CHAPTER 11

Accessing Data from the Web Interface

This chapter provides information about accessing Cisco Mobile Wireless Transport Manager (MWTM) data from the MWTM web interface by using a web browser. This chapter includes:

Accessing the MWTM Web Interface

The home page of the MWTM web interface is the first window to appear when you launch the MWTM web interface.

To access the MWTM web interface, use one of these methods:

- Open a browser and enter **http://***server_name***:1774** in the Address field.

Note 1774 is the default port.

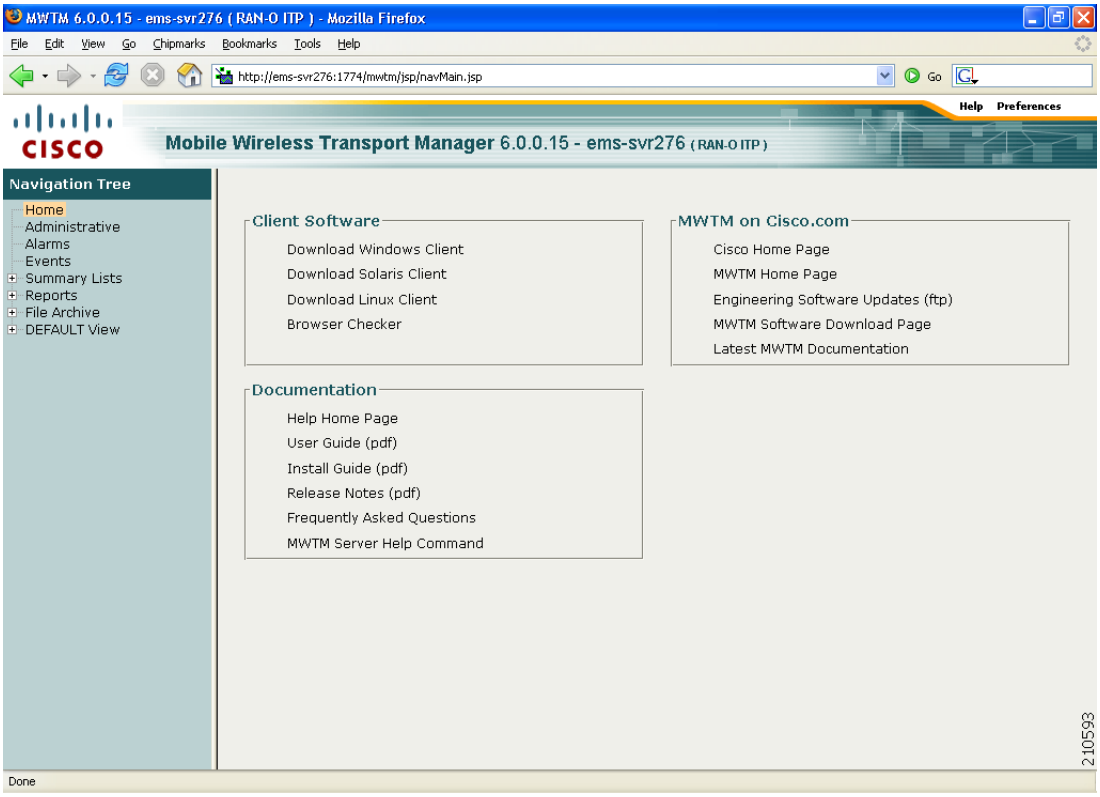
- From the MWTM client interface, choose **View > Web > Home**.

The MWTM Home page window opens in the browser window. For details about the Home page, see Displaying the Home Page, page 11-6.

Overview of the MWTM Web Interface

The MWTM web interface shows basic information about the events and objects that the MWTM manages.

Figure 11-1 MWTM Web Interface



The MWTM web interface shows these panes:

Pane	Description
Title Bar	Shows: • Mobile Wireless Transport Manager, version, and server name • Personalities (ITP, RAN-O, or both) • Logout (appears only if you enable user access; see Configuring User Access, page 2-1) • Help—Click this link to access context-sensitive online help • Preferences—Click this link to access preferences that you can change from the web interface (see Changing Web Preference Settings, page 5-19)
Navigation Tree	In the left pane, shows a tree of information organized by categories (see MWTM Web Interface Navigation Tree, page 11-3).
Content Area	In the right pane, shows detailed information about the object selected in the navigation tree (see MWTM Web Interface Content Area, page 11-4).

MWTM Web Interface Navigation Tree

You can easily navigate the features of the MWTM web interface by using the navigation tree in the left pane. To view detailed information about a selection in the navigation tree, click the item in the tree. The content area in the right pane shows details about the selected item. A plus (+) or minus (-) just to the left of the item indicates whether the item has subtending items under its domain.

The MWTM automatically updates the navigation tree when changes occur to discovered nodes or to the network. When any changes occur in the MWTM client navigation tree, the MWTM web interface reflects these changes in its navigation tree. For example, if you delete a node in the MWTM client, the MWTM web interface removes that node from its navigation tree.

Note For information about the navigation tree in the MWTM client interface, see MWTM Client Navigation Tree, page 4-25.

The MWTM web interface navigation tree contains:

GUI Element	Description
Home	Shows links to MWTM client software, Cisco documentation, and information about the MWTM on the Cisco web (see Displaying the Home Page, page 11-6).
Administrative	Shows MWTM system information including messages, logs, status, and properties (see Displaying the Administrative Page, page 11-9). If MWTM User-Based Access is enabled, only users with authentication level 3 (Network Operator) and higher can see all options. Users of all other levels see only the System Information and System Status panes.
Alarms	Shows alarms (see Displaying Alarms, page 11-27).
Events	Shows information about the events delivered by the MWTM event logger and event processor for events that the MWTM event logger and event processor deliver for all objects in the current network view (see Displaying Events, page 11-28).
Summary Lists	Shows summaries of all objects that the MWTM manages (see Displaying Summary Lists, page 11-28).
Reports	Shows: • ITP historical reports for a specified time period (see Displaying Reports, page 11-29). • Event reports for RAN-O and ITP networks (see Setting an Event Filter, page 9-8). If MWTM User-Based Access is enabled, only users with authentication level 4 (Network Administrator) and higher can see the Reports menu.
DEFAULT View	Shows a current list of nodes in the DEFAULT view (see Displaying Objects within a View, page 11-29).

MWTM Web Interface Content Area

The content area of the MWTM client interface is fully described in MWTM Client Content Area, page 4-26. That description also applies to the web interface. Additional navigational features that appear only in the web interface include:

- Customizing the Date Range, page 11-4
- Using the Toolbar, page 11-4

Customizing the Date Range

Some windows require that you select date ranges for generating historical charts (see Displaying RAN-O Historical Statistics, page 11-29). Standard date ranges (for example, Last 24 Hours or Last 7 Days) are available from a drop-down menu. However, if you want to customize the date range:

Step 1 Click the **Customize Date and Time Range** tool in the toolbar of the content area. A dialog box appears.

Step 2 Enter a:

a. Begin Date and End Date; or, select those dates by clicking the Calendar tool.

b. Begin Hour and End Hour from the drop-down menus, if they are available.

Note The dialog box shows an error if the End Date is equal to or less than the Begin Date. Correct the error before proceeding.

Step 3 Click **OK** to accept the date and time changes; or, **Cancel** to cancel this operation.

The MWTM web interface generates a report for the specified time period.

Using the Toolbar

The web interface toolbar provides these context-sensitive tools depending on the object that you select in the navigation tree:

Tool or Function	Description
Modify event filter	Opens the Event Filter dialog box. You can create a filter to display only the events in which you are interested (see Setting an Event Filter, page 9-8).
Remove filter	Applies or removes a filter that you created.
Customize Date and Time Range	Opens the Customize Date and Time Range dialog box (see Customizing the Date Range, page 11-4).
Graph Series Editor	Opens the Graph Series Editor dialog box, which provides a check box for each shorthaul that is associated with the selected RAN backhaul. To display a data series, check the check box. To hide a series, uncheck the check box. The MWTM displays no more than 12 series by default. To change this default setting, see Display Series Dialog Box, page 8-129.
Run	Runs the report type for the selected duration.

Tool or Function	Description
Export	Exports the raw chart data to a report with comma-separated values (CSV file). You can save this file to disk or open it with an application that you choose (for example, Microsoft Excel).
>	Advances the display to the next page of information.
>>	Advances the display to the last page of information.
<	Advances the display to the previous page of information.
<<	Advances the display to the first page of information.
Data Range	Label that shows the selected time range for the historical statistics.
Duration	Drop-down list of default time ranges. Select one of these options, then click the **Run** tool. To specify a nondefault time range, click the **Customize Date and Time Range** tool.
Page Size	Drop-down list of different page sizes (the number of table rows in the display). Click the drop-down arrow to select a different value. The value that you select becomes the default page size for all pages in the web interface. The title bar displays the current page and total number of table entries.
Status Refresh Interval	Allows you change the default refresh interval of 180 seconds. Enter a value between 180 and 900 seconds. **Note** Changes you make are temporary to the current page. Navigating away from the page sets the status refresh interval back to the default setting. To change the default setting, see Changing Web Preference Settings, page 5-19.
Slow Poller Interval	Allows you to change the default slow poller interval of 60 seconds. Enter a value between 60 and 300 seconds. **Note** Changes you make are temporary to the current page. Navigating away from the page sets the status refresh interval back to the default setting. To change the default setting, see Changing Web Preference Settings, page 5-19.
Type	Drop-down list of different types of reports that you can generate. For descriptions of the different report types, see: • Displaying Shorthaul Performance Statistics, page 11-31 • Displaying Backhaul Performance Statistics, page 11-32 • Displaying Shorthaul Error Statistics, page 11-35 • Displaying Backhaul Error Statistics, page 11-37

Displaying the Home Page

The MWTM web interface Home page provides access to MWTM client software, Cisco documentation, and information about the MWTM.

To access the Home page of the MWTM web interface, click **Home** under the navigation tree in the left pane.

The content area in the right pane shows these GUI elements:

Pane	GUI Element	Description
Client Software	Download Windows Client Download Solaris Client Download Linux Client Browser Checker	Shows the download instructions for the: • Windows client • Solaris client • Linux client • Information about the browser and screen display For details, see Downloading the MWTM Client from the Web, page 11-7.
MWTM on Cisco.com	Cisco Home Page MWTM Home Page Engineering Software Updates (FTP) MWTM Software Download Page Latest MWTM Documentation	Shows hyperlinks to: • *http://www.cisco.com* • MWTM information on the Cisco web • Software updates provided by Cisco Engineering • MWTM software download from Cisco.com • Most recent versions of MWTM documentation For details, see Accessing Software Updates and Additional Information, page 11-8.
Documentation	Help Home Page User Guide Install Guide Release Notes Frequently Asked Questions MWTM Server Help Command	Shows: • Online Help system for the MWTM • PDF versions[1] of the: – *User Guide for the Cisco Mobile Wireless Transport Manager* – *Installation Guide for the Cisco Mobile Wireless Transport Manager* – *Release Notes for the Cisco Mobile Wireless Transport Manager* • HTML version[1] of the FAQs • CLI output of the **mwtm help** command For details, see Viewing the MWTM Technical Documentation, page 11-9.

1. To access the latest versions, go to the parent index for Cisco MWTM user documents: http://www.cisco.com/en/US/products/ps6472/tsd_products_support_series_home.html

Downloading the MWTM Client from the Web

You can access the MWTM client installation software for Linux (unsupported), Solaris, and Windows from the MWTM web interface Home page. This access is useful if you do not have the CD-ROM, or if you prefer to download the software by using your web browser. Once you have downloaded the MWTM client installation software to your workstation, you must install the software on your local system.

For more information about installing the MWTM client software by using a web server, see the following chapters in the *Installation Guide for the Cisco Mobile Wireless Transport Manager 6.0:*

- "Installing the MWTM on Solaris"
- "Installing the MWTM on Windows"
- "Installing the MWTM on Linux"

Download the Solaris Client

To access the MWTM Client for Solaris page, select **Download Solaris Client**.

The web interface shows the supported Solaris versions and instructions for downloading the Solaris client. See the *Installation Guide for the Cisco Mobile Wireless Transport Manager 6.0* for a detailed procedure.

To start the client after installation, add the */opt/CSCOsgmClient/bin* subdirectory to your path, then enter the **mwtm client** command from the command line.

Download the Windows Client

To access the MWTM Client for Windows page, select **Download Windows Client**.

The web interface shows supported Windows versions and instructions for downloading the Windows setup program. After downloading the setup program onto your desktop or other Windows directory, double-click the **setup.exe** icon to start the setup program and launch the installation wizard. See the *Installation Guide for the Cisco Mobile Wireless Transport Manager 6.0* for detailed procedures.

To start the client after installation, launch it from the Windows Start menu or double-click the **MWTM Client** icon on your desktop.

Download the Linux Client (Unsupported)

To access the MWTM Client for Linux page, select **Download Linux Client**.

Note The MWTM does not support the MWTM client for Linux. Use the MWTM Linux client under advisement.

The web interface shows the supported Linux versions and instructions for downloading the Linux client. See the *Installation Guide for the Cisco Mobile Wireless Transport Manager 6.0* for a detailed procedure.

To start the client after installation, add the */opt/CSCOsgmClient/bin* subdirectory to your path, then enter the **mwtm client** command from the command line.

Checking Your Browser

Note Supported browsers for the MWTM include Mozilla 1.4 or greater, Firefox 1.5 or greater, and IE 6 or greater. Opening the MWTM in an unsupported browser generates a warning. Also, if JavaScript is not enabled, the MWTM web interface cannot function.

To check your browser and screen settings, select **Browser Checker**.

The Browser Checker window contains:

Pane or Field	Description
Browser Information:	
Browser	The name and version of the browser you are using. For example, Firefox 1.5.0.9.
Browser User Agent	Text string sent to identify the user agent to the server. Typically includes includes information such as the application name, version, host operating system, and language.
Platform	The platform type. For example, Win32.
Cookies Enabled	Whether you have cookies enabled on the browser (Yes or No).
Javascript Enabled	Whether Javascript is enabled (Yes or No).
AJAX Component	The Asynchronous JavaScript and XML (AJAX) component sends asynchronous HTTP update requests. The MWTM web application is only accessible to web browsers that have an AJAX component enabled. Typical values include XMLHttpRequest (for Mozilla-based browsers) and MSXML2.XmlHttp (for IE 6).
Screen Information:	
Size	Resolution of the display; for example, 1024 x 768.
Color Depth	Depth of the color display; for example, 16.

Accessing Software Updates and Additional Information

You can access this information about the MWTM from the MWTM web interface Home page. To:

- View information about the MWTM or any other Cisco product available on Cisco.com, select **Cisco Home Page**.
- Read Cisco literature associated with the MWTM, including product data sheets, Q and As, and helpful presentations, select **MWTM Home Page**.
- Access software updates for the MWTM from Cisco.com for FTP, select **Engineering Software Updates (FTP)**. The Cisco Systems Engineering FTP server page appears.

- Access software updates for the MWTM from Cisco.com, select **MWTM Software Download Page**. The Software Download page for the MWTM appears.
- Access the most recent versions of customer documentation for the MWTM, select **Latest MWTM Documentation**. The Cisco Mobile Wireless Transport Manager documentation page on Cisco.com appears. From this page, you can view the latest versions of MWTM release notes, installation guides, and end-user guides.

Note If you cannot access Cisco.com from your location, you can always view the customer documentation that was delivered with the MWTM software. See the "Viewing the MWTM Technical Documentation" section on page 11-9.

Viewing the MWTM Technical Documentation

From the MWTM web interface Home page, you can view this MWTM technical documentation. To view the:

- Entire Cisco Mobile Wireless Transport Manager Help System, select **Help Home Page**.
- Entire *User Guide for the Cisco Mobile Wireless Transport Manager 6.0* as a PDF file on the web, using the Adobe Acrobat Reader, select **User Guide (PDF)**.
- Entire *Installation Guide for the Cisco Mobile Wireless Transport Manager 6.0* as a PDF file on the web, using the Adobe Acrobat Reader, select **Install Guide (PDF)**.
- Entire *Release Notes for the Cisco Mobile Wireless Transport Manager 6.0* as a PDF file on the web, using the Adobe Acrobat Reader, select **Release Notes (PDF)**.
- Frequently Asked Questions (FAQs) about the MWTM, select **Frequently Asked Questions**.
- Syntax for every MWTM command, select **MWTM Server Help Command**.

Caution These PDF versions of technical documents might not be the latest versions. For the latest versions, go to: http://www.cisco.com/en/US/products/ps6472/tsd_products_support_series_home.html.

Displaying the Administrative Page

The MWTM web interface Administrative page provides access to MWTM system information, including messages, logs, status, and properties.

To access the Administrative page of the MWTM web interface, click **Administrative** under the navigation tree in the left pane. The right pane displays the information indicated in Table 11-1.

Note If MWTM User-Based Access is enabled, only users with authentication level 3 (Network Operator) and higher can see all options. Users of all other levels see only the System Information and System Status panes.

Table 11-1 Administrative Home Page Information

Pane	GUI Elements	Description	Reference
System Information	• README • ITP OS README • RAN-O OS README • MIBs	• *README.txt* file • *MWTM-OS-Info-ITP* file • *MWTM-OS-Info-RAN-O* file • Lists of MIBs, including: – RAN MIBs – ITP MIBs	For details, see Viewing System Information for the MWTM, page 11-11.
System Messages	• Info Messages • Error Messages • User Actions • Message Archives	Shows tabular information about different types of system messages.	For details, see Viewing System Messages, page 11-12.
System Status	• System Status • System Versions • Connected Clients • User Accounts	Shows the output of these system commands: • **mwtm status** • **mwtm version** • **mwtm who** • **mwtm users**	For details, see Viewing System Status Information, page 11-17.
System Logs	• Console Log • Command Log • Event Automation Log • Security Log • Install Log • Web Access Log • Web Error Log • Report Log	Shows the contents of these system logs: • *sgmConsoleLog.txt* • *sgmCommandLog.txt* • *eventAutomationLog.txt* • *sgmSecurityLog.txt* • *cisco_sgmsvr_install.log* • *access_log* • *error_log* • *sgmReportLog.txt*	For details, see Viewing System Logs, page 11-19.
Properties	• System • Server • WebConfig • Reports • Trap Forwarding	Shows the contents of these system property files: • *System.properties* • *Server.properties* • *WebConfig.properties* • *Reports.properties* • *TrapForwarder.properties*	For details, see Viewing Properties, page 11-23.

Viewing System Information for the MWTM

You can view this MWTM system information from the Administrative page:

- **README**—Shows the contents of the */opt/CSCOsgm/install/README.txt* file. This file provides a brief overview of the system requirements and the tasks that are necessary to install this software release.

  To access the MWTM README page, select **README** from the **Administrative** page.

- **ITP OS README**—Shows the contents of the */opt/CSCOsgm/install/MWTM-OS-Info-ITP* file. This file contains a list of the supported OS software images for:
  - ITP nodes
  - GTT encoding scheme
  - MLR address table configuration
  - GTT accounting statistics reports
  - Route table and GTT table deployment
  - MSU rates
  - ITP provisioning

  To access the MWTM ITP OS README page, select **ITP OS README** from the **Administrative** page.

- **RAN-O OS README**—Shows the contents of the */opt/CSCOsgm/install/MWTM-OS-Info-RAN-O* file. This file contains a list of the supported OS software images for:
  - MWR nodes
  - ONS nodes
  - RAN SVC cards

  To access the MWTM RAN-O OS README page, select **RAN-O OS README** from the **Administrative** page.

- **MIBs**—Shows a list of the RAN or ITP MIBs (or both) on the server to which you are connected, and which is currently running the MWTM.

  Each MIB appears in a list as a clickable link. You can open or download the contents of the MIB by clicking the MIB name. See Appendix F, "MIB Reference," for a complete list and high-level description of each supported MIB.

  To access the MIBs page, select **MIBs** from the **Administrative** page of the MWTM web interface.

Viewing System Messages

You can view these MWTM system messages from the Administrative page:

Note These messages are related to the MWTM system itself, not to your network.

Viewing Info Messages

The System Messages: Last *number* Info Messages page shows informational messages in the MWTM system log. These messages can be useful when diagnosing and correcting MWTM operational problems.

To access this page, click **Info Messages** from the **Administrative** page, or **Info** from the web page menu bar, if visible.

The Last Info Messages table contains:

Column	Description
Period (in heading)	Collection period of the table, such as `Since Server Restart`.
Timestamp (in heading)	Date and time the MWTM last updated the information on the page.
Row	Unique number identifying each entry in the table. You cannot edit this field.
Time	Date and time the message was logged. To sort the messages by time, click the Time heading.
Source	Source for the message, with the format *process.host.id*, where: • *process* is the process that logged the message. • *host* is the hostname of the process that logged the message. • *id* is an MWTM ID that uniquely identifies the process that logged the message; or in the event that two or more clients are running on the same node, connected to the same MWTM server.
Task	Task, or thread, that logged the message.
Message	Text of the message. To sort the messages alphabetically by message text, click the Message heading.

Viewing Error Messages

The System Messages: Last *number* Error Messages page shows error messages stored in the MWTM system log. These messages can be useful when diagnosing and correcting MWTM operational problems.

To access this page, click:

- **Error Messages** from the Administrative page.
- **Error** from the web page menu bar, if visible.

The Last Error Messages table contains:

Column	Description
Period (in heading)	Collection period of the table, such as `Since Server Restart`.
Timestamp (in heading)	Date and time the MWTM last updated the information on the page.
Row	Unique number identifying each entry in the table. You cannot edit this field.
Time	Date and time the message was logged. To sort the messages by time, click the Time heading.
Source	Source for the message, with the format *process.host.id*, where: • *process* is the process that logged the message. • *host* is the hostname of the process that logged the message. • *id* is an MWTM ID that uniquely identifies the process that logged the message; or in the event that two or more clients are running on the same node, connected to the same MWTM server.
Task	Task, or thread, that logged the message.
Message	Text of the message. To sort the messages alphabetically by message text, click the Message heading.

Viewing MWTM User Action Messages

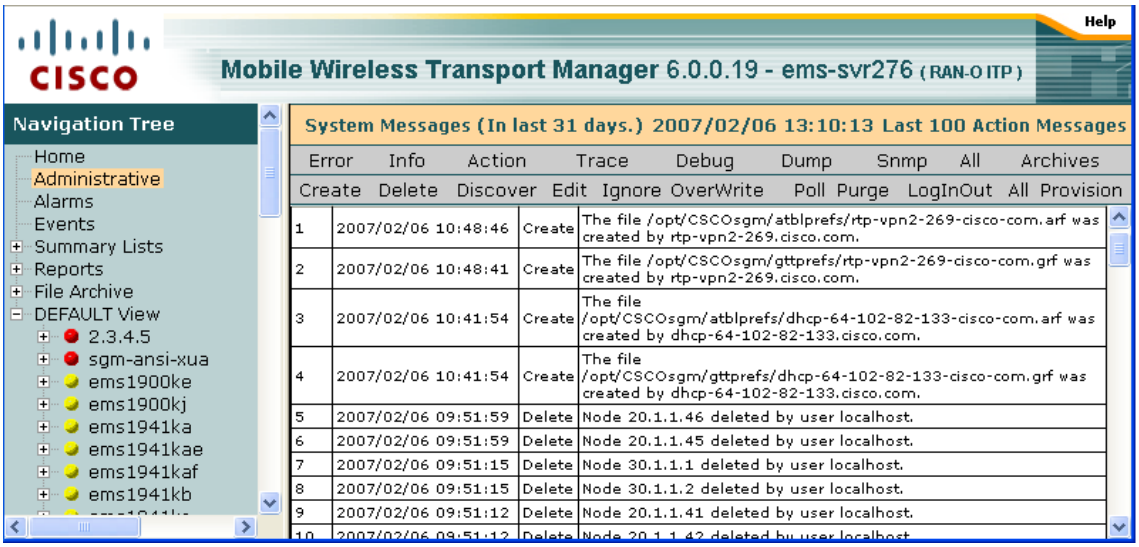
The System Messages: Last *number* Action Messages page shows user action messages stored in the MWTM system log. These messages can be useful when diagnosing and correcting MWTM operational problems, and when monitoring audit trails of user actions.

To access this page, use one of these procedures. Click:

- **User Actions** from the Administrative page.
- **Action** from the web page menu bar, if visible.

The MWTM shows the System Messages: Last *number* Action Messages page.

Figure 11-2 System Messages: Last X Action Messages Page



The System Messages: Last *number* Action Messages page has these sections:

- Last Action Messages Menu, page 11-15
- Last Action Messages Table, page 11-15

Last Action Messages Menu

By default, the MWTM shows action messages of all classes on the System Messages: Last *number* Action Messages page. However, the MWTM provides menu options that enable you to display only messages of a specific class on the page.

The Last Action Messages menu contains:

Column	Description
Create Delete Discover Edit Ignore OverWrite Poll Purge LogInOut All Provision	Opens the System Messages: Last *number* Action: specified web page: • **Create**—Opens the Create Messages web page, showing only Create action messages. • **Delete**—Opens the Delete Messages web page, showing only Delete action messages. • **Discover**—Opens the Discover Messages web page, showing only Discover action messages. • **Edit**—Opens the Edit Messages web page, showing only Edit action messages. • **Ignore**—Opens the Ignore Messages web page, showing only Ignore action messages. • **OverWrite**—Opens the OverWrite Messages web page, showing only OverWrite action messages. • **Poll**—Opens the Poll Messages web page, showing only Poll action messages. • **Purge**—Opens the Purge Messages web page, showing only Purge action messages. • **LogInOut**—Opens the LogInOut Messages web page, showing only Log in and Log out action messages. • **All**—Opens a web page that shows all action messages. • **Provision**—Opens a web page that shows all provisioning messages.

Last Action Messages Table

The Last Action Messages table contains:

Column	Description
Period (in heading)	Collection period of the table, such as `Since Server Restart`.
Timestamp (in heading)	Date and time the information on the page was last updated by the MWTM.
Row	Unique number identifying each entry in the table. You cannot edit this field.
Time	Date and time the message was logged. To sort the messages by time, click the Time heading.

Column	Description
Class	Class of the message. Possible classes are: • **Create**—Creation event, such as the creation of a seed file. • **Delete**—Deletion event, such as the deletion of an object or file. • **Discover**—Discovery event, such as Discovery beginning. • **Edit**—Edit event. A user has edited an object. • **Ignore**—Ignore event. A user has flagged a link or linkset as Ignored. • **Login**—Login event. A user has logged in to the MWTM. • **LoginDisable**—LoginDisable event. The MWTM has disabled a user's User-Based Access authentication as a result of too many failed attempts to log in to the MWTM. • **LoginFail**—LoginFail event. An attempt by a user to log in to the MWTM has failed. • **Logout**—Logout event. A user has logged out of the MWTM. • **OverWrite**—OverWrite event. An existing file, such as a seed file or route file, has been overwritten. • **Poll**—Poll event, such as an SNMP poll. • **Purge**—Purge event. A user has requested Discovery with Delete Existing Data selected, and the MWTM has deleted the existing MWTM database. To sort the messages by class, click the Class heading.
Message	Text of the message. To sort the messages alphabetically by message text, click the Message heading.

Viewing All Archived MWTM Messages

The System Message Archives: All Messages page shows all archived messages in the MWTM system logs, including:

- error
- informational
- trace
- debug
- dump
- messages
- SNMP

To access the System Message Archives: All Messages page, use one of these options. Click:

- **Message Archives** from the Administrative page.
- **Archives** from the web page menu bar, if visible.

On the System Message Archives: All Messages page, messages are archived by timestamp. Each archived file contains all MWTM system messages for a single session for the server to which you are connected, and which is currently running the MWTM server. (If you restart the server, the MWTM creates a new file.)

To view archived messages, click a timestamp. The System Messages Archive: Last *number* All Messages page appears, which shows all messages that were in the system log at the specified timestamp.

Note You might observe an entry labeled *messageLog-old* among a list of files that have timestamps in the filenames. A daily cron job creates the files with the timestamps. The cron job, which runs at midnight, searches through the *messageLog.txt* and *messageLog-old.txt* files for all entries from the past day. The *messageLog-old.txt* file exists only if the size of *messageLog.txt* exceeds the limit set by the mwtm msglogsize command. The MWTM lists the contents of *messageLog-old.txt* because it could contain important data from the day the message log file rolled over.

The Last All Messages table contains this information (without column headers):

Description	Information Displayed
Index	Message number that the MWTM assigns to the message.
Time	Date and time the message was logged.
Type	Type of message. Possible types are: • Action • Debug • Dump • Error • Info • SNMP • Trace
Source	Source for the message, with the format *process.host.id*, where: • *process* is the process that logged the message. • *host* is the hostname of the process that logged the message. • *id* is an MWTM ID that uniquely identifies the process that logged the message; or, in the event that two or more clients are running on the same node, connected to the same MWTM server.
Task	Task, or thread, that logged the message.
Message	Text of the message.

Viewing System Status Information

You can view this MWTM system status information from the Administrative page:

- Viewing System Status, page 11-18
- Viewing System Versions, page 11-18
- Viewing Connected Clients, page 11-18
- Viewing User Accounts, page 11-18

Viewing System Status

To access system status information, click **System Status** from the Administrative page. (The MWTM might take a few seconds to display this page.) This page shows the status of all MWTM servers, local clients, and processes.

Viewing System Versions

To access version information, click **System Versions** from the Administrative page. (The MWTM might take a few seconds to display this page.) This page shows version information for all MWTM servers, clients, and processes.

Viewing Connected Clients

To access connected client information, click **Connected Clients** from the Administrative page. This page lists all MWTM clients that are currently connected to the MWTM server. It also lists all Solaris and Linux users that are logged in to the MWTM server.

Viewing User Accounts

To access user account information, click **User Accounts** from the Administrative page. This page shows information about all user accounts that have been defined for the MWTM server. If no user accounts have been defined, the MWTM shows this message:

```
User Database is Empty
```

The user accounts page displays the output of the **mwtm users** command. For example:

```
/opt/CSCOsgm/bin/mwtm users

User Name Last Login                  Level Name & Number Status
-------------------------------------------------------------
User1     Wed Jan 17 14:03:13 EST 2007 System Admin    5   [Account Enabled]
User2     Unknown                     System Admin    5   [Account Enabled]
User3     Wed Jan 17 13:43:30 EST 2007 System Admin    5   [Account Enabled]

User Based Access Protection is Enabled.

Authentication type = local
```

The the **mwtm users** command output contains:

Heading	Description
User Name	The MWTM user for whom a User-Based Access account has been set up.
Last Login	Date and time the user last logged in to the MWTM.

Heading	Description
Level Name & Number	Authentication level and number for the user. Valid levels and numbers are: • Basic User, 1 • Power User, 2 • Network Operator, 3 • Network Administrator, 4 • System Administrator, 5
Status	Current status of the user's account. Valid status settings are: • **Account Enabled**—The account has been enabled and is functioning normally. • **Account Disabled**—The account has been disabled for one of these reasons: – A System Administrator disabled the account. See the "mwtm disablepass" section on page B-19 and the "mwtm disableuser" section on page B-20 for more information. – The MWTM disabled the account as a result of too many failed attempts to log in using the account. See the "mwtm badlogindisable" section on page B-9 for more information. – The MWTM disabled the account because it was inactive for too many days. See the "mwtm inactiveuserdays" section on page B-26 for more information.

Viewing System Logs

From the Administrative page, you can view:

- Viewing the Console Log, page 11-19
- Viewing the Command Log, page 11-20
- Viewing the Event Automation Log, page 11-21
- Viewing the Security Log, page 11-21
- Viewing the Install Log, page 11-22
- Viewing the Web Access Logs, page 11-22
- Viewing the Web Error Logs, page 11-22
- Viewing the Report Log, page 11-22

Viewing the Console Log

The Console Log shows the contents of the MWTM system console log file for the server to which you are connected, and which is currently running the MWTM. The console log file contains unexpected error and warning messages from the MWTM server, such as those that might occur if the MWTM server cannot start. It also provides a history of start-up messages for server processes and the time each message appeared.

To access the Console Log, click **Console Log** in the System Logs pane of the Administrative page. You can also view the Console Log with the **mwtm console** command.

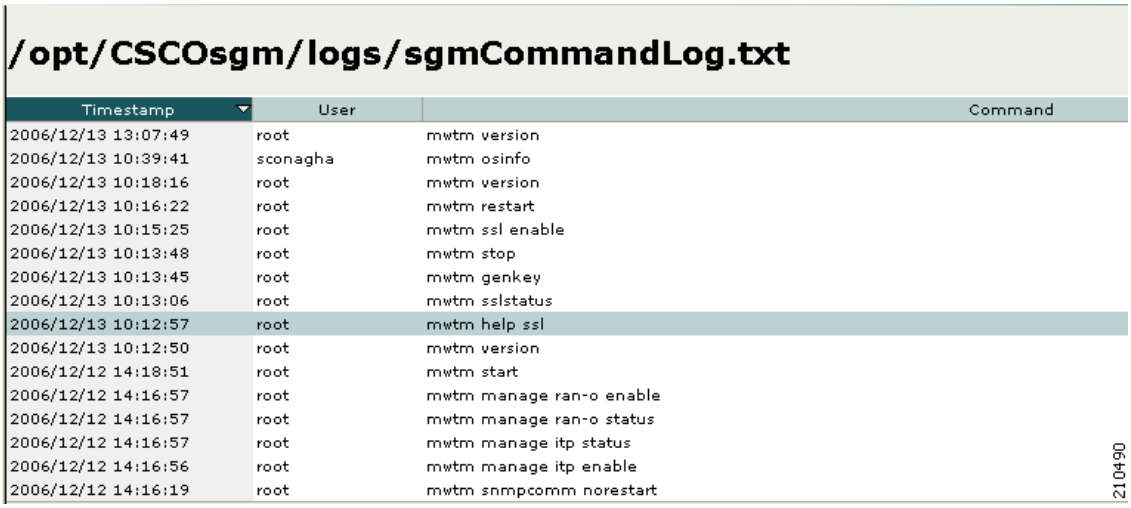
Viewing the Command Log

The Command Log shows the contents of the MWTM system command log file for the server to which you are connected, and which is currently running the MWTM server. The system command log lists all **mwtm** commands that have been entered for the MWTM server, the time each command was entered, and the user who entered the command.

To access the Command Log, click **Command Log** in the System Logs pane of the Administrative page. You can also view the Command Log with the **mwtm cmdlog** command.

The MWTM Command Log page appears.

Figure 11-3 MWTM Command Log Page



The Command Log table contains:

Column	Description
Timestamp	Date and time the command was logged. To sort the messages by time, click the Timestamp heading.
User	User who entered the command. To sort the commands by user, click the User heading.
Command	Text of the command. To sort the messages alphabetically by command text, click the Command heading.

Viewing the Event Automation Log

The Event Automation Log shows the contents of the system event automation log file for the server to which you are connected, and which is currently running the MWTM server. The system event automation log lists all messages that event automation scripts generate.

The default path and filename for the system event automation log file is */opt/CSCOsgm/logs/eventAutomationLog.txt*. If you installed the MWTM in a directory other than */opt*, then the system event automation log file is in that directory.

To access the Event Automation Log, click **Event Automation Log** in the System Logs pane of the Administrative page. You can also view the Event Automation Log with the **mwtm eventautolog** command.

Related Topic

Changing the Way the MWTM Processes Events, page 9-27

Viewing the Security Log

The Security Log shows the contents of the MWTM system security log file for the server to which you are connected, and which is currently running the MWTM server. The system security log lists:

- All security events that have occurred for the MWTM server
- The time each event occurred
- The user and command that triggered the event
- The text of any associated message

The default path and filename for the system security log file is */opt/CSCOsgm/logs/sgmSecurityLog.txt*. If you installed the MWTM in a directory other than */opt*, then the system security log file is in that directory.

To access the Security Log, click **Security Log** in the System Logs pane of the Administrative page. You can also view the Security Log with the **mwtm seclog** command.

The Last Security Entries table contains these columns:

Column	Description
Timestamp	Date and time the security event occurred. To sort the entries by time, click the Time heading.
User	User who triggered the security event. To sort the entries by user, click the **User** heading.
Message	Text of the security event message. To sort the entries alphabetically by message text, click the Message heading.
Command	Text of the command that triggered the security event. To sort the entries alphabetically by command text, click the Command heading.

Viewing the Install Log

The Install Log shows the contents of the MWTM system installation log. The installation log contains messages and other information recorded during installation, which can be useful when troubleshooting problems. The Install Log also records the installer's selections (for example, whether the installer chose to configure the MWTM to receive SNMP traps).

The default path and filename for the install log file is */opt/CSCOsgm/install/cisco_sgmsvr_install.log*. If you installed the MWTM in a directory other than */opt*, then the install log file is in that directory.

To access the Install Log, click **Install Log** in the System Logs pane of the Administrative page. You can also view the Install Log with the **mwtm installlog** command.

Viewing the Web Access Logs

The Web Access Logs page shows a list of web access log files for the server to which you are connected, and which is currently running the MWTM server. The web access log lists all system web access messages that have been logged for the MWTM server, providing an audit trail of all access to the MWTM server through the MWTM web interface.

The default path and filename for the web access log file is */opt/CSCOsgm/apache/logs/access_log*. If you installed the MWTM in a directory other than */opt*, then the web access log file is in that directory.

To access the Web Access Logs page, click **Web Access Logs** from with the System Logs pane of the Administrative page. You can also view the Web Access Logs page using the **mwtm webaccesslog** command.

Viewing the Web Error Logs

The Web Error Logs page shows a list of web error log files for the server to which you are connected, and which is currently running the MWTM server. The web server error log lists all system web error messages that have been logged for the MWTM web server. You can use the web error log to troubleshoot the source of problems that users may have encountered while navigating the MWTM web interface.

The default path and filename for the web error log file is */opt/CSCOsgm/apache/logs/error_log*. If you installed the MWTM in a directory other than */opt*, then the web error log file is in that directory.

To access the Web Error Logs page, click **Web Error Logs** in the System Logs pane of the Administrative page. You can also view the Web Error Logs page using the **mwtm weberrorlog** command.

Viewing the Report Log

The Report Log shows the message log for ITP reports for the server to which you are connected, and which is currently running the MWTM server. You can view this log to determine the beginning and finish times for report generation. The log also records errors that occurred during report generation (for example, server connection errors).

The default path and filename for the report log file is */opt/CSCOsgm/logs/sgmReportLog.txt*. If you installed the MWTM in a directory other than */opt*, then the report log file is in that directory.

To access the Report Log, click **Report Log** in the System Logs pane of the Administrative page. You can also view the Report Log with the **mwtm replog** command.

Viewing Properties

Property files for the MWTM are in the */opt/CSCOsgm/properties* directory. You can view these MWTM properties from the Administrative page.

Viewing Properties

To access the System Properties file, click **System** in the Properties pane of the Administrative page. The MWTM shows the contents of the */opt/CSCOsgm/properties/System.properties* file.

The System Properties file contains MWTM server and client properties that control various MWTM configuration parameters.

You can use MWTM commands to change these system properties:

To change this system property	Use this MWTM command
ATBLDIR	mwtm atbldir, page B-78
BADLOGIN_TRIES_ALARM	mwtm badloginalarm, page B-9
BADLOGIN_TRIES_DISABLE	mwtm badlogindisable, page B-9
GTTDIR	mwtm gttdir, page B-86
JSP_PORT	mwtm jspport, page B-29
LOGAGE	mwtm msglogage, page B-35
LOGDIR	mwtm msglogdir, page B-35
LOGSIZE	mwtm msglogsize, page B-36
LOGTIMEMODE	mwtm logtimemode, page B-31
LOG_TROUBLESHOOTING	mwtm tshootlog, page B-66
MANAGE_ITP	mwtm manage, page B-31
MANAGE_RAN-O	mwtm manage, page B-31
ROUTEDIR	mwtm routedir, page B-102
SBACKUPDIR	mwtm backupdir, page B-8
SNMPCONFFILE	mwtm snmpconf, page B-51
SSL_ENABLE	mwtm ssl, page B-59
USE_TELNET_PROXY	mwtm tnproxy, page B-64
VCS_REPOSITORY_DIR	mwtm archivedir, page B-76
WEB_PORT	mwtm webport, page B-71
WEB_BROWSER	mwtm browserpath, page B-10

Viewing Server Properties

To access the Server Properties file, click **Server** in the Properties pane of the Administrative page. The MWTM shows the contents of the */opt/CSCOsgm/properties/Server.properties* file.

The Server Properties file contains MWTM various properties that control the MWTM server.

You can use MWTM commands to change these server properties:

To change this server property	Use this MWTM command
DEMAND_POLLER_TIMELIMIT	mwtm pollertimeout, page B-39
SNMP_MAX_ROWS	mwtm snmpwalk, page B-56
UNKNOWN_AGING_TIMEOUT	mwtm unknownage, page B-66

To change poller parameters in the Server Properties file, see the "Changing MWTM Server Poller Settings" section on page 3-2.

Viewing Web Configuration Properties

To access the Web Configuration Properties file, click **WebConfig** in the Properties pane of the Administrative page. The MWTM shows the contents of the */opt/CSCOsgm/properties/WebConfig.properties* file.

The Web Configuration Properties file contains properties that control the configuration of the MWTM web interface. For example:

```
MAX_ASCII_ROWS      = 6000
MAX_HTML_ROWS       = 100

# The selectable page sizes start at MIN_SELECTABLE_PAGE_SIZE and doubles until
# the MAX_SELECTABLE_PAGE_SIZE value is reached
# (e.g. 25, 50, 100, 200, 400, 800)
MIN_SELECTABLE_PAGE_SIZE = 25
MAX_SELECTABLE_PAGE_SIZE = 800
LOG_UPDATE_INTERVAL = 300
WEB_UTIL            = percent
WEB_NAMES           = display
MAX_EV_HIST         = 15000
```

You can use the MWTM to change the web configuration properties:

Web Configuration Property	Changing Default Setting
LOG_UPDATE_INTERVAL	To control how often, in seconds, the MWTM updates certain web output, use the **mwtm weblogupdate** command. The valid range is 1 second to an unlimited number of seconds. The default value is 300 seconds (5 minutes).
MAX_ASCII_ROWS	To set the maximum number of rows for MWTM ASCII web output, such as displays of detailed debugging information, use the *mwtm maxasciirows* command. The valid range is 1 row to an unlimited number of rows. The default value is 6,000 rows.
MAX_EV_HIST	To set the maximum number of rows for MWTM to search in the event history logs, use the **mwtm maxevhist** command. The event history logs are the current and archived MWTM network status logs for status change and SNMP trap messages. The MWTM sends the results of the search to the web browser, where the results are further limited by the setting of the mwtm maxhtmlrows command. The valid range is 1 row to an unlimited number of rows. The default value is 15,000 rows.
MAX_HTML_ROWS	To set the maximum number of rows for MWTM HTML web output, such as displays of statistics reports, status change messages, or SNMP trap messages, use the **mwtm maxhtmlrows** command. This lets you select a page size (if you have not explicitly chosen a page size). Once you select a page size from any page, the MWTM remembers your preference until you delete your browser cookies. The default value is 100 rows.
MIN_SELECTABLE_PAGE_SIZE	This setting determines the minimum page size for the user to select from the Page Size drop-down menu. The page size values start with the MIN_SELECTABLE_PAGE_SIZE and double until they reach the MAX_SELECTABLE_PAGE_SIZE.
MAX_SELECTABLE_PAGE_SIZE	This setting determines the maximum page size for the user to select from the Page Size drop-down menu. The page size values start with the MIN_SELECTABLE_PAGE_SIZE and double until they reach the MAX_SELECTABLE_PAGE_SIZE.

Web Configuration Property	Changing Default Setting
WEB_NAMES	To specify whether the MWTM should show real DNS names or display names in web pages, enter the **mwtm webnames** command. To show: • The real DNS names of nodes, as discovered by the MWTM, enter **mwtm webnames real**. • Display names, enter **mwtm webnames display**. Display names are new names that you specify for nodes. This is the default setting. For more information about display names, see the "Editing Properties" section on page 6-29.
WEB_UTIL	To specify whether the MWTM should display send and receive utilization as percentages or in Erlangs in web pages, enter the **mwtm who** command. To show: • Utilization as a percentage, enter **mwtm webutil percent**. This is the default setting. • Display utilization in Erlangs (E), enter **mwtm webutil erlangs**. See Chapter 8, "Viewing RAN-O Performance and Error Data" for more information on send and receive utilization for shorthauls and backhauls. See Chapter 12, "Managing ITP Reports" for more information on send and receive utilization for linksets and links.

Each of the web configuration commands requires you to be logged in as the root user, as described in the "Becoming the Root User (Server Only)" section on page 4-2, or as a superuser, as described in the "Specifying a Super User (Server Only)" section on page 2-18.

Related Topic

Link Reports, page 12-21

Viewing Reports Properties

To access the Reports Properties file, click **Reports** in the Properties pane of the Administrative page. The MWTM shows the contents of the */opt/CSCOsgm/properties/Reports.properties* file.

The Reports Properties file contains properties that control various aspects of the reports that are available in the MWTM web interface.

You can use MWTM commands to change these reports properties:

To change this server property	Use this MWTM command
ACC_REPORTS	mwtm accstats, page B-75
GTT_REPORTS	mwtm gttstats, page B-88
LINK_REPORTS	mwtm linkstats, page B-89
MLR_REPORTS	mwtm mlrstats, page B-93
MSU_REPORTS	mwtm statreps msu, page B-112
Q752_REPORTS	mwtm q752stats, page B-99
RPT_15MIN_AGE	mwtm rep15minage, page B-43

To change this server property	Use this MWTM command
RPT_CUSTOM_AGE	mwtm repcustage, page B-100
RPT_DAILY_AGE	mwtm repdailyage, page B-43
RPT_HOURLY_AGE	mwtm rephourlyage, page B-44
RPT_IPLINKS	mwtm statreps iplinks, page B-110
RPT_MONTHLY_AGE	mwtm repmonthlyage, page B-44
RPT_NULLCAPS	mwtm statreps nullcaps, page B-113
RPT_SERVRATIO	mwtm statreps servratio, page B-114
RPT_TIMEMODE	mwtm statreps timemode, page B-115
STATS_REPORTS	mwtm statreps servratio, page B-114
XUA_REPORTS	mwtm xuastats, page B-117

Viewing Trap Forwarding Properties

To access the Trap Forwarding Properties file, click **TrapForwarding** in the Properties pane of the Administrative page. The MWTM shows the contents of the */opt/CSCOsgm/properties/TrapForwarder.properties* file.

The Trap Forwarder Properties file contains a list of the destination addresses for the trap forwarder. Enter each destination address on its own line and use this format:

SERVER*xx*=*destination_IP_address*[**:***port_number*]

The *port_number* parameter is optional.

Displaying Alarms

Displaying alarms in the web interface is essentially the same as displaying them in the MWTM client. Only minor differences exist. The Alarms table in the web interface:

- Shows only those columns that the client interface shows by default.
- Has a paging feature. See the "Using the Toolbar" section on page 11-4.
- Has a refresh interval that you can change. See the "Using the Toolbar" section on page 11-4.

For descriptions of the columns in the Alarms table, see the "Displaying Alarms" section on page 4-30.

Displaying Events

The Events table lists the events that the MWTM manages. To access the Events table of the MWTM web interface, click **Events** in the navigation tree in the left pane. The content area in the right pane shows the Events table.

Some differences exist between the web and client interface displays of the Events table. For example, the Events table in the MWTM web interface also shows archived events in addition to recent events. The MWTM web interface also shows fewer columns, has fewer buttons on the toolbar, and displays colored status balls in the Severity column.

For descriptions of the columns, see the "Event Table" section on page 9-5.

For descriptions of the tools in the toolbar, see the "Using the Toolbar" section on page 11-4.

To navigate the columns of the Events table, see Navigating Table Columns, page 5-23.

Displaying Summary Lists

Displaying Summary Lists in the web interface is essentially the same as displaying them in the MWTM client. Only minor differences exist. Clicking on an object under the Summary Lists in the web interface causes the content area to show information about the object. The content area:

- Shows only those columns that the client interface shows by default.
- Has a refresh interval that you can change. See the "Using the Toolbar" section on page 11-4.

For complete information about Summary Lists, see the "Displaying Object Windows" section on page 6-2.

Displaying Software Versions

The Software Versions table lists the software versions for each node the MWTM manages.

To access the Software Versions page:

- From the Web interface navigation tree, select **Summary Lists > Software Versions**.
- From the MWTM main window, select **View > Web > Software Versions**.

For details on navigating the columns of the Software Versions table, see Navigating Table Columns, page 5-23.

The Software Versions table contains:

Column	Description
Refresh Interval (seconds)	Refresh interval in seconds. To change the refresh interval, click **Refresh Interval (seconds)** or click the current value that appears. Then change the current value to a new one.
Last Updated	Date and time when this information on this page was last updated.
Name	Name of the node.
Node Type	Type of node.

Column	Description
Software Version	Software version used by the node.
Software Description	Full software version information.

Displaying Reports

Note If MWTM User-Based Access is enabled, only users with authentication level 4 (Network Administrator) and higher can see the Reports menu.

You can display reports primarily for ITP objects in the MWTM Web interface. An overview and a complete list and description of these reports is available in Chapter 12, "Managing ITP Reports."

Event reports are also available for both RAN-O and ITP networks, also available within the Reports menu. For details, see the "Viewing Archived Event Files on the Web" section on page 9-22 and the "Viewing the Event Metrics Report on the Web" section on page 9-23.

Displaying Objects within a View

Displaying objects within a view in the MWTM web interface is essentially the same as viewing them in the MWTM client. Only minor differences exist. The MWTM web interface:

- Shows a subset of the columns that the client interface shows.
- Has a paging feature. See the "Using the Toolbar" section on page 11-4.
- Has a refresh interval that you can change.

For details on each object type, see the "Displaying Object Windows" section on page 6-2.

Displaying RAN-O Historical Statistics

The MWTM web interface provides access to RAN-O historical statistics in the MWTM database. You can use these statistics for capacity planning and trend analysis. For example, you can generate charts:

- For a specified time range to display historical statistics for customer busy-hours.
- To show the maximum send and receive traffic over a specified time period.
- To show data on a 15-minute, daily, or hourly basis.

Using this information, you can perform detailed analysis of historical traffic utilization on the backhaul and shorthaul links to plan future facility upgrades.

Note The MWTM client provides real-time (not historical) charts depicting performance and error information occurring in real time. You use real-time statistics for troubleshooting active problem areas in your network. See the "Viewing RAN-O Performance and Error Data" section on page 8-123.

This section provides information about:

Displaying Performance Statistics

You can view performance data for a shorthaul or backhaul interface within the MWTM:

- Web interface by selecting an interface in the navigation tree and clicking the Performance tab in the right pane.
- Client interface by right-clicking an interface in the navigation tree and clicking Performance History.

Note If the CISCO-IP-RAN-BACKHAUL-MIB on the node is not compliant with the MWTM, the MWTM issues the message:

```
MIB not compliant for reports
```

Install a version of IOS software on the node that is compatible with the MWTM. For a list of compatible IOS software, from the MWTM:

- Web interface, choose **Administrative > RAN-O OS README**.
- Client interface, choose **View > Web > Administrative**; then click **RAN-O OS README**.

The Performance tab shows one or more charts depending on whether you selected a shorthaul or a backhaul interface. These charts depict send and receive rates of optimized IP traffic over a specified time range. The charts display the traffic in bits per second. Each data series shows maximum, minimum, and average rates of optimized traffic.

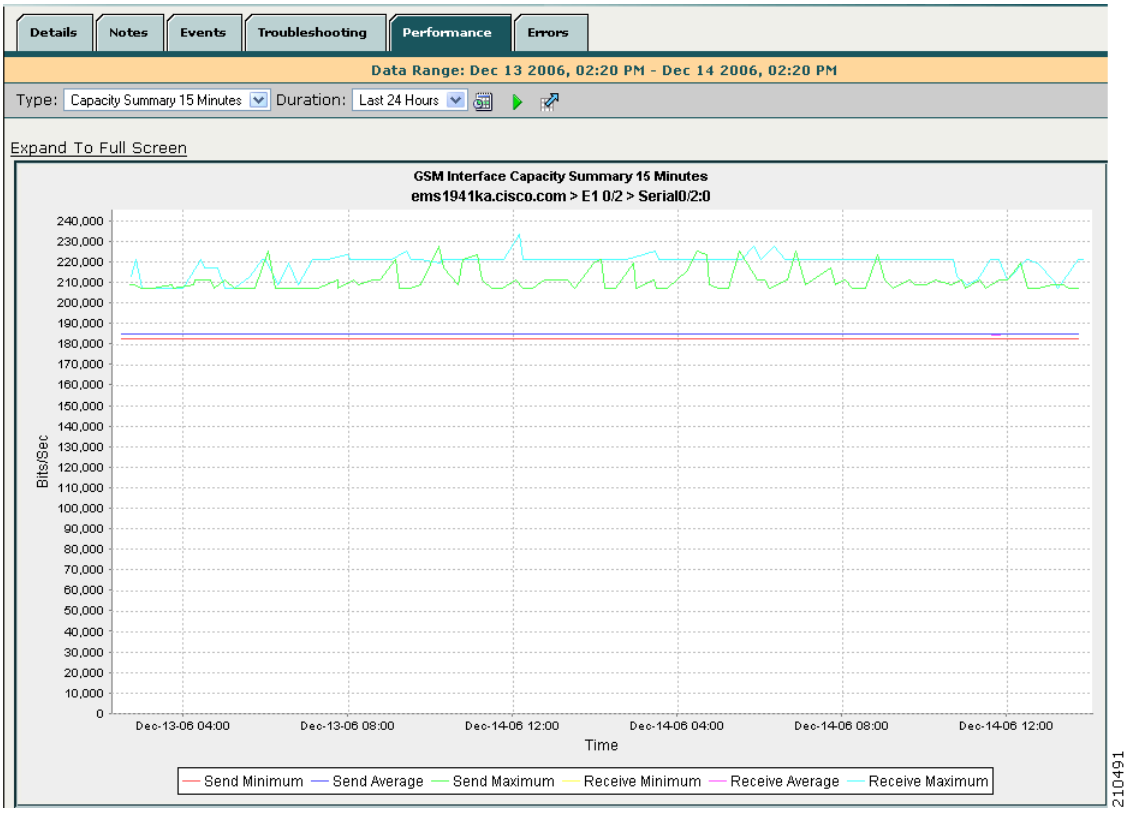
The Performance tab for a backhaul interface shows total rates for GSM and UMTS traffic, including total error rates.

This section provides information about:

Displaying Shorthaul Performance Statistics

The Performance tab for a shorthaul interface shows the maximum, minimum, and average rates for send and receive traffic.

Figure 11-4 Example of Performance Tab for Shorthaul Interface



The Performance tab for a shorthaul interface contains:

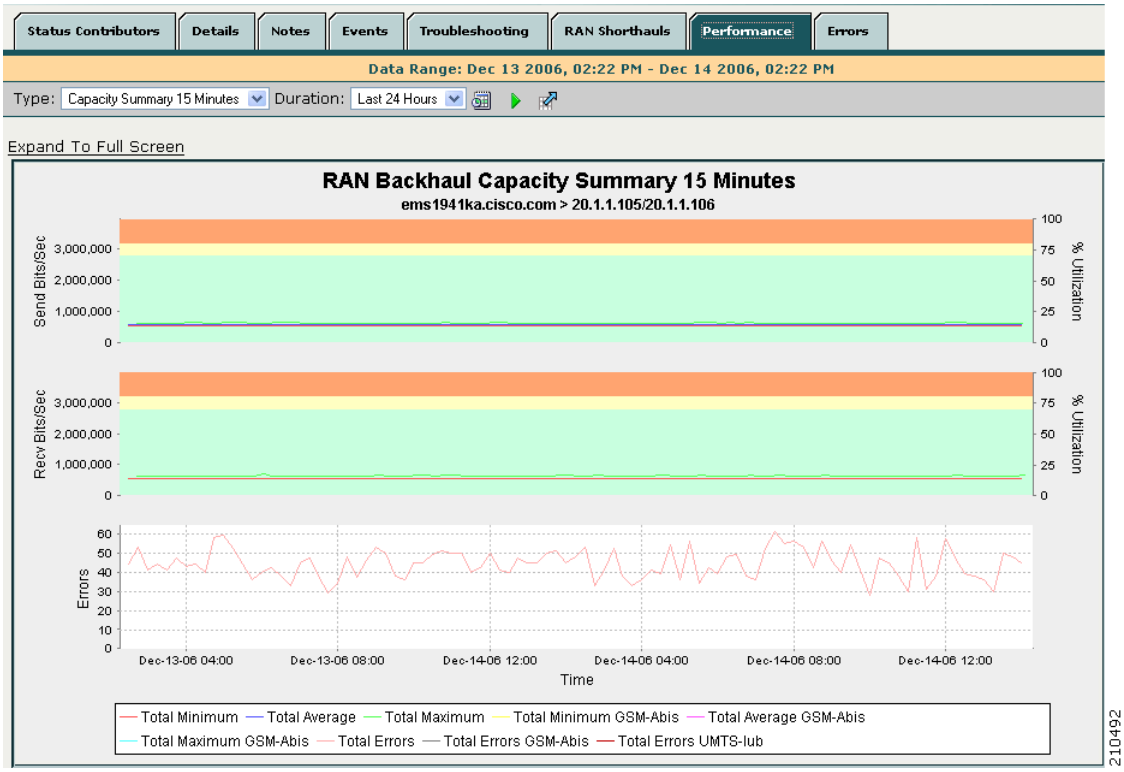
GUI Elements	Description
Toolbar	Provides functions to select a report type and duration, and to export the report to a CSV file. See the "Using the Toolbar" section on page 11-4.
Type: Capacity Summary	A comprehensive summary of minimum, average, and maximum capacity statistics for send and receive traffic on the RAN shorthaul. You can choose from 15-minute, hourly, or daily data report types.
Expand to Full Screen	Text link that shows a chart in a new, full-screen window for easier viewing.
Bits/Sec	Y-axis label that shows traffic rate in bits per second. The Y axis automatically scales to the interface speed. **Note** If no data exists between any two data points, the graph displays a color-coded vertical bar to show the period for which no data is available.

GUI Elements	Description
Time	X-axis label that shows a historical time scale and the server time zone.
Legend	Color-coded legend that shows labels for traffic rates.

Displaying Backhaul Performance Statistics

The Performance tab for a backhaul interface shows minimum, average, and maximum traffic rates for send and receive traffic. You can also determine the percentage of backhaul utilization that various traffic types occupy. Error rates appear, too.

Figure 11-5 Example of Performance Tab for Backhaul Interface



The Performance tab for a backhaul interface contains:

GUI Elements	Description
Toolbar	Provides functions to select a report type and duration, customize the display of associated shorthauls, and export the report to a CSV file. See the "Using the Toolbar" section on page 11-4.
Type: Capacity Summary	A comprehensive summary of minimum, average, and maximum capacity statistics for total (GSM-Abis and UMTS-Iub) traffic, total GSM-Abis traffic, and total UMTS-Iub traffic. You can choose from 15-minute, hourly, or daily data report types. Statistics appear in three fully expandable charts: • **Top**—Capacity statistics for send traffic rates, including percentage of backhaul utilization (right side of chart). • **Middle**—Capacity statistics for receive traffic rates, including percentage of backhaul utilization (right side of chart). • **Bottom**—Error counts for send and receive traffic.
Type: Capacity	Depending on your selection, the minimum, average, or maximum capacity statistics for the backhaul interface. You can choose from 15-minute, hourly, or daily data report types. Send and receive rate statistics appear in separate panes. Each pane shows two fully expandable charts: • **Top**—Shows total (GSM-Abis and UMTS-Iub), total GSM-Abis, and total UMTS-Iub traffic rates, including percentage of backhaul utilization (right side of chart). • **Bottom**—Shows traffic rates for each shorthaul interface that belongs to the backhaul.
Expand to Full Screen	Text link that shows a chart in a new, full-screen window for easier viewing.
Bits/Sec	Primary Y-axis label (left side of chart) that shows traffic rate in bits per second. The Y axis automatically scales to the User Bandwidth. See the"Editing Properties for a RAN-O Backhaul" section on page 6-33. **Note** If no data exists between any two data points, the graph displays a color-coded vertical bar to show the period for which no data is available.
% Utilization	Secondary Y-axis label (right side of chart) that shows the backhaul utilization as a percentage of the User Bandwidth. The chart background has three horizontal bars that are color-coded to indicate these thresholds: • **Overloaded**—Top portion of chart. • **Warning**—Middle portion of chart. • **Acceptable**—Bottom portion of chart. For definitions of these thresholds, see the "Threshold Information (RAN-O Only)" section on page 8-42. To change the threshold settings, see the "Editing Properties for a RAN-O Backhaul" section on page 6-33.

GUI Elements	Description
Time	X-axis label that shows a user-specified, historical time scale and the server time zone.
Legend	Color-coded legend that shows labels for traffic and error rates.

Displaying Error Statistics

You can view error data for a shorthaul or backhaul interface within the MWTM:

- Web interface by selecting an interface in the navigation tree and clicking the Errors tab in the content area.
- Client by right-clicking an interface in the navigation tree and clicking **Error History**.

Note If the CISCO-IP-RAN-BACKHAUL-MIB on the node is not compliant with the MWTM, the MWTM issues the message:

```
MIB not compliant for reports
```

Install a version of IOS software on the node that is compatible with the MWTM. For a list of compatible IOS software, from the MWTM:

- Web interface, choose **Administrative > RAN-O OS README**.
- Client interface, choose **View > Web > Administrative**; then click **RAN-O OS README**.

You view error data for a shorthaul or backhaul interface by selecting the interface in the navigation tree and clicking the Errors tab in the content area. The Errors tab shows total error counts and average error rates in table and chart format.

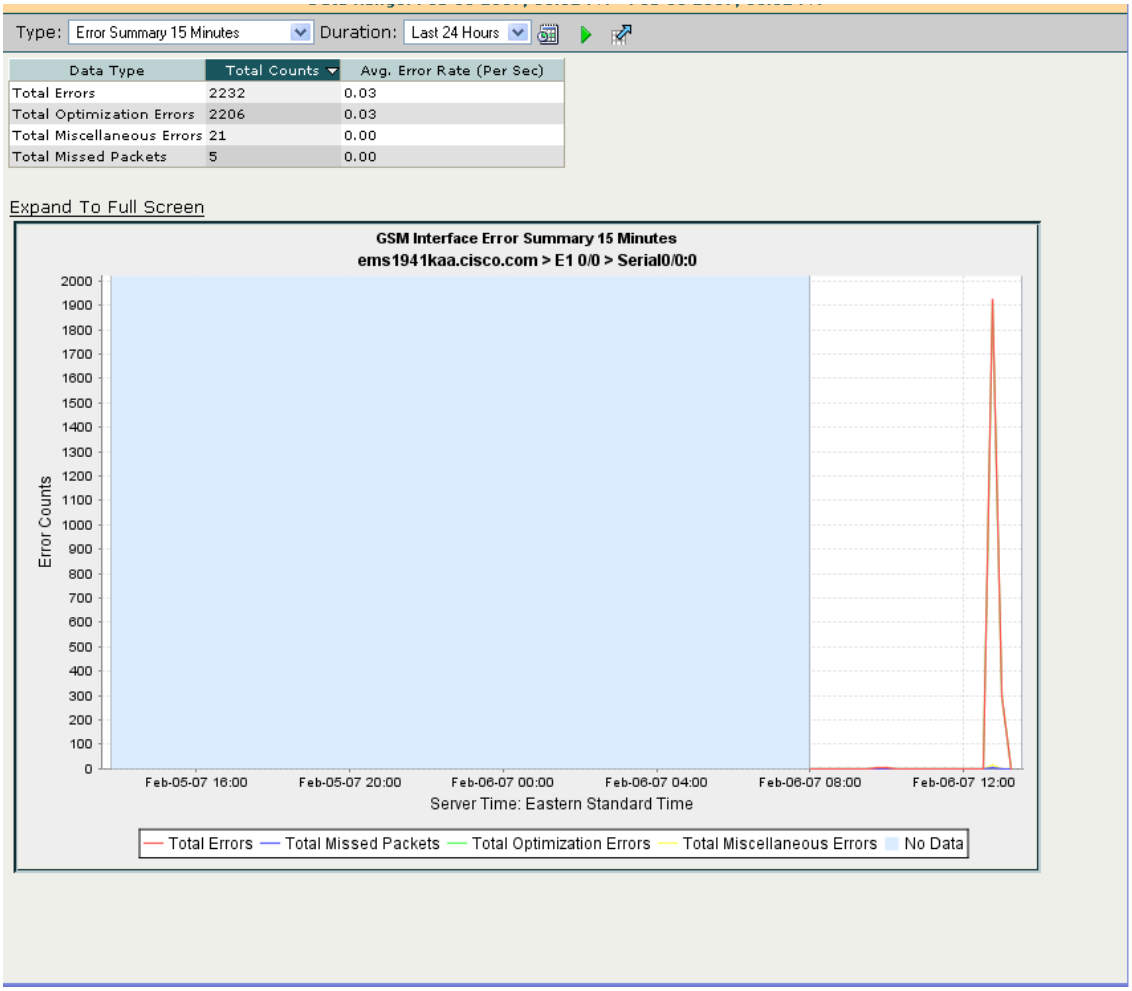
This section provides information about:

- Displaying Shorthaul Error Statistics, page 11-35
- Displaying Backhaul Error Statistics, page 11-37

Displaying Shorthaul Error Statistics

The Errors tab for a shorthaul interface shows a single table and a chart that shows the error rates and counts for different types of GSM-Abis and UMTS-Iub errors.

Figure 11-6 Example of Errors Tab for Shorthaul Interface



The Errors tab for a shorthaul interface contains:

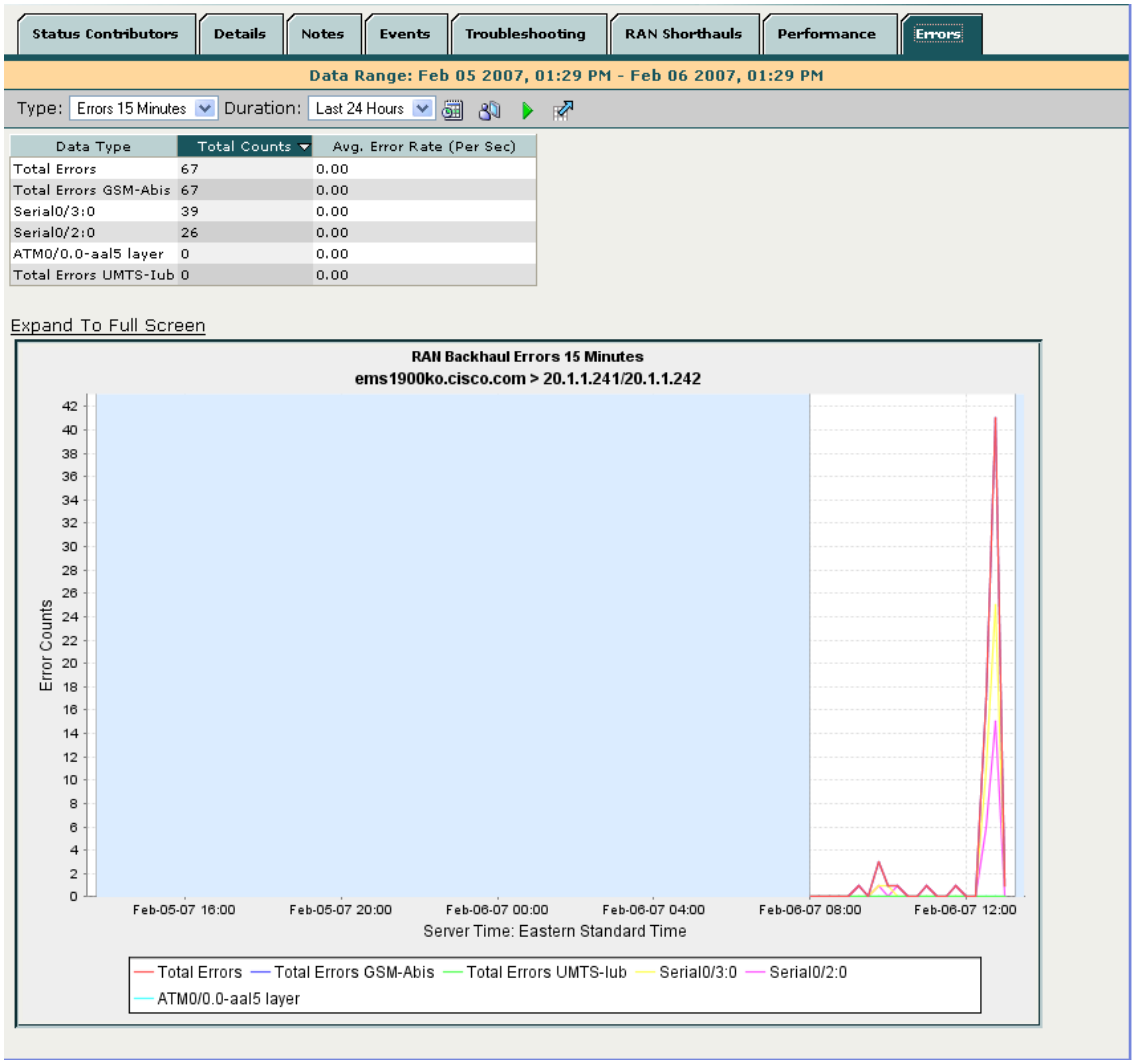
GUI Elements	Description
Toolbar	Provides functions to select a report type and duration, and to export the report to a CSV file. See the "Using the Toolbar" section on page 11-4.
Type: Errors Summary	A comprehensive summary of total error counts and average error rates for optimization, missed-packet, and miscellaneous errors for the selected shorthaul. You can choose from 15-minute, hourly, or daily data report types. Statistics appear in table and chart format.

GUI Elements	Description
Type: Errors	Depending on your selection, the optimization, missed packet, or miscellaneous errors for the shorthaul interface. You can choose from 15-minute, hourly, or daily data report types. Statistics appear in table and chart format. For definitions of these error types, see the: • "Optimization Failures" section on page 8-132 • "Miscellaneous" section on page 8-133 • "Missed Packets" section on page 8-134
Table	Table that shows these columns: • **Data type**—Category of error for which statistics are gathered. Types include optimization, missed packets, and miscellaneous errors. • **Total Counts**—Total error count for each type of error. • *Avg. Error Rate (Per Sec)*—The calculated average error rate per second for each error type over the duration of the data range that you selected. **Note** You can sort the contents of the Total Counts and Avg. Error Rate (Per Sec) columns in ascending or descending order by clicking the column heading.
Expand to Full Screen	Text link that shows a chart in a new, full-screen window for easier viewing.
Error Counts	Y-axis label on left side of chart that shows traffic rate in bits per second. **Note** If no data exists between any two data points, the graph displays a color-coded vertical bar to show the period for which no data is available.
Time	X-axis label that shows a user-specified, historical time scale and the server time zone.
Legend	Color-coded legend that shows labels for traffic and error rates.

Displaying Backhaul Error Statistics

The Errors tab for a RAN backhaul interface shows a single table and a chart that shows the error rates and counts for different interfaces belonging to the backhaul.

Figure 11-7 Example of Errors Tab for Backhaul Interface



The Errors tab for a backhaul interface contains:

GUI Elements	Description
Toolbar	Provides functions to select a report type and duration, customize the display of associated shorthauls, and export the report to a CSV file. See the "Using the Toolbar" section on page 11-4.
Table	Table that shows these columns: • **Data type**—Category of error for which statistics are gathered. Types include the errors for each shorthaul interface in the backhaul, total GSM-Abis errors, total UMTS-Iub errors, and the combined total of both GSM and UMTS errors. • **Total Counts**—Total error count for each type of error. • **Avg. Error Rate (Per Sec)**—The calculated average error rate per second for each error type over the duration of the data range that you selected. **Note** You can sort the contents of the Total Counts and Avg. Error Rate (Per Sec) columns in ascending or descending order by clicking the column heading.
Expand to Full Screen	Text link that shows a chart in a new, full-screen window for easier viewing.
Error Counts	Y-axis label on left side of chart that shows traffic rate in bits per second.
Time	X-axis label that shows a user-specified, historical time scale and the server time zone.
Legend	Color-coded legend that shows labels for traffic and error rates.

Generating RAN Data Export Files

You can easily generate historical reports for RAN backhauls and shorthauls in the web interface. You can then export this data to a report with comma-separated values (CSV file). You can save this file to disk or open it with an application that you choose (for example, Microsoft Excel).

To export RAN data:

Step 1 Select a RAN backhaul or shorthaul in the navigation tree of the web interface.

Step 2 Click the Performance or Errors tab in the right pane.

Step 3 Generate a report.

Step 4 Click the Export the report as a CSV file icon.