the string. Optionally, add a text label for the element you are adding. Anything enclosed in square brackets is considered to be a variable; anything outside of the brackets will be included in the alert exactly as typed.
  - 4 When finished changing the formats, click **Save**.

**Note** • If you turn on the "Disable notifications after Acknowledgement" option, offline recipients will not be notified when an alert gets acknowledged; they will be notified only if the alert gets closed or un-acknowledged. If you turn on the "Disable notifications after Close" option, offline recipients will not be notified when an alert gets closed. These options are meant to be used if your offline recipients are receiving too many offline notifications. If you turn off both options, offline recipients will be notified in all cases (acknowledged, closed, and un-acknowledged).

# Sample Offline Alert Email

Using the settings shown above for Email Body, an email alert might look like this:

\_\_\_\_\_ Alert Criticality: Information Acknowledge State: New Acknowledged By: N/A \_\_\_\_\_ Entity Name: DMS Sign @ I-45S / 610EB Event Name: DMS Message Activation Event Created At: 3/17/2012 6:51:09 PM Event Details: Permanent message 3 activated: ACCIDENT AHEAD \_\_\_\_\_ Main Street: I-45S Side Street: 610EB Google Maps Link: <<u>http://maps.google.com/maps?f=q&geocode=&q=38.8375813021405,+-104.793729400263></u> \_\_\_\_\_ Event Type: Message Activated Trigger Name: DMS msg activated Trigger Description: Informational; all online users; one offline user Trigger Type: Single Instance Trigger Type Desc: Single instance of event, no duration. \_\_\_\_\_ Reply with one of the following: - ACK {Alert ID} - UNACK {Alert ID} - CLOSE {Alert ID} Example: UNACK 712 Note: For Informational alerts, only CLOSE is valid. -----Alert ID: 809

Defining Offline Alert Formats

# Variables

You can use any of these fields in your offline alerts:

Term	Meaning
AckState	The current state of the alert: New, Acknowledged, or Closed.
AckUser	The user who acknowledged or closed the alert, if applicable.
Criticality	The priority of the alert: Information, Warning, or Critical.
Description	The Description defined for the trigger in the Trigger Editor.
Device	The Name defined for the device in the Entity Configuration window.
EventDetail	Any details that were logged about this specific occurrence of the event.
EventName	The user-defined event name (i.e., the custom event name on the Events tab in Centracs, if any).
EventType	The system-defined event name (i.e., the default event name on the Events tab in Centracs).
GoogleMapsLink	A hyperlink to the device location on Google Maps (if coordinates have been defined in Centracs for the device).
MainStreet	The Primary Street defined for the device in the Entity Configuration window.
Name	The Name defined for the trigger in the Trigger Editor.
NewLine	Inserts a line break.
RaiseTime	The date/time at which the alert originally occurred (regardless of when the alert was acknowledged or closed).
Separator	Inserts a dashed line.
SideStreet	The Secondary Street defined for the device in the Entity Configuration window.
TriggerDetail	A description of the Trigger Type:
	<ul> <li>Single instance of event, no duration</li> </ul>
	Event on for {y} minutes
	{x} occurrences within {y} minutes
TriggerType	The Type defined for the trigger in the Trigger Editor:
	<ul> <li>Single instance</li> </ul>
	<ul> <li>On for duration</li> </ul>
	<ul> <li>Multiple occurrences within duration</li> </ul>

Defining Alert-related Global Settings

# Defining Alert-related Global Settings

Two of the Centracs Global Settings control how offline alerts are processed.

## To set the alert-related Global Settings:

- 1 From the main menu, select Management ► Global Settings... The Settings Editor opens.
- 2 To see the settings which have already been activated, click the down arrow for the "Core" set to expand the parameter list. The settings below control offline alerts:

Parameter	Value to enter
Core Offline Alert Fetching Enabled	Controls whether responses to offline SMS/email alerts will be fetched and applied to the system.
Core Offline Alert Fetching Interval	Controls how frequently Centracs logs in to the mail server to retrieve responses to offline SMS/email alerts.

If these have not been activated yet, continue to the next step.

- 3 To add a new setting, click Add... The Add Setting window opens.
- 4 Expand the "Core" parameter list to find the alert settings specified above.
- **5** Double-click a setting, or single-click it and click **OK**. To select multiple settings, hold the **Ctrl** or **Shift** key while you select them. The Settings Editor is shown again, with the addition of the setting(s) you selected.
- 6 Double-click the current value of each setting, then type the new value over it:

Parameter	Value to enter
Core Offline Alert Fetching Enabled	Set to 1 to permit offline alert recipients to acknowledge, close, and unacknowledge alerts; otherwise, set to 0.
Core Offline Alert Fetching Interval	Set how frequently (in seconds) Centracs will log in to the mail server to retrieve responses to offline SMS/email alerts (30 to 60 seconds is recommended).

- 7 To save your change(s), press Enter.
- 8 To close the window, click **Close**.

For more details about Global Settings, refer to *Viewing and Editing Global and Local Settings* on page 20-61.

**Note** • If you are having trouble with offline alerts or offline alert acknowledgements, refer to *Troubleshooting Offline Alerts* on page 20-82.

# **Defining Recipients**

For each user who needs to receive offline alerts via email or text message, you must set them up as a Recipient. You can also set up Recipients who are not defined as users in Centracs — these Recipients cannot log in to Centracs, but they can receive and acknowledge offline alerts.

When you add a new user to Centracs, the name of the user is automatically added to the Recipient table. But before the user can receive offline alerts, you must update this new Recipient record with their email address and/or SMS address.

## To add or edit a Recipient record:

1 From the main menu, select **Management ▶ Recipients**. The Recipients window opens.

Recipient			
Centracs Administrator Econolite User Econolite User - Doc George Michael Bluth Lonnie J Kingfisher Peggy Hill Phil Dunphy Trudy Wiegel	Recipient Deta First Name Last Name Email Phone 1 Phone 2 SMS Email Jurisdictions	ails Centracs Administrator admin@econolite.com 8085551313@txt.att.net All General	
Add Delete			Close

2 To edit an existing Recipient, click the name in the left pane of the window; to add a new Recipient, click **Add** to add a blank record.

**Note** • If you change the Name fields for a Recipient that is also set up as a Centracs user, those fields are automatically updated in the User Configuration record.

Defining Recipients

- **3** Fill in the details on the right side of the window:
  - The Email field is the address at which the Recipient will receive email alerts.
  - The SMS Email field is the address at which the Recipient will receive text message alerts. Examples: mobilenumber@vzwpix.com (Verizon), mobilenumber@vtext.com (Verizon), mobilenumber@mms.att.net (AT&T), mobilenumber@txt.att.net (AT&T).
  - The Jurisdictions field specifies which jurisdictions this Recipient will receive alerts for. If you hold down the **Ctrl** or **Shift** key you can select more than one jurisdiction, or you can select "All" for all jurisdictions.
- 4 Click Save.

**Note** • If you delete a Recipient that is also set up as a Centracs user, the User Configuration record is also deleted, and this user can no longer log in to Centracs.

**Note** • If you are having trouble with offline alerts or offline alert acknowledgements, refer to *Troubleshooting Offline Alerts* on page 20-82.

# **Enabling Recipients**

After Recipients have been set up (page 20-73), you must specify the days and hours during which Centracs can send offline alerts to them. For example, you can set up one group of Recipients to receive alerts that occur during the day, and a different group to receive alerts that occur at night — or one group for weekends, one group for weekdays. You can set up as many groups as necessary.

## To set up Recipient date/time schedules:

1 From the main menu, select **Control ▶ On-Call Scheduler...** The On-Call Scheduler calendar window opens.

2 Click Add The Add/Edit Schedule window oper
-----------------------------------------------

Add/	Edit Schedule	
		Is Exception
Group	/ User	
Schedu	ule time	
Start:	6/24/2013 -	1:25 PM . All Day
End	6/25/2013 💌	1:25 PM + Recurrence
_	Del	ete OK Cancel

Enabling Recipients

- Select User / Group Name Туре Navin Johnson User 8 8 Roger Cobb User Dr. Michael Hfuhruhurr User R & Larry Hubbard User CD Bales User R Rigby Reardon User Freddy Benson User R Gil Buckman User First-Line Tech Group User Group Autoscope Techs User Group Backup Tech Group User Group Administrator Alerts User Group 8 **CCTV** Techs User Group A Vehicle Tech Group User Group R Administrator User Group User Group A Technician OK Cancel
- 3 Click 🖬 to the right of the Group/User field. The Select User/Group window opens.

- 4 Select an individual user or a User Group, then click **OK**. If you select a User Group, then all users who are members of that group will be scheduled for alerts.
- 5 On the Add/Edit Schedule window, specify the Start and End dates for this schedule.
- 6 Specify the Start and End times for the period during which these users can receive alerts each day, or turn on the All Day option to keep this schedule enabled around the clock.

- Enabling Recipients •
- 7 If you want this schedule to repeat, click **Recurrence...** The Recurrence window opens.

Recurrence	
Schedule time	
All Day Start: 6:30 AM 🗘 End: 6:30 PM 🗘	
Duration days/hours: 0 2 12:00 2	
Recurrence pattern	
<ul> <li>Daily</li> <li>Weekly</li> <li>Every 1 day(s)</li> <li>Monthly</li> <li>Yearly</li> <li>Every weekday</li> </ul>	
Range of recurrence	-
Start: 6/24/2013 -	
◯ End after: 0 🗘 occurrences	
◯ End after: 6/25/2013 ▼	
ОК	ancel

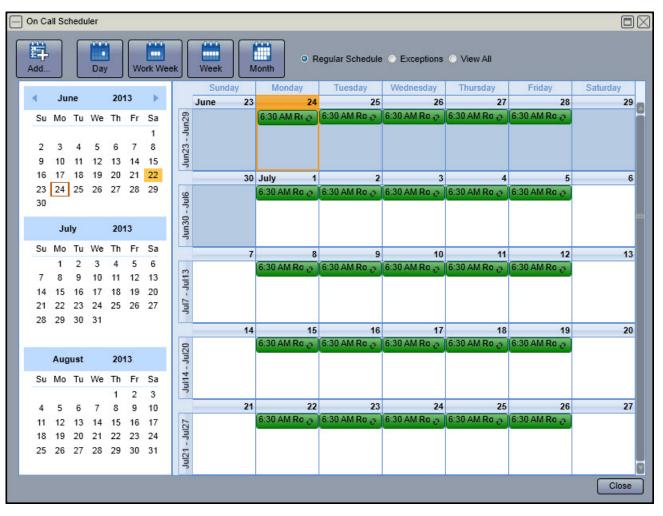
8 Specify how frequently the alert period will occur (such as every weekday), and click **OK**.

The Add/Edit Schedule window shows a summary of the recurrence pattern you specified:

Add/Edit Schedule	$\Box \boxtimes$
	Is Exception
Group / User 🔒 Roger Cobb	⊠
Recurrence	
Occurs every week day effectiv to 6:30 PM.	e 6/24/2013 from 6:30 AM
	Remove Edit
Delete	OK Cancel

9 Click OK.

Enabling Recipients



Your new alert schedule is now shown in the On-Call Scheduler calendar:

**10** Verify that the new schedule was added to the correct day(s) on the calendar, then click **Close**.

**Note** • If you are having trouble with offline alerts or offline alert acknowledgements, refer to *Troubleshooting Offline Alerts* on page 20-82.

# **Creating Exceptions**

To create an exception to the on-call schedule (for example, for holidays or vacation days), follow the above steps again to create a new schedule, but turn on the "Is Exception" option. For example, if you want a user to be enabled Monday thru Friday from 6:30m until 6:30pm EXCEPT on the first day of every month from 10am until 2pm, create these two on-call schedules:

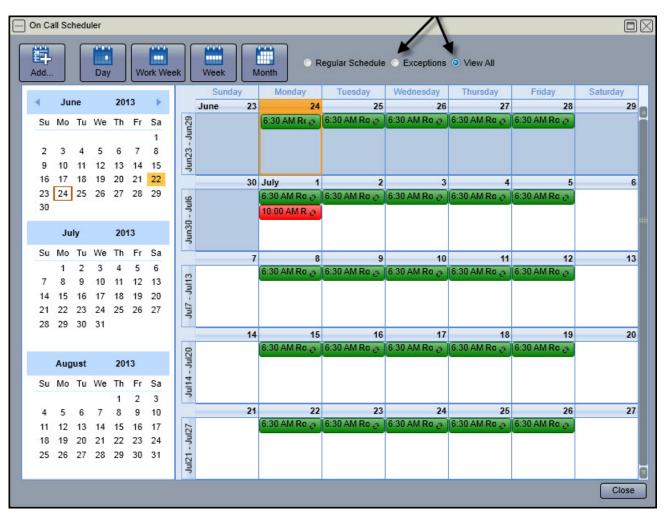
- Recurrence	
Schedule time	
All Day Start: 6:30 AM + End: 6:30 PM + Duration days/hours: 0 + 12:00 +	
Recurrence pattern	
Daily     Weekly     Every     1     day(s)     Monthly     Every weekday	
O Yearly	Add/Edit Schedule
Range of recurrence	Is Exception
Start: 6/24/2013 • O No end date	Group / User 🔒 Roger Cobb 🛛 🛄
◯ End after: 0 🛟 occurrences	Recurrence
◯ End after: 6/25/2013 ▼	Occurs every week day effective 6/24/2013 from 6:30 AM to 6:30 PM.
	Remove Edit
	Delete OK Cancel

### **Centracs Administration**

Enabling Recipients

Recurrence	
Schedule time	
All Day Start: 10:00 AM + End: 2:00 PM + Duration days/hours: 0 + 04:00 +	
Recurrence pattern	
<ul> <li>○ Daily</li> <li>○ Day 1 ↓ of every 1 ↓ month(s)</li> </ul>	
Monthly     Yearly     O The First ▼ Sunday ▼ of every 1:	month(s)
Range of recurrence	Add/Edit Schedule
Start: 6/24/2013 - O No end date	✓ Is Exception
End after: 0      occurrences	Group / User 🔒 Roger Cobb 🖂 🛄
	Recurrence
○ End after: 6/25/2013 ▼	Occurs day 1 of every 1 month effective 6/24/2013 from 10:00 AM to 2:00 PM.
ОК	Remove
	Delete OK Cancel

Enabling Recipients •



Exceptions are shown in red on the calendar. They are only shown if you select the Exceptions option or the View All option, as shown below:

Troubleshooting Offline Alerts

# Troubleshooting Offline Alerts

If you are having trouble with offline alerts or offline alert acknowledgements, first make sure you have followed the instructions in *Setting Up Email/SMS Capability* on page 20-66. Then try the troubleshooting steps below:

- 1 Did the alert fire? Check the Alert List (page 4-22) to see if the alert is shown. If the alert did not fire, go to the Events tab (page 4-2) and make sure the event you are triggering is Enabled.
- 2 On the SMTP Servers tab (page 20-1), click the Test button to check for configuration errors. The test may take a minute or two. When the test is finished, a message tells you whether it succeeded or failed. If it failed, try entering the password on the SMTP Servers tab again. An incorrectly typed password is often the cause of the problem. Even if you are SURE you typed it correctly, please try it again. Then click Test to test the connection again.
- 3 Does the recipient have email/SMS addresses defined on the Recipients window (page 20-73)?
- 4 Is the recipient included in the alert trigger on the Triggers window (page 4-25)?
- 5 Is the recipient in the On-Call Scheduler (page 19-27)? (This step is not required for sending generated reports or for MMS ticket alerts and escalations. Reports and MMS alerts will be sent even if the user is not "enabled" in the On-Call Scheduler.)
- 6 Log in to the email account defined on the SMTP Servers tab (page 20-1).
  - a When operating properly, an alert from Centracs will arrive in the Inbox of the email account, will appear momentarily, then will be forwarded to the Recipient's email address. So look for the alert in the Sent folder (you likely won't catch it in the Inbox). If it is not in the Sent folder, there is likely a configuration problem in Centracs (the SMTP settings, most likely).
  - **b** In the case of alert acknowledgements from the offline recipient, they appear in the Inbox of the email account until Centracs fetches them; then they are deleted. So look for these either in the Inbox or the Trash folder.
- 7 For problems with offline alert acknowledgements, when the recipient sends an alert "ack" (or "close" or "unack") command back to Centracs, the message to Centracs MUST include the Alert ID somewhere in the email or text message. Otherwise, Centracs does not know which alert to apply it to.
- 8 Check the Centracs diagnostic log at C:\ProgramData\Econolite\CentracsDiag.log for alert-related messages or errors. For example, "AlertFetcher: About to fetch new email alert responses" means Centracs is checking for recipient responses ("close" or "ack") to the original alerts. A "Failed to retrieve messages" error probably means your POP server settings in Centracs are incorrect.
- **9** Email Econolite Technical Support for additional assistance. Include a copy of the CentracsDiag.log mentioned above.

Editing Map Layer Settings

# **Editing Map Layer Settings**

To configure the general map settings for your system, use the Map Layers window. These settings are usually configured for you by Econolite during installation and do not require modification.

There are multiple map layers in Centracs maps, which are user-configurable. You can set up your maps so that as a user zooms the map from one layer to another, the appearance of the entity/element icons change — specifically, their size, shape, and orientation on the map. For example, you may choose to show small icons when the user is zoomed out (to prevent a cluttered map display with icons that overlap), and larger, more detailed icons when the user is zoomed in. You can also configure the map layers to show some icons and hide others. To configure the appearance of objects on the map layers, use the Map Editor (page 5-18); to configure the map layers themselves, use the Map Layers window (below). Specifically, the Map Layers window controls:

- which map tiles to use
- the zoom levels at which one layer stops and the next layer starts
- the level of opacity/transparency for each layer
- the vertical order of each layer
- your connections to web map services
- the types of icons (e.g., signal icons, DMS icons, CCTV icons, etc.) to show on the map portion of the Signal Status display, Section Status display, and Location Status display
- which layers activate priority polling in the Map Viewer

## To edit the general map layer settings:

1 From the main menu, select **Configuration ▶ Map Layers...** The Map Layers window opens.

Layers Bing	Maps Web Map	Services Sta	tus Screen Fi	Iters						
+ Add Ed	lit 🗙 Delete							Filt	ters: All	
Name 🔺	Tile Requestor	Tile Renderer	Min Zoom	Max Zoom	Default Zoom	Opacity	Z-Order	Enabled	Use Priority Polling	
Bing Intersection	Bing Hybrid	None	19.0	20.0		1.00	20			
Bing Roads	Bing Roads	None	1.0	19.0		1.00	10	2		
CCTV Intersection	Entity Visuals (icons)	Entity Visuals	19.0	20.0		1.00	31	2		
CCTV Pattern	Entity Visuals (icons)	Entity Visuals	14.5	19.0		1.00	41			
CCTV Point	Entity Visuals (icons)	Entity Visuals	1.0	13.7	12.5	1.00	61	<b>N</b>		
CCTV Status	Entity Visuals (icons)	Entity Visuals	13.7	14.5		1.00	51	V V		
DCMS Intersection	Entity Visuals (icons)	Entity Visuals	19.0	20.0		1.00	35			
DCMS Pattern	Entity Visuals (icons)	Entity Visuals	14.5	19.0		1.00	45	2		
DCMS Point	Entity Visuals (icons)	Entity Visuals	1.0	13.7	12.5	1.00	65	2		
DCMS Status	Entity Visuals (icons)	Entity Visuals	13.7	14.5		1.00	55	2		
DMS Intersection	Entity Visuals (icons)	Entity Visuals	19.0	20.0		1.00	34			
DMS Pattern	Entity Visuals (icons)	Entity Visuals	14.5	19.0		1.00	44			
DMS Point	Entity Visuals (icons)	Entity Visuals	1.0	13.7	12.5	1.00	64	<b>N</b>		
DMS Status	Entity Visuals (icons)	Entity Visuals	13.7	13.7	14.5	1.00	54			
Intersection	Entity Visuals (icons)	Entity Visuals	19.0	20.0		1.00	30			
Links	Link Visuals	None	1.0	20.0		1.00	70	•		

• Editing Map Layer Settings

You can click the tabs near the top of the window to see the map-related settings that are in effect for your system.

By default, this window shows only the User Layers, i.e., the map layers you can reconfigure or delete. To see the other layers, select All or System Layers from the dropdown list in the upper right corner. System Layers cannot be deleted.

- 2 To activate or deactivate a layer, use the checkbox in the Enabled column.
- **3** To enable priority polling for a layer, turn on the checkbox in the Use Priority Poll column. If you enable this option for a map layer, priority polling will be activated any time that map layer is viewed by a user in the Map Viewer. For example, if you turn on the Use Priority Poll option for the Intersection layer, then when a user opens the Map Viewer window and zooms in to see a signal's phase indications, priority polling automatically goes into effect for that signal, and remains in effect until the user closes the Map Viewer window (or zooms to a different map layer). For more information, refer to *Priority Poll Rate* on page 20-42.

**Note** • Customers using cellular modems may want to limit their use of the Use Priority Poll option in order to reduce data charges.

4 To edit a map layer on the Layers tab, double-click it, or select it and click **Edit**. The Layer Settings window opens.

Layer Settings	
Layer Name	Bing Roads
Enabled	<b>V</b>
Tile Requestor	Bing Roads 🔹
The requestor will feed tiles to t require licensing agreements w	this map layer. Bing and Google maps ith the respective companies.
Tile Renderer	None 🔻
	ow the contents of the layer will be drawn only one renderer available, which is for
Min Zoom	1.0
The farthest out that this layer i number, the farther from the gro	s visible, from 1.0 to 20.0. The lower the ound.
Max Zoom	19.0
The farthest in that this layer is number, the closer to the groun	visible, from 1.0 to 20.0. The higher the d.
Default Zoom	
Usually left blank, default zoom zoom when first showing a laye	is used in the map editor to set the er tab.
Opacity	1.00
Transparency level of the layer, completely transparent, 1.00 is	between 0.00 and 1.00 (0.00 is completely opaque).
Z-Order	10
	r, Z-order specifies which layer will be the higher the layer will be in the vertical
Allow Status Size Overlay	
Usually left unchecked, this tell used as the view in the Status of	s the map editor that this layer can be display.
	OK Cancel

Editing Map Layer Settings •

- **5** Complete the fields as appropriate. A field description is shown below each field name. Default Zoom and Allow Status Size Overlay are optional; all other fields are required.
- 6 To save your changes, click **OK**.
- 7 If you have a license for Bing<sup>™</sup> Maps, use the Bing Maps tab to enter your Bing Maps Key, then click **Save**.

The changes are applied to the maps immediately.

## To use WMS:

**1** From the Map Layers window, click the Web Map Services tab.

Map Layers	
Layers Bing Maps Web Map Services Status Screen Filters	
Specify connections to web map services. These are used when adding WMS layers.	
+ Add X Delete	
Service Name Version URL	

## 2 Click Add.

3 Enter a name for the service, and the version and URL.

Map Layers					
Layers Bing Maps Web Map Services Status Screen Filters					
Specify connection	Specify connections to web map services. These are used when adding WMS layers.				
+ Add 🗙 🛛	)elete				
Service Name	Version	URL			
DRCOG	v 1.1.1	http://gis.drcog.org/geoserver/wms?			

- 4 Click Save.
- **5** click the Layers tab.
- 6 Click Add.

• Editing Map Layer Settings

Layer Settings	
Layer Name	DRCOG WMS
Enabled	V
Tile Requestor	Web Map Service (WMS) •
The requestor will feed tiles to require licensing agreements v	this map layer. Bing and Google maps with the respective companies.
Tile Renderer	None
	ow the contents of the layer will be drawn only one renderer available, which is for
WMS Server	DRCOG -
The web map service to get tile	es from.
Min Zoom	1.0
The farthest out that this layer number, the farther from the gr	is visible, from 1.0 to 20.0. The lower the round.
Max Zoom	20.0
The farthest in that this layer is number, the closer to the groun	s visible, from 1.0 to 20.0. The higher the nd.
Default Zoom	
Usually left blank, default zoon when first showing a layer tab.	n is used in the map editor to set the zoom
Opacity	0.30
Transparency level of the layer completely transparent, 1.00 is	r, between 0.00 and 1.00 (0.00 is s completely opaque).
Z-Order	55
	er, Z-order specifies which layer will be on e higher the layer will be in the vertical
Allow Status Size Overlay	
Usually left unchecked, this tel used as the view in the Status	Is the map editor that this layer can be display.
WMS Image Format	image/png 🔻
Type of tiles to get from web m	hap service. Default is PNG image format.
WMS Parameters	
Override Coordinates	<b>V</b>
Usually true, this indicates whe requests vs. the projection's co	ether to use latitude and longitude for tile pordinates
WMS layers to	request from the server
Add X Delete	Add From Server
Layer Name	Layer Title (optional)
DRCOG:network_2035	Denver metro roadway network
	OK Cancel

- 7 On the Layer Settings window, enter a name for this layer.
- 8 To make this layer active immediately after configuration, check the Enabled checkbox. To configure the layer for use at a later time, leave the box unchecked.
- 9 For Tile Requestor, select Web Map Service (WMS).
- **10** For WMS Server, select the WMS you added earlier.
- **11** Set the zoom settings, opacity, etc. for this layer.
- 12 For WMS Image Format, select the image type (JPEG, TIFF, BMP, PNG, or GIF).

- 13 To use latitude/longitude (EPSG 4326) for tile requests, leave the Override Coordinates checkbox checked. To use the native coordinate system (such as EPSG 3395 - Mercator), uncheck the box.
- 14 At the bottom of the window, to configure a layer to request from the WMS, click Add.
- **15** In the Layer Name field, enter the name of the layer on the server.
- **16** Optionally, in the Layer Title field, enter a description for the layer.
- **17** Click **OK**.

### To edit the map settings for the status displays:

1 From the Map Layers window, click the Status Screen Filters tab:

Map Layers							
Layers	Bing Maps V	Web Map Services	Status Screen	Filters			
Icons	Signal Status	Section Status	Location Status				
Background	~	<b>N</b>	~				
Signal	2	<b>L</b>					
Links		<b>L</b>					
CCTV		<					
URL		<					
DMS		Z					
DCMS		۲					
Centracs MMS		<	>				

The Background Layers section of the window controls whether the map background (which shows land, water, roads, etc.) appears on the status displays. In the example above, the Signal Status display will show only the background map and the signal status icons; the Location Status display will show only the background map and MMS-related icons; the Section Status display will show the background map and all icons, including CCTV, DMS, Links, etc.

The Icons column shows the types of icons you can show or hide on the Signal Status display (page 6-1), Section Status display (page 6-10), and/or Location Status display (page 19-48).

2 Turn on the checkboxes for the icons you want to show on each status display, and turn off the checkboxes for the icons you want to hide. Your changes take effect immediately.

**Note** • To control which types of icons appear on the main Map Viewer window, rightclick in the Map Viewer window, select Show Toolbar, and set the checkboxes appropriately. • Using the Street Names Editor

# **Using the Street Names Editor**

Use the Street Names Editor to keep a list of streets in your jurisdiction(s). You can then select streets from this list when you configure a new signal, detector, etc.

To access the Street Names Editor, select **Configuration > Street Names...** from the main menu, or click to the right of the Primary Street or Secondary Street field on the Entity Configuration window.

Street Names Editor	$\Box \boxtimes$
Add or filter street	+ <b>/</b> ×
Casa de Campo Rd Chapel Ln E Pikes Peak Ave Garden of the Gods Rd Lambert Rd McLaughlin Rd Meridian Ranch Rd Meridian Rd	
N Academy Blvd N Union Rockrimmon Blvd S Academy Blvd S Powers Blvd W Pikes Peak Ave Woodmen Bd	
	OK Cancel

## To find a street in the list:

In the "Add or filter street..." box, enter the first few characters of the street name. As you type, the system filters out any street names that do not start with the characters you entered.

### To add a street name:

▶ In the "Add or filter street..." box, enter the name of the street, then click .....

### To delete a street name:

▶ Highlight the street name to delete, then click .

### To change a street name:

- 1 Highlight the street name to change, then click **Z**.
- 2 When prompted, enter the new name and click **OK**.
- 3 If any entities (for example, signals or detectors) use the street name you changed, you must manually change the Primary Street/Secondary Street fields in the Entity Configuration window for those entities.

# **Archiving and Restoring Data**

If you have the necessary permissions, you can archive and restore data for the logs listed in *Purging Report Data from the System* on page 20-94.

# Archiving Data

# To archive log data:

- 1 Add a manual command or a schedule entry, and select either of these two actions from the "Common" list in the Action dropdown:
  - "Database Maintenance" action This action archives all data older than a specified number of days. This function is useful if you want to schedule recurring archives. Optionally, this function can also *delete* the data after the archive has completed successfully. After you select this action from the Action dropdown, enter a value for the "Archive logs older than the following number of days" option, from 1 to 365. For example, if today is 12/31/2016, and if you enter 30, all data *older* than 12/1/2016 will be archived.

If you want Centracs to delete the data after it is archived:

- Turn on the "Purge after Archive" option. (Note that if the "Archive logs older than..." option is turned on, the data will only be purged if the archive process completes successfully.) If you do not want the data to be deleted at this time, turn this option off. (If needed, you can purge the data manually at a later time; for details, refer to page 20-94.)
- Specify the number of days to purge. If the "Archive logs older than..." option is turned on, the Purge value must be equal to or greater than the "Archive logs older than..." value. This prevents you from accidentally purging more data than you archived.
- Select the logs to purge. For a description of each log, refer to *Purging Report Data from the System* on page 20-94.

**Note** • If needed, you can run the Database Maintenance action with the Purge option turned on and the Archive option turned off. This deletes data without archiving it first. This method is generally not recommended, and should be used with caution.

 "Archive Logs Data" action – This action archives all data before a specified date. This function is handy if you want to quickly start an archive on-demand. This archive function only makes an archive file — it does *not* delete any information from the database. (For instructions on how to delete the data after you archive it, refer to *Purging Report Data from the System* on page 20-94.) After you select this action from the Action dropdown, select the end date for the archival. All data *older than* this date will be archived.

#### Archiving Data

For details about the other fields on the New Schedule Entry/Manual Command windows, refer to *Using the Scheduler* on page 7-11 and *Issuing Manual Commands* on page 7-8.

2 Click **OK** to save the manual command or schedule entry. When the archive process runs, the archived data is saved in a file named:

Archived Logs YYYY MM DD.bak

where YYYY\_MM\_DD is the end date of the archived data set. For example, a filename of *Archived\_Logs\_2016\_07\_01.bak* contains data *older* than July 1st 2016.

**3** Run the System Activity report (page 10-50) to make sure the archive ran to completion. From the Activity dropdown list on the report, select the three "Archive Logs" items. If the archive was successful, you will see entries in the report similar to these (with "Success" in the Details column):

Date/Time	User Login	Entity Type	Entity	Activity	Details
7/12/2014 1:16:48 PM	km	Centracs		Archive Logs Data	Archive log data to a file.
7/12/2014 1:16:48 PM	km	Centracs		Archive Logs Started	
7/12/2014 1:17:36 PM	km	Centracs		Archive Logs Completed	Success

If the archive was unsuccessful, the entries will be similar to:

Date/Time	User Login	Entity Type	Entity	Activity	Details
7/11/2014 5:02:09 PM	km	Centracs		Archive Logs Data	Archive log data to a file.
7/11/2014 5:02:09 PM	km	Centracs		Archive Logs Started	
7/11/2014 5:02:09 PM	km	Centracs		Archive Logs Completed	Failure

If the Details column shows "Failure", refer to *Troubleshooting the Archive and Restore Functions* on page 20-92. If it still does not complete successfully, contact Econolite Technical Support.

**IMPORTANT** • If you ran the "Archive Logs Data" action and you want to purge data from the logs now, check the newly created archive file to make sure it is no longer increasing in size (i.e., no longer being written to) before you do the purge. For information on how to find the new archive file on the server machine, refer to *Location of Archive Files* on page 20-92.

## Restoring Data

The "Restore Logs Data" action imports data from a backup file into the logs in the Centracs database.

#### To restore log data:

1 Add a manual command and select the "Restore Logs Data" action from the "Common" list in the Action dropdown.

**Note** • This action is available only if one or more properly named archive files exist in the archive directory.

2 Select the archived file from which to restore data. The convention for the file name is:

Archived\_Logs\_YYYY\_MM\_DD.bak

where YYYY\_MM\_DD is the end date of the archived data set. For example, a filename of Archived\_Logs\_2016\_07\_01.bak contains data older than July 1st 2016.

For details about the other fields on the Manual Command window, refer to *Issuing Manual Commands* on page 7-8.

```
Note • You cannot run the Restore Logs Data action via the scheduler.
```

- 3 Click **OK** to save the manual command.
- 4 Run the System Activity report (page 10-50) to make sure the restore ran to completion. From the Activity dropdown list on the report, select the three "Restore Logs" items. If the restore was successful, you will see entries in the report similar to these (with "Success" in the Details column):

Date/Time	User Login	Entity Type	Entity	Activity	Details
7/12/2014 2:51:10 PM	km	Centracs		Restore Logs Data	Restore data from a backup.
7/12/2014 2:51:10 PM	km	Centracs		Restore Logs Started	
7/12/2014 2:51:42 PM	km	Centracs		Restore Logs Completed	Success

If the restore was unsuccessful, the entries will be similar to:

Date/Time	User Login	Entity Type	Entity	Activity	Details
7/12/2014 3:55:59 PM	km	Centracs		Restore Logs Data	Restore data from a backup.
7/12/2014 3:55:59 PM	km	Centracs		Restore Logs Started	
7/12/2014 3:55:59 PM	km	Centracs		Restore Logs Completed	Failure

If the Details column shows "Failure", refer to *Troubleshooting the Archive and Restore Functions* on page 20-92. If it still does not complete successfully, contact Econolite Technical Support.

Troubleshooting the Archive and Restore Functions

# Troubleshooting the Archive and Restore Functions

If an attempted archive or restore fails, please follow the steps below before you contact Econolite Technical Support.

## **Command Timeout Values**

If the process failed, it may have timed out. Increase the timeout parameters and run it again. The parameters are located in these two files in your Centracs Core installation folder (e.g., C:\Program Files\Econolite\Centracs\Core):

- DBMConsole.exe.config
- Core.exe.config

Both files contain this entry, where the default for each timeout is 30 minutes:

```
<DbCommandTimeouts BackupTimeout="30" RestoreTimeout="30"
BaseCommandTimeout="30"/>
```

You can increase the values, or if necessary, change the values to 0, which means the process never times out.

## Machine Timeout Values

### In these two files:

```
C:\Windows\Microsoft.NET\Framework\v4.0.30319\Config\machine.config
C:\Windows\Microsoft.NET\Framework64\v4.0.30319\Config\machine.config
```

add this entry to the bottom (if it is not there):

```
<system.transactions>
<machineSettings maxTimeout="00:00:00"/>
</system.transactions>
```

## Location of Archive Files

New archive files are saved to the directory specified in the Core.exe.config file. You can find this config file in your Centracs Core installation folder (e.g., C:\Program Files (x86) \Econolite\Centracs\Core). The entry below appears in the file two times:

By default, the archive files are saved to the D drive. If your database server machine does not have a D drive, the archive process will fail. Change the entry to a valid drive, such as:

```
<setting name="ArchiveRestoreDirectory" serializeAs="String">
<value>C:\Logs Archived</value>
```

Be sure to change *both* instances of this entry in the file.

For Advanced Users

If the specified directory (in this case, "Logs Archived") does not exist on the drive yet, please add the directory manually, then run the archive again. If your Centracs database and your Centracs Core server are on different machines, be sure to add the directory on the database server, not the Core server.

**Note** • If you changed any of the configuration files mentioned above, restart the Centracs services before you run the archive process again.

## **Diagnostic Log**

Check the Centracs diagnostic log at C:\ProgramData\Econolite\CentracsDiag.log for messages or errors related to the archive or restore process. If you need additional assistance, please email Econolite Technical Support and include a copy of the CentracsDiag.log.

# For Advanced Users

## About the Archive Process

During the archive process, an empty archive database is created with a DB Recovery mode of SIMPLE. Data is then merged (using the MERGE command) from the Logs database to the newly created archive database, one table at a time. The process uses the "Archive Transaction Size" Global Setting in Centracs to determine the block size for each MERGE command; the default for this Global Setting is 4 hours.

After the merge process is complete, a backup of the new archive database is performed and placed in the location specified by the ArchiveRestoreDirectory setting (refer to *Location of Archive Files* on page 20-92).

After the backup file is created successfully, the archive database is deleted.

### About the Purge Process

The purge process uses the DELETE command, in blocks determined by the "Archive Transaction Size" Global Setting; the default for this Global Setting is 4 hours.

### About the Restore Process

After the user selects a backup file to restore, the database manager creates a new archive database from the backup file (using the name of the backup file as the name of the database). Then an update script runs against this archive database to bring it up-to-date with the database version of the current Centracs database.

Data is then merged from the archive database into the Centracs database, one table at a time. The process uses the "Archive Transaction Size" Global Setting to determine the block size for each MERGE command; the default for this Global Setting is 4 hours.

After the merge process is complete, the archive database is deleted.

Purging Report Data from the System

# **Purging Report Data from the System**

It is recommended that you periodically clean out the Centracs logs to keep the system running efficiently. The Purge Data option permits system administrators to do this.

**Note** • In addition to the procedure below, you can also purge data automatically after an archive by using the "Database Maintenance" action. This action can be scheduled to run at recurring intervals with no user intervention. For details, refer to *Archiving and Restoring Data* on page 20-89.

**IMPORTANT** • The Purge Data option described below *deletes* data — it does *not* archive it. Be sure to back up the database and archive the log data before you delete it. Otherwise, the data will be unrecoverable.

### To delete data from the Centracs logs:

- 1 Optionally, make a backup of the Centracs database (highly recommended).
- 2 Optionally, archive the log data (highly recommended). Refer to *Archiving and Restoring Data* on page 20-89.
- 3 From the main menu, go to Management ▶ Purge Data... The Purge Data window opens. (The options you see may differ, depending on which Centracs modules are licensed in your system.)

Purge Data	
Purge data older than 4/14/2014	15
Select All Deselect All	
Alerts Log	Signal MMU Events Log
Autoscope Detector Logs	Split Monitor Logs
Centracs Adaptive Events Log	System Activity Logs
Comm Statistics Log	System Events Log
Controller Data	Ticket History Log
Detector Logs	Traffic Responsive Log
Link Log	Travel Time Link Log
Mobile Error Log	
MOE Logs	
Moved Asset Log	
Oasis Functions Log	
Oasis Plans Log	
Signal Changes Log	
Signal Detector Events Log	
Signal Events Log	
	Purge Close

4 Select the end date. All data before this date will be deleted.

5 Enable the checkboxes for the logs to purge, or enable the "Select All" checkbox. The log types are identified below, in alphabetical order:

Log	Description
Alerts Log	Contains the information that is shown in the Alerts Log report (page 10-18).
Autoscope Detector Logs	Contains the information that is shown in the DCMS reports (if licensed). For information about the DCMS module, refer to Chapter 17, <i>Using DCMS for Data Collection</i> .
Centracs Adaptive Events Log	Contains data from the execution of Centracs Adaptive traffic algorithms (if licensed). This information is shown on the Logs tab of the Centracs Adaptive Monitoring window.
Comm Statistics Log	Contains the information that is shown in the Comm Statistics report (page 10-20).
Controller Data	Contains details from the Controller Editor about prior controller configurations that were saved to the database.
Detector Logs	Contains the information that is shown in the Raw Detector Data report (page 10-31).
Links Logs	Contains the information that is shown in the Links report (page 10-28).
Mobile Error Log	Contains information about errors that have occurred in the MMS Mobile application (if licensed).
MOE Logs	Contains the information that is shown in the MOE reports (page 11-1) (if licensed).
Moved Asset Log	Contains the information that is shown in the Moved Asset report (page 19-96) (if the MMS module is licensed).
Oasis Functions Log	Contains the information that is shown in the Oasis Functions Log in Centracs Local Edition.
Oasis Plans Log	Contains the information that is shown in the Oasis Plans Log in Centracs Local Edition.
Signal Changes Log	Contains the information that is shown in the Signal Changes report (page 10-33).

Purging Report Data from the System

Log	Description
Signal Detector Events Log	Contains the information that is shown in the Signal Detector Events report (page 10-34).
Signal Events Log	Contains the information that is shown in the Signal Events report (page 10-36).
Signal MMU Events Log	Contains the information that is shown in the Signal MMU Events report (page 10-38).
Split Monitor Logs	Contains the information that is shown in the Split Monitor report (page 10-46).
System Activity Logs	Contains the information that is shown in the User Login report (page 10-60) and System Activity report (page 10-50).
System Events Log	Contains the information that is shown in the System Events report (page 10-51).
Ticket History Log	Contains the history information about call tickets and work orders (page 19-51) that is shown on the Location History window (page 19-45) (if the MMS module is licensed).
Traffic Responsive Log	Contains the information that is shown in the Traffic Responsive report (page 10-55) (if licensed).
Travel Time Link Log	Contains the information that is shown in the BlueTOAD Travel Time Links report (page 10-56) (if licensed).

6 Click **Purge** at the bottom of the window.

Depending on the quantity of data being deleted, you may see various "Purging \_\_\_\_\_ Log" status messages.

# Monitoring the Health of the System

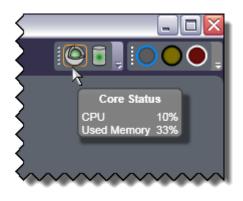
You can use the status bar in the upper-right corner of the main container window to quickly get a picture of the overall health of the Centracs system.



For more details, refer to *Viewing Application Statistics* on page 20-97 and *Viewing Database Statistics* on page 20-99.

## Viewing Application Statistics

To show the overall statistics about CPU and memory use by Centracs, hover your mouse over the Core Status icon in the status bar (upper-right corner of the main Centracs window). A tooltip appears to show you the current CPU and memory usage:



**Note** • If the Core service is not running or if there is a problem connecting to Core, the Core Status icon is shown as **R**.

• Viewing Application Statistics

### To see more details, such as available memory:

click the Internet Core Status icon. The Application Monitoring window opens.

Ту	rpe	Location	State U	ser	CPU #	CPU		Mem-Avail (MB)	Mem-Working Set (MB)	Memo	ry %	Logging %	Core UP	Core DOWN	OS Version
Ce	entracs	FAIT000143	Connected Ec	onolite	8		11.8 %	1686	433.8		60.2 <mark>%</mark>		7.72 MB/s	9.19 MB/s	6.1.7601.655
Co	ore	vm2008R2-es18	Connected <'	Windows Service>	4		0.0 %	5083	190.3		20.5 %	0.0 %			6.1.7601.655
ь	.og Status Deta	ail													
	BufferName		LastBufferUs	ed MaxBufferUsed	i Buffe	rSize	LastRecordsLo	st TotalRecords	.ost						
	CoreSaveEve	ntOueue	0	1	100	12	n	10	1						
		niqueue		1-	100	1		1							
	CoreSaveSig	nalChangeQueue	0	0 Windows Service>	100		0.1 %	0 5083	242.8		20.5 %	0.0 %			6.1.7601.65
De	CoreSaveSig	nalChangeQueue vm2008R2-es18	0	0 Vindows Service>	100		0.1 %	5083	242.8		20.5 %	0.0 %			6.1.7601.655
De	CoreSaveSig viceManager	nalChangeQueue vm2008R2-es18	0	0 Nindows Service>	4	IfferUse			242.8	-	20.5 %	0.0 %			6.1.7601.655
De	CoreSaveSign wiceManager og Status Deta BufferName	nalChangeQueue vm2008R2-es18	0 Connected <\		4	IfferUse				-	20.5 %	0.0 %			6.1.7601.655
De	CoreSaveSig viceManager og Status Deta BufferName DeviceMana	nalChangeQueue vm2008R2-es18 ail	0 Connected <\ er	LastBufferUsed	4	ufferUse	ed BufferSize				20.5 %	0.0 %			6.1.7601.65
De	CoreSaveSig eviceManager og Status Deta BufferName DeviceMana DeviceMana	nalChangeQueue vm2008R2-es18 ail gerSignalLogBuffe	0 Connected <\ er ectorLogBuffi	LastBufferUsed	4	ufferUse	bufferSize				20.5 %	0.0 %			6.1.7601.65
De	CoreSaveSig eviceManager og Status Deta BufferName DeviceMana DeviceMana DeviceMana	nalChangeQueue vm2008R2-es18 ail gerSignalLogBuffe gerAutoscopeDete	0 Connected <\ er ectorLogBuffer LogBuffer	LastBufferUsed 0 er 0	4	ufferUse	ed BufferSize 10000 10000				20.5 %	0.0 %			6.1.7601.65

This window shows various system statistics for individual Centracs components, including the Core, Device Managers, and the Centracs server and clients.

The **Core UP** and **Core DOWN** columns show the bandwidth consumed by communications with Core, where UP is inbound to the client and DOWN is outbound to Core.

There are various buffers in the system that collect data until it can be delivered to the next process in the chain. In a properly functioning system, these buffers are emptied before they overflow. However, in a saturated system, these buffers may overflow, causing data loss. The **Logging %** column on the Application Monitoring window shows the amount of buffer space in use; a very high number may indicate a problem.

#### To change your view of this table:

- To rearrange the columns in the table, drag and drop each column header to the preferred location in the table.
- To sort the data, click the column header for the data item to sort by. To sort the data in the opposite order, click the column header a second time.

Viewing Database Statistics

## Viewing Database Statistics

To show a summary of the overall health of the Centracs database on the server, hover your mouse over the Database icon in the status bar (upper-right corner of the main Centracs window). A tooltip appears to show you the current status of the database.:



The possible messages are:

- "Database is online and within size tolerances" this status is represented by a green database icon, as shown above.
- "Size tolerance warning on server {server name} drive {drive letter}" - this status is represented by a yellow database icon, and indicates that the quantity of free space left on the specified drive on the server machine is low. This message occurs when the quantity of free space is below the threshold set in the LowDatabaseStorageWarning Global Setting. (Centracs monitors the quantity of free space every 12 hours.)
- "Size tolerance critical on server {server name} drive {drive letter}" - this status is represented by a red database icon, and indicates that the quantity of free space left on the specified drive on the server machine is very low. This message occurs when the quantity of free space is below the threshold set in the LowDatabaseStorageStopLogging Global Setting. Centracs does not add any more data to the logs until the available free space is higher than the LowDatabaseStorageStopLogging value again. (Centracs monitors the quantity of free space every 12 hours.)
- "Database status is unknown" this status is represented by a question mark symbol inside the database icon:

• Viewing Database Statistics

### To get more details, such as free space and used space:

 click the Database icon. The Database Statistics window opens, and shows additional information about the current state of the database.

<ul> <li>Database Statistic</li> </ul>	s											
Drive Free Space	Total Space	e Use	d Space									
C 1801 MB	70307 MB	97										
Core - V1.4.0.0 (60.31 MB)												
Version History												
Timestamp	Vers	ion Desc	ription									
9/17/2010 4:54:39	9/17/2010 4:54:15 PM 1.3.0.41 DB creation 9/17/2010 4:54:39 PM 1.3.1.52 9/24/2010 10:33:05 AM 1.4.0.0											
	Da	atabase File	<u>is</u>									
ID Name Drive	File Group	Size	Max Size	Growth								
1 c 2 c		49408 KB 12352 KB	Unlimited 2147483648 KE	1024 KB 3 10%								
A Logs - V1.3.0.13	(3.75 MB)											
	<u>Ve</u>	rsion Histor	Ω.									
Timestamp	Versi	ion Descr	ription									
9/17/2010 4:55:04 9/17/2010 4:55:10 9/24/2010 10:33:11	PM 1.3.0.1	12	ation									
	Da	atabase File	<u>is</u>									
ID Name Drive	File Group	Size	Max Size	Growth								
1 c 2 c		2304 KB 1536 KB	Unlimited 2147483648 KB	1024 KB 38 10%								

# **Upgrading the Centracs Client Application**

When a new version of Centracs is released, it is very easy to upgrade the client application on each workstation with the Automated Update Utility. After you have backed up and updated the server(s), launch the Centracs application on the client machine(s). Enter your user name and password, and if the Core field is shown, select the Core server to connect to (or enter a different one). When you click **Log In**, Centracs recognizes that the version on the server and the version on the client workstations do not agree, which triggers this prompt: "This version appears to be out of date. Do you want to update now?" Click **Yes** to launch the installer.

### **Centracs Administration**

Upgrading the Centracs Client Application

# **Appendix – Quick Reference**

# **Action Types**

The table below identifies the various Action types that may be available (depending on which Centracs modules are licensed for your system) when you add a manual command (page 7-8), a schedule entry (page 7-11), a trigger (page 4-25), or an action set (page 7-21).

**Note** • For the Server-to-Server module, the only Action types that can be sent to signals in external systems (or received from other external systems) are Set Pattern, Set Time, and Traffic Algorithm.

Action	Details									
Activate Message	This action sends a command to a single Dynamic Message Sign (DMS) to show a particular message from one of the message libraries:									
	<ol> <li>Click to the right of the Entity field and select the DMS from the Entity Selection window.</li> </ol>									
	2 For Message Library, select the type(s) of messages to show in the Message dropdown list (below). For example, if you select Permanent, the dropdown list shows all the messages in the Permanent message library on this sign.									
	<b>3</b> From the Message dropdown list, select the message to show on the DMS.									
	4 Enter the Activation Priority for the message. In order for this message to supersede the message currently shown on the sign, the Activation Priority must be greater than or equal to the Run Time Priority of the current message. (The Run Time Priority of the current message is shown on the DMS Status display; refer to page 9-7.)									
	5 In the Duration field, enter the length of time to show the message on the sign. Use the radio buttons to specify whether the duration you entered is in minutes, hours, or days. Or click the "No end" button to run this action indefinitely (i.e., until another message with a higher activation priority supersedes it).									
	<b>Note</b> • Because this action is considered to be an instantaneous action in Centracs, disappears from the system (e.g. from the Manual Commands or Scheduler Entries window) as soon as it runs. Centracs sends the Duration settings to the sign, and the sign controls when the message is removed from the display.									
	Note • To activate the blank message, use the Blank Sign action. To activate a custom message, use the Quick Message action.									

Action Types

Action	Details
Alert	Available for triggers and action sets only (not for manual commands or schedule entries). You can choose to send online or offline alerts to one or more users, groups, or roles. For more information, refer to <i>Alerts</i> on page 4-20 and <i>Using Triggers</i> on page 4-25. If alert escalations are configured in the system, the names of the escalation policies are also listed and can be selected as the action for a trigger or action set. For more information, refer to <i>Escalating Alerts and Tickets</i> on page 4-34.
Archive Logs Data	Refer to Archiving and Restoring Data on page 20-89.
Blank Sign	This action sends a command to one or more Dynamic Message Signs (DMS) to activate the sign's "blank" message (which is specified by the Blank Message Location field on the Sign MULTI Configuration window (page 3-34)). Click to the right of the Entity field and select the entities from the Entity Selection window.
	Unlike the Activate Message action, the Blank Sign action does not have options for Activation Priority or Duration. For the Blank Sign action, the Activation Priority is automatically set to 255 (the highest priority), and the Duration is automatically set to "No end".
CCTV Preset	1 To specify the users to whom the preset will be shown, click to the right of the Selected Users field. On the User Selection window, to select multiple users at a time, hold the Ctrl or Shift key while you select them; to select all, press Ctrl-A. After you have made your selections, click < to move them to the "Selected" side of the window, and click OK. To see an example, refer to page 7-26.
	2 To specify the camera preset, click to the right of the Selected Preset field. The CCTV Preset Selection window shows all the cameras that are defined in the Genetec server. Expand the list for the appropriate camera, select one of the defined presets, and click <b>OK</b> . To see an example, refer to page 8-12.
	For more details about how to set CCTV presets, refer to <i>Defining and Maintaining Presets</i> on page 8-6.
CCTV Tour	1 To specify the users to whom the tour will be shown, click to the right of the Selected Users field. On the User Selection window, to select multiple users at a time, hold the <b>Ctrl</b> or <b>Shift</b> key while you select them; to select all, press <b>Ctrl-A</b> . To see an example, refer to page 7-26.
	2 After you have made your selections, click ≤ to move them to the "Selected" side of the window, and click <b>OK</b> .
	<b>3</b> From Available Tours list, select the tour to show.
	For more information, refer to Using CCTV Tours on page 8-13.

Action Types •

Action	Details									
Change Section	There may be times when it is helpful to temporarily move a signal from one Section to another. To use the Change Section action, select the signal to move, and the Target Section or Subsection to move it to temporarily. (The Return Signal To field gets automatically set to the original Section or Subsection for the signal.) When this action runs, the signal moves to the new Section/Subsection in the Entity Tree, and is shown in the Section Status display for the new Section/Subsection. When the action stops, the signal moves back to its original location in the Entity Tree and its original Section Status display.									
Create Ticket (MMS)	Available for triggers only (not for action sets, manual commands, or schedule entries). This action generates an MMS ticket when the specified event trigger occurs. Refer to <i>Creating Tickets From Alerts</i> on page 19-58.									
Database Maintenance	This action allows you to archive and purge the database automatically on a regular schedule. Refer to <i>Archiving and Restoring Data</i> on page 20-89 and <i>Purging Report Data from the System</i> on page 20-94.									
Generate	This action runs a report and emails it to one or more recipients:									
Report	1 To select a report type, click it.									
	2 From the Format dropdown, select the output format for the report (PDF, CSV, XLS, HTML, TIF, DOC, or XML).									
	3 Click to the right of the Email Recipient field to specify the personnel to whom the report will be emailed.									
	You can select one or more individual recipients, and/or one or more Application Roles (such as, "Administrator" or "Technician"). If you select an Application Role, then all users who are assigned that Application Role AND who have been set up as a recipient will be selected. To select more than one recipient/role at a time, hold the <b>Ctrl</b> or <b>Shift</b> key while you select them, or to select all, press <b>Ctrl-A</b> .									
	After you have made your selections, click do move them to the "Selected" side of the window, and click <b>OK</b> .									
	For more information, refer to <i>Generating Reports</i> on page 10-1 and <i>Selecting Recipients</i> on page 4-43.									
	<b>Note</b> • Recipients of reports must also have an email address specified in Centracs. For more information, refer to <i>Defining Recipients</i> on page 20-73.									

### Appendix – Quick Reference

Action Types

Action	Details										
Preempt	1 To activate a preempt for a signal, click to the right of the Signal field and select the signal from the Entity Selection window. When you do this, the Preempt dropdown list is populated with the preempts that are activated on the controller.										
	2 From the dropdown list, select a preempt. If custom preempt descriptions have been defined for this signal, they are shown in the list; otherwise, the default descriptions are shown.										
	<b>3</b> Specify how long the preempt will be active, in seconds.										
	<b>Note</b> • The Preempt action is available only for ASC/3, ASC/2, and Cobalt controllers.										
Quick Message	This action sends a command to a single Dynamic Message Sign (DMS) to show a custom message, rather than a message from the libraries:										
	1 Click _ to the right of the Entity field and select the DMS from the Entity Selection window.										
	2 Click <b>Edit Message</b> and define the text and properties for the quick message. You can enter multiple lines and multiple pages, you can change the fonts, justification, etc. For details on how to use the message editor, refer to <i>Using the DMS Message Editor</i> on page 9-15.										
	<b>3</b> Enter the Activation Priority for the message. In order for this message to supersede the message currently shown on the sign, the Activation Priority must be greater than or equal to the Run Time Priority of the current message. (The Run Time Priority of the current message is shown on the DMS Status display; refer to page 9-7.)										
	4 In the Duration field, enter the length of time to show the message on the sign. Use the radio buttons to specify whether the duration you entered is in minutes, hours, or days. Or click the "No end" button to run this action indefinitely (i.e., until another message with a higher activation priority supersedes it).										
	<b>Note</b> • Because this action is considered to be an instantaneous action in Centracs, it disappears from the system (e.g. from the Manual Commands or Scheduler Entries window) as soon as it runs. Centracs sends the Duration settings to the sign, and the sign controls when the message is removed from the display.										
	Note • To activate the blank message, use the Blank Sign action. To activate a message from the libraries, use the Activate Message action.										
Restore Logs Data	Refer to <i>Archiving and Restoring Data</i> on page 20-89. This action is available only if an archive file exists.										
	<b>Note</b> • Use a manual command to run this action; do not use the scheduler or an action set. Refer to <i>Issuing Manual Commands</i> on page 7-8.										
Set Pattern	1 Click . to the right of the Entities field and select one or more entities to set.										
	2 To the right of the Pattern field, enter the number of the pattern to set, or click the appropriate radio button to set the signal(s) to Free, Flash, or Clear/Local.										

Action Types •

Action	Details									
Set Time	Refer to Synchronizing the Time on page 6-17.									
Signal Change Logging	Turn on signal change logging to cause Centracs to log all signal events for one or more signals. Examples of signal events include Phase Green, Overlap Green, Ped Walk, Pattern Change, Local Zero, etc. To run this action, click to the right of the Entities field and select one or more entities to log. After signal change logging has been turned on, you can run the Signal Changes report (page 10-33), which is a list of all signal events that have occurred within a specified period of time.									
	<b>Note</b> • When this action is turned on, Centracs logs a large amount of extra data. For this reason, it is not meant to run indefinitely. Be sure to monitor the disk space on the server while logging is turned on.									
Signal Upload and Compare	To run this action, click _ to the right of the Entities field and select one or more entities to compare.									
	This action compares the current settings on a controller with the current settings stored in the Centracs database for that controller. To resolve any differences found, you can upload the settings from the controller and save them to the Centracs database, or download the Centracs settings to the controller — whichever is appropriate.									
	After a Signal Upload and Compare has been done, you can run the Signal Upload and Compare report (page 10-44), which shows the outcome of all Signal Upload and Compare actions during a specified time period.									
	<b>Note</b> • This feature of Centracs is not supported for Eagle EPAC or Tek-TS controllers.									
Special Function	1 To activate a special function (such as a school zone beacon), select one or more entities.									
	2 From the dropdown list, select a special function type. By default, the list contains Special Functions 1 thru 8; you can change these names on the Events window (refer to <i>Events</i> on page 4-2).									
Split Monitor Logging	Turn on Split Monitor logging to collect the data necessary for the Split Monitor and the Split Monitor report. To run this action, click to the right of the Entities field and select one or more entities to log. Refer to <i>Using Split Monitor</i> on page 6-26 and <i>Split Monitor Report</i> on page 10-46. For Oasis controllers, also refer to the information about the "Use Oasis Split Monitor Log" Global Setting on page 20-58.									
Time Broadcast	Refer to Synchronizing the Time on page 6-17.									

### Appendix – Quick Reference

Action Types

Action	Details										
Time Drift Check	"Time drift" measures any difference between the current time according to Centracs and the current local time on the field controllers. The Time Drift Check action compares the time on the specified controller(s) to the time on the server. To run this action:										
	1 Click 🔜 to the right of the Entities field and select one or more entities to check.										
	2 Optionally, turn on the "Automatically correct controller time when maximum drift exceeded" option, and enter a number in the Maximum Drift field. If the time drift on the controller is larger than the number of seconds you entered in the Maximum Drift field, Centracs will automatically adjust the time on the controller to agree with the time on the server.										
	After a Time Drift Check has been done, you can run the Time Drift report (page 10-53) which shows the outcome of all Time Drift Check actions during a specified time period										
	Note • These signals are not included in a Time Drift Check:										
	- Signals without any configured communication settings (on the Entity Configuration window)										
	- Signals from external Server-to-Server systems										
Traffic Algorithm	This action enables a Traffic Responsive algorithm to send pattern changes to its associated field controllers. (When this action is not running, the algorithm makes its calculations, but does not take control of the intersections.) The Algorithm dropdown contains a list of all the traffic algorithms that have been configured. Select the algorithm to run. For more information, refer to <i>Introduction to Traffic Responsive (TR)</i> on page 13-1 and <i>Running a Traffic Algorithm</i> on page 13-14.										
Upload Changeable Messages	This action copies all the Changeable messages from a Dynamic Message Sign (DMS) into Centracs. Click 🔜 to the right of the Entity field and select the entities from the Entity Selection window.										
	<b>IMPORTANT</b> • If you have already defined or loaded Changeable messages in Centracs for this DMS, this action replaces them with the Changeable messages currently defined on the sign.										

Action Types

Action	Details									
Upload	Select the controllers to upload.									
Controller Logs	<b>Note</b> • Because some controllers keep only 24 hours of data, the recommended schedule for uploads is twice per day. In the scheduler, under "Recurrence", use the "Daily" option, and specify "Every 12 hours and 0 minutes". Set the Start time to any time before noon (such as 10:00), and set the End time to be 12 hours later (such as 22:00). For more information, refer to <i>Using the Scheduler</i> on page 7-11.									
	For ASC/3, ASC/2, and Cobalt controllers, this action populates the Signal Events, Signal Detector Events, and Signal MMU Events reports in Centracs and the Signal Events Log and Signal Detector Events Log in Local Edition.									
	For Oasis controllers, this action also populates the Oasis Plans Log and Oasis Functions Log reports in Local Edition. More specifically, for Oasis controllers:									
	The Oasis Plans Log in Local Edition contains data from the COORD PLANS log on the controller.									
	The Oasis Functions Log in Local Edition contains data from the FUNCTIONS log on t controller.									
	The Signal Events Log in Local Edition and the Signal Events report in Centracs conta data from the ALARMS and EVENTS logs on the controller.									
	<b>Note</b> • When you upload the logs from an Oasis controller into Centracs, all the log entries are deleted from the controller. When you upload the logs into Local Edition, the log entries on the controller are <i>not</i> erased.									
	The Upload Controller Logs action is not supported for Eagle controllers.									
	For information about the Centracs reports, refer to page 10-1.									
Upload MOE Logs	This action populates the Centracs database with data necessary for the MOE (Measu of Effectiveness) reports. To run this action, click is to the right of the Entities field ar select one or more controllers to upload. For more information, refer to <i>Using the MC Reports</i> on page 11-1. Because the controllers keep only 24 hours of data, the recommended schedule for uploads is at least one time per day.									
	<b>Note</b> • The MOE log upload is an FTP-based upload. If the FTP username and password have been changed on the controller, you must change them in Centracs to match. You can change them for all controllers on the Default Comm Parameters window (page 20-10) or for a single controller on the Device Communication Configuration window (page 3-44).									

• ASC/3 and Cobalt Controller Segments

# ASC/3 and Cobalt Controller Segments

When you use the Controller Editor to upload settings from a controller or download settings to a controller, you must specify which segments to upload/download. Each segment contains a specific subset of the controller parameters. The table below maps each parameter region in the Editor to its related segment(s). This table is also useful when you run the Signal Upload and Compare report (page 10-44), which shows any segments that are different between the controllers and the Centracs database.

Tab	Sub-tab	Region of tab	Comm. Ports	Configuration	Coordinator	Detectors	Enable Logging	Load Switch	Logic Processor	Overlap	Peer 2 Peer	Phase Timing	Preemptor	Sequencer	TimeBase	TSP
Configuration	Phase Seq - Pg 1	Phase Ring		٠										٠		
Configuration	Phase Seq - Pg 1	Phase Compatibility												٠		
Configuration	Phase Seq - Pg 1	Direction Descriptions (refer to Note below)														
Configuration	Phase Seq - Pg 1	Administration		٠												
Configuration	Phase Seq - Pg 2	Phases In Use/ Exclusive PED										•		٠		
Configuration	Phase Seq - Pg 2	Load Switch Assignments (MMU Channel)						*								
Configuration	Phase Seq - Pg 2	Backup Prevent												•		
Configuration	Phase Seq - Pg 2	Simultaneous Gap										•				
Configuration	SDLC	Port 1 SDLC		٠												
Configuration	SDLC	Color Check Enable		•												
Configuration	SDLC	Secondary Stations/Tests		•												
Configuration	SDLC	MMU Program		٠												
Configuration	Comm - Pg 1	Ethernet Port Configuration	•													
Configuration	Comm - Pg 1	Port Configuration	•													

ASC/3 and Cobalt Controller Segments •

Tab	Sub-tab	Region of tab	Comm. Ports	Configuration	Coordinator	Detectors	Enable Logging	Load Switch	Logic Processor	Overlap	Peer 2 Peer	Phase Timing	Preemptor	Sequencer	TimeBase	TSP
Configuration	Comm - Pg 1	NTCIP	٠	٠												
Configuration	Comm - Pg 1	ECPIP	٠			٠										
Configuration	Comm - Pg 2	Peer-to-Peer Setup									•					
Configuration	Logging / Display	Event Logging					٠									
Configuration	Logging / Display	Display Options		•												
Configuration	Logging / Display	Sign On		٠												
Configuration	Logic Proc - Pg 1	Logic Statement Control		•												
Configuration	Logic Proc - Pg 2	Logic Statement							•							
Configuration	Logic Proc - Pg 2	Peer and T/F									٠					
Controller	Timing Plan	Timing Plan										٠				
Controller	Timing Plan	Phase Descriptions (refer to Note below)														
Controller	Vehicle Overlaps	Vehicle Overlaps								•						
Controller	Vehicle Overlaps	Guaranteed Minimum Time Data								•		•				
Controller	Veh/Ped Overlaps	Vehicle / Pedestrian Overlaps								•						
Controller	Start Flash	Start/Flash Data		٠						•				٠		
Controller	Options	Controller Options		•		•						•		•		
Controller	Options	ACT Pre-Time										٠				
Controller	Options	Phase Recall Options				•										
Coordination	Coordinator - Pg 1	Options			٠											

ASC/3 and Cobalt Controller Segments

Tab	Sub-tab	Region of tab	Comm. Ports	Configuration	Coordinator	Detectors	Enable Logging	Load Switch	Logic Processor	Overlap	Peer 2 Peer	Phase Timing	Preemptor	Sequencer	TimeBase	TSP
Coordination	Coordinator - Pg 1	Split Demand			٠											
Coordination	Coordinator - Pg 1	Auto Perm Minimum Green			•											
Coordination	Coordinator - Pg 2	Coordinator Pattern Data			•											
Coordination	Coordinator - Pg 2	Split Pattern Data			•											
Preempt	Preempt Plan	Preempt Plan											٠			
Preempt	Preempt Filtering	Enable Preempt Filtering & TSP/ SCP											*			
Preempt	TSP/SCP Plan and Split	TSP / SCP Plan														•
Preempt	TSP/SCP Plan and Split	TSP / SCP Split Pattern														•
TimeBase	Clock/Calendar	Clock/Calendar Data													•	
TimeBase	Action Plan	Action Plan													٠	
TimeBase	Day Plan/Schedule	Day Plan													٠	
TimeBase	Day Plan/Schedule	Schedule													٠	
TimeBase	Exceptions	Exception Day Program													•	
Detectors	Detectors - Page 1	Veh Det Phase Assignment				*										
Detectors	Detectors - Page 1	Vehicle Detector Setup				٠										
Detectors	Detectors - Page 1	Ped Detector Phase Assignment				•										
Detectors	Detectors - Page 2	Log - Speed Detector Setup				•										

ASC/3 and Cobalt Controller Segments •

Tab	Sub-tab	Region of tab	Comm. Ports	Configuration	Coordinator	Detectors	Enable Logging	Load Switch	Logic Processor	Overlap	Peer 2 Peer	Phase Timing	Preemptor	Sequencer	TimeBase	TSP
Detectors	Detectors - Page 2	Vehicle Detector Diagnostics				٠										
Detectors	Detectors - Page 2	Pedestrian Detector Diagnostics				•										

**Note** • In addition:

- The Direction Descriptions and Phase Descriptions are informational in the Editor; they are not downloaded to the controller.
- The System Info segment does not have any relation to any of the parameters shown in the Editor, but contains settings necessary for the controller to function correctly.
- The Extended Options segment contains custom options.
- The Peer 2 Peer segment is supported only for the Cobalt controller and the 2070 1-C (ATC) controller.
- The Plan/LP Names segment contains miscellaneous text fields that are available only for Cobalt (in graphical mode). These include the timing plan names, event plan/action plan names, day plan names, logic statement names, and peer names.

• Available Commands from the Map, Tree, Etc.

# Available Commands from the Map, Tree, Etc.

For convenience and ease-of-use, you can issue most Centracs commands from more than one screen. For example, many commands can be issued by right-clicking on a device in:

- the Entity Tree
- the Map Viewer
- the Section/Subsection Status display
- the Device Status window

The table below shows the device-related commands available in Centracs, what they mean, and where to get more information about them. The commands are shown below in alphabetical order.

# **Note** • Depending on your permissions, you may not have access to all of these commands. The commands also differ depending on the device type you selected.

Command	Meaning			
Activate Message	For DMS devices only. This command allows you to activate a message from the Permanent or Changeable library on the sign. Refer to <i>Activating a DMS Message from the Library</i> on page 9-11.			
Add Entity	This command allows you to add new entities to the Entity Tree. Refer to <i>Adding Entities via the Entity Tree</i> on page 3-8			
Blank Sign	For DMS devices only. This command allows you to send the "blank" message to one or more signs. Refer to <i>Activating the Blank Message</i> on page 9-12.			
Central Override	For DMS devices only. This command allows central to override local mode on the sign. Refer to page 9-9.			
Device Collection Monitor	For signals only. This command opens the Entity Configuration window, where you can see signal status information for multiple devices at the same time. Refer to <i>Using the Device Collection Monitor</i> on page 6-19.			
Edit Messages	For DMS devices only. This command allows you to add, change, or delete Changeable messages for a sign. Refer to <i>Configuring DMS Messages</i> on page 9-4.			
Edit Properties	This command opens the Entity Configuration window, where you can define, view, or change the properties assigned to the selected entity. Refer to <i>Editing Entity Properties</i> on page 3-9.			

Command	Meaning				
Launch Map Editor	This command opens the Map Editor, which you can use to configure how your entities look on the map. Refer to <i>Editing the Map View</i> on page 5-18.				
Launch Signal Editor	For signals only. This command opens the Signal Editor, which you can use to define, view, or change the settings on the field controllers. Refer to <i>Maintaining Controller Settings Remotely</i> on page 15-1.				
Manual Command	This command opens the Manual Command editor, where you can define a command to run at a specific time. Refer to <i>Issuing Manual Commands</i> on page 7-8.				
Notes	This command opens the Notes editor, where you can view, change, or add notes for the selected entity. Refer to <i>Adding Notes to Entities</i> on page 3-14.				
Quick Message	For DMS devices only. This command allows you to activate a custom message on the sign. Refer to <i>Creating a Quick Message</i> on page 9-13.				
Remove Entity / Remove from Map	When issued from the Map Viewer, this command removes all map icons associated with this entity. When issued from the Entity Tree, this command removes the entity from the tree and all associated icons from the map.				
Schedule	This command opens the New Schedule Entry editor, where you can define a command to run on a specified schedule. Refer to <i>Using the Scheduler</i> on page 7-11.				
Show Status	For most entity types, this command opens the Status display. For CCTVs, this command shows the actual view from the camera.				
Show Video	For Autoscope Data Collection Stations (in Centracs DCMS) only. Refer to <i>Using DCMS for Data Collection</i> on page 17-1.				
Split Monitor	For signals only. This command opens the Split Monitor window, where you can compare the actual splits for an intersection to the programmed splits, and use the data to adjust the splits for the most efficient throughput. Refer to <i>Using Split Monitor</i> on page 6-26.				
Time Space Analysis	For signals only. This command opens the Time Space diagram, where you can analyze progression and coordination along a specified route. Refer to <i>Using the Time Space Analysis</i> on page 6-33.				

• Available Commands from the Map, Tree, Etc.

Command	Meaning
Zoom to Entity	For entities with assigned map coordinates, this command pans and zooms to the location of the entity on the map. You must have a Map Viewer window open in order to see this command in the menu. Refer to <i>Zooming to Specific Entities</i> on page 5-14.
Zoom to Parent	This command pans and zooms to the collection of entities that belong to the hierarchical "parent" of the selected entity. You must have a Map Viewer window open in order to see this command in the menu. Refer to <i>Zooming to Specific Entities</i> on page 5-14.

# **Controller Modes and Patterns**

Multiple screens in Centracs, including the Signal Status display, Section Status display, Subsection Status display, and Device Status window, show current controller modes and patterns. The possible values for these are specified below.

## **Desired Modes**

In the "Desired" field on the Signal Status display (page 6-1), the unit control modes are:

- NONE = the system does not currently have control of the signal (i.e., the signal is running locally).
- MAN = the signal is under the control of a manual command from the central system.
- **TOD** = the signal is under the control of a scheduled command from the central system.
- **TA** = a traffic algorithm is choosing the patterns.

They indicate the mode that the controller *should* be in, and the pattern that *should* be running, according to the central system.

These modes are also shown in the "Summary" section of the Section Status display and Subsection Status display (page 6-10).

## **Current Modes**

In the "Current" field on the Signal Status display (page 6-1), the unit control modes are:

- BM = backup mode; the controller is under local control due to the absence of commands from the central system during the NTCIP backup time interval. In other words, the NTCIP backup timer expired before any commands were received by the controller. By default, any time a command (such as Set Pattern) is active, Centracs resends NTCIP system control parameters to the controllers every 150 seconds (this is controlled by the "NTCIP System Control Period" Global Setting), which resets the backup timer. If no commands are active, and if the backup timer on your controller is set to 150 seconds or less, and if no new commands are received by the controller during that time, the controller reverts to backup mode. Similarly, if a command is sent from Centracs to manually put the controller in local TOD mode, Centracs does not continue to resend the system control parameters to the controller; when the backup timer expires, the controller enters backup mode. A controller remains in backup mode until a new command is received from central.
- IC = Interconnect; the controller is under the control of external (hardwire interconnect) coordination inputs and outputs.
- **ICB** = Interconnect Backup; the controller is operating under local TOD control due to the absence of Interconnect control.
- MAN = the controller is operating under local manual control; manual control overrides all other pattern commands.

Patterns

- STBY = the system has commanded the controller to be under local control (i.e., the system sent a command to cancel any prior commands from the system). In standby mode, the controller can accept commands from other sources, such as the local time-of-day schedule or external interconnect.
- **sys** = the controller is running a pattern or other command sent by the central system.
- TOD = the controller is operating under local time-of-day/time-based control.
- DFLT or OTHER = any other mode than those shown above (for example, this mode may be reported while the controller starts up, or while the System Pattern Override feature is in effect).

They indicate the *actual* controller mode and the *actual* pattern reported by the controller.

These modes are also shown in the "General Status" field on the Device Status window (page 6-23), and in the Signals section of the Section Status display and Subsection Status display (page 6-10).

### Patterns

Signals operate in these basic operating states: coordinated, programmed flash, error flash, and free. These operating states are shown as:

- a pattern number = the controller is running in coordination
- FLSH = the controller is in error flash (i.e., unintentional flash, such as MMU flash or startup flash)
- **PFLSH** = the controller is in programmed flash (i.e., intentional flash, such as for a fire station signal that flashes)
- FREE = the controller is not running in coordination (i.e., is not running a pattern)
- NON = none; the system has not sent a pattern to the controller

For example, BM/1 means the controller is in backup (local) mode and is running pattern 1; STBY/FREE means the controller is on standby and is not running in coordination.

# **Bindings for the Permissive Green Icon**

When you set the binding for a Permissive Green icon in the Map Editor, select one of these permissive/protected turn configurations:

## Flashing Yellow Arrow (FYA) / Flashing Yellow Overlap (FYO)

If you select the Flashing Yellow Arrow binding Status Property, the Permissive Green icon uses the polled status of the overlap and the protected parent as configured in the controller to display the current status on the map. In addition to configuring the "Permissive Green" arrow in the Map Editor, you must also configure the Signal Editor and the Polling Packet:

### Signal Editor

In the Signal Editor for ASC/3 or Cobalt, configure the fields on the Vehicle Overlaps screen (MM-2-2) for the overlap type of PPLT/FYA.

### **Polling Packet**

The relevant objects to include in the polling packet for a FYO:

- cobaltOverlapStatusGroupFlashing / asc3OverlapStatusGroupFlashing (depending on the controller type)
- overlapStatusGroupGreens
- overlapStatusGroupYellows
- overlapStatusGroupReds

## Doghouse

If you select the Doghouse binding Status Property, the Permissive Green icon behaves as shown below:

Turn Phase (e.g., 5)	Adjacent Phase (e.g., 2)	Icon Appearance			
Green	Red	Solid Green			
Yellow	Red	Solid Yellow			
Red	Green	Flashing Green			
Red	Yellow	Solid Yellow			
Red	Red	Solid Red			
Green	Green	Solid Green			

#### Appendix – Quick Reference

Canadian Fast Flash

Turn Phase (e.g., 5)	Adjacent Phase (e.g., 2)	Icon Appearance
Yellow	Yellow	Solid Yellow
Yellow	Green	Solid Yellow

## Canadian Fast Flash

If you select the Canadian FF binding Status Property, the Permissive Green icon behaves as shown below:

Turn Phase (e.g., 5)	Adjacent Phase (e.g., 2)	Icon Appearance		
Green	Red	Flashing Green		
Yellow	Red	Solid Yellow		
Red	Green	Solid Green		
Red	Yellow	Solid Yellow		
Red	Red	Solid Red		
Green	Green	Flashing Green		
Yellow	Yellow	Solid Yellow		
Yellow	Green	Solid Yellow		