CHAPTER 12

Managing Reports

At scheduled intervals, you can configure the Cisco Mobile Wireless Transport Manager (MWTM) to gather critical information from network objects that it detects. The MWTM uses that information to calculate statistics (accounting statistics, inventory statistics, and so on) and generates reports based on those statistics.

This chapter contains:

Generating Reports

Using CLI commands, there are two types of reports that you can generate:

- Continuous reports that use cron jobs to run at specified intervals. You generate these reports with the "mwtm statreps" commands (see Viewing Enabled and Disabled Status for Continuous Reports on the Web, page 12-2). Once you generate a continuous report, it will run at the specified intervals until you disable it with the appropriate CLI command.
- Custom reports that you create one-time on demand. You generate these reports with the "mwtm stats" commands (see Generating Custom Statistics Reports, page 12-3).

Both types of reports contain the same data.

To generate reports:

Step 1 Decide:

a. What type of report you want to generate: continuous or custom;

b. What specific report you want to generate data for (for example, GTT statistics, MLR statistics, application server statistics, etc.).

Step 2 Log in as the root user, as described in Starting the MWTM Client, page 4-2, or as a superuser, as described in Specifying a Super User (Server Only), page 2-20.

Step 3 Enter:

cd /opt/CSCOsgm/bin

Step 4 Enter the CLI command that starts the report generation. For example, to generate continuous GTT statistics, enter:

./mwtm statreps gtt

To determine which CLI command generates which report, see Viewing Enabled and Disabled Status for Continuous Reports on the Web, page 12-2 or Generating Custom Statistics Reports, page 12-3.

Step 5 (Optional) View the generated report using the MWTM web interface. For example, to view a continuous GTT statistics report, open the web interface and navigate to Reports > Accounting > GTT. For details, see Viewing Reports, page 12-6.

Viewing Enabled and Disabled Status for Continuous Reports on the Web

The main Reports page on the MWTM web interface shows all continuous reports and whether or not they are being generated. To access the main Reports page:

Step 1 Do one of the following:

- In a Web browser, launch the MWTM Web interface (see Accessing the MWTM Web Interface, page 11-2). In the navigation tree, click **Reports**.
- From the MWTM client, in the MWTM main window, choose **View** > **Web** > **Reports**.

The Reports page in the content area shows the Report Type and the Data Collection Status (enabled or disabled).

Figure 12-1 Report Parameters and Timers

Step 2 Click the plus (+) sign to expand a Report Type. If you have generated a report (using the associated CLI command) a green status ball and the word "Enabled" appear in the Data Collection Status column. If you have not generated a report, a red status ball and the word "Disabled" appears.

Note Clicking a Report Type takes you directly to the report data page.

To see which CLI command enables or disables a report, click the Disabled or Enabled link (if available). A popup window appears with the associated command. As the root user, you can log in to the MWTM server and run the specified command to enable the report.

Note For more descriptions of CLI commands, see Appendix B, "Command Reference."

Generating Custom Statistics Reports

In the MWTM, you can use custom CLI commands to create summary reports of custom statistics and open them as an export file. To create a custom report:

Step 1 Log in as the root user, as described in Starting the MWTM Client, page 4-2, or as a superuser, as described in Specifying a Super User (Server Only), page 2-20.

Step 2 Enter:

```
# cd /opt/CSCOsgm/bin
```

Step 3 Based on the type of custom report you want to generate, enter one of these commands to enable the report:

Note For complete information about these commands, see Appendix B, "Command Reference."

Custom Report	Command
Application server and application server processes custom statistics	mwtm xuastats
GTT accounting statistics	mwtm gttstats
Link and linkset summary	mwtm linkstats
MLR statistics	mwtm mlrstats
MTP3 accounting statistics	mwtm accstats
MTP3 event summary	mwtm mtpevents
Q.752 statistics	mwtm q752stats

For example, if you entered the command:

```
# ./mwtm accstats mwtm-2600a.cisco.com test1 -sno
```

The MWTM generates these reports:

```
mwtmAccStats.custom.test1.2004-02-13:15.csv.zip
mwtmAccStats.custom.test1.2004-02-13:15.csv.zip
```

Step 4 (Optional) To include or exclude specific nodes, signaling points or linksets in the report, see Locating Stored ITP Reports, page 12-62.

Step 5 (First-time users only) If this is your first time using the **mwtm accstats**, **mwtm gttstats**, **mwtm mlrstats**, **mwtm mtpevents**, **mwtm q752stats**, or **mwtm xuastats** command to enable a report, you must enter the command one more time. The:

- First entry gets the first set of raw data.
- Second entry begins calculating useful accounting statistics and, if the data being collected appears valid, begins generating the report.

or

If this is your first time using the **mwtm linkstats** command to enable a report, you must enter the command two more times. The:

- First entry gets the first set of raw data.
- Second entry begins calculating useful link and linkset statistics.
- Third entry continues to calculate statistics, calculates long-term averages, and, if the data being collected appears to be valid, begins generating the report.

Thereafter, you need only enter these commands once to enable the report.

Step 6 (Optional) You can automate custom report generation using crontab. For example, to run custom MTP3 accounting statistics once per hour, enter:

```
00 * * * *  /opt/CSCOsgm/bin/mwtm accstats quiet
```

or, to run custom link statistics every 30 minutes, enter:

```
00,30 * * * *  /opt/CSCOsgm/bin/mwtm linkstats quiet
```

Step 7 You can view custom reports on the MWTM Web interface under **Reports > File Archive > Custom**. Click on the respective link in the View column to see the data in HTML, or click on a .zip file to see the data in .csv format.

Note You can only view Q.752 reports in .csv format.

The MWTM also stores custom reports in the */custom* directory (for details, see Locating Stored ITP Reports, page 12-62.)

Including or Excluding Specified Objects in ITP Reports

You can include or exclude specific nodes, signaling points, or linksets in ITP reports by creating user-defined files. The nodes, signaling points, and/or linksets that you specify in these files will be included or excluded from enabled MWTM statistics reports and in custom reports enabled with the **default** keyword (or no *node-list* keyword at all), which include:

Command	Filename[1]
mwtm linkstats	nodes.include.linkstats or nodes.include
	nodes.exclude.linkstats or nodes.exclude
	linksets.include.linkstats or linkstats.include
	linksets.exclude.linkstats or linkstats.exclude

Command	Filename[1]
mwtm q752stats	nodes.include.q752stats or nodes.include
	nodes.exclude.q752stats or nodes.exclude
	linksets.include.q752stats or linkstats.include
	linksets.exclude.q752stats or linkstats.exclude
mwtm accstats	nodes.include.accstats or nodes.include
	nodes.exclude.accstats or nodes.exclude
	linksets.include.accstats or linkstats.include
	linksets.exclude.accstats or linkstats.exclude
	filter.include.accstats or filter.include[2]
mwtm gttstats	nodes.include.gttstats or nodes.include
	nodes.exclude.gttstats or nodes.exclude
	linksets.include.gttstats or linkstats.include
	linksets.exclude.gttstats or linkstats.exclude
	filter.include.gttstats or filter.include[3]
mwtm mtpevents	nodes.include.mtpevents or nodes.include
	nodes.exclude.mtpevents or nodes.exclude
mwtm mlrstats	nodes.include.mlrstats or nodes.include
	nodes.exclude.mlrstats or nodes.exclude
mwtm xuastats	nodes.include.xuastats or nodes.include
	nodes.exclude.xuastats or nodes.exclude

1. Files on the command line override system files. For example, nodes.include.accstats overrides nodes.include.
2. Format is opc:dpc (originating point code and destination point code).
3. Format is gta:sel (global title address and selector).

Note The MWTM processes the include files first, then the exclude files.

When creating user-defined files, remember that if you installed the MWTM in:

- The default directory, */opt*, then the user-defined file resides in */opt/CSCOsgm/reports/etc/<user-defined file>*.

  A different directory, or if you moved the report files directory using the **mwtm repdir** command, then the */reports/etc/<user-defined file>* resides in that directory.
- Wildcard matching is not supported.
- If a node, signaling point, or linkset appears in both the *include* file and the *exclude* file, it is excluded. That is, excluding an object overrides including the same object.
- If you specify a special *include* file on the **mwtm accstats**, **mwtm gttstats**, **mwtm linkstats**, **mwtm mlrstats**, **mwtm mtpevents**, **mwtm q752stats**, or **mwtm xuastats** command, the MWTM ignores the *include* or *exclude* file.

When creating a *nodes.include* or *nodes.exclude* file:

Each line in the file must contain a single node name, or node name and signaling point name, separated by a colon (**:**) that matches exactly the real, fully qualified name of the node; for example:

```
mwtm-75-59a.cisco.com
mwtm-26-51a.cisco.com
```

To include a specific signaling point, specify the node name and signaling point:

```
mwtm-75-59a.cisco.com;net0
mwtm-26-51a.cisco.com;net0
```

When creating a *linksets.include* or *linksets.exclude* file:

Each line in the file must contain a single linkset name that matches exactly the real, fully qualified linkset name of the linkset, including the node name and signaling point name; for example:

```
mwtm-75-59a.cisco.com;net0:linkset2
mwtm-26-51a.cisco.com;net0:linkset1
```

When creating a *filter.include* file:

Each line in the file must contain a single originating point code and destination point code (for accounting statistics) that matches the current point code format; or a single phone number and selector name (for GTT statistics); for example:

```
1.2.3:5.6.7
8882214040:Selector_1
```

Viewing Reports

Once you generate reports using the CLI commands, you can view them using the MWTM web interface. You can view reports for all objects of a specific type (for example, all link reports for all links) or, you can view reports for a specific object (for example, all link reports for a specific link).

You can access reports in the MWTM web interface through these categories:

Category	Report Type	Related Content
Reports > Statistics	AS	Application Server Reports, page 12-9
	ASP	Application Server Process Reports, page 12-12
	Events	The event metrics reports are applicable for RAN-O and ITP networks. You can find information on event metrics reports in the “Managing Events” chapter (see Viewing the Event Metrics Report on the Web, page 9-31).
	Link	Link Reports, page 12-18
	Linkset	Linkset Reports, page 12-23
	MLR	MLR Reports, page 12-27
	MSU Rates	MSU Rates Reports, page 12-33
	RAN	RAN Reports, page 12-34

Category	Report Type	Related Content
Reports > Accounting	GTT	GTT Accounting Reports, page 12-41
	MTP3	MTP3 Accounting Reports, page 12-42
	AS/ASP	AS/ASP Accounting Reports, page 12-44
File Archive > Events	N/A	Archived event reports are applicable for RAN-O and ITP networks. You can find information on archived event reports in the "Managing Events" chapter (see Viewing Archived Event Files on the Web, page 9-30).
File Archive > Reports	Custom	Custom Archived Reports, page 12-46
	Daily	Daily Archived Reports, page 12-49
	Hourly	Hourly Archived Reports, page 12-49
	Rolling	Rolling Archived Reports, page 12-49
	AS	Application Server Archived Reports, page 12-50
	ASP	Application Server Process Archived Reports, page 12-51
	GTT	GTT Accounting Archived Reports, page 12-52
	Link	Link Archived Reports, page 12-52
	Linkset	Linkset Archived Reports, page 12-53
	MLR	Daily MLR Statistics Archived Reports, page 12-57
	MSU	MSU Archived Reports, page 12-54
	MTP3/AS	MTP3/AS Archived Reports, page 12-55
	Point Codes	Point Codes Archived Reports, page 12-59
	Q752	Q.752 Hourly Archived Reports, page 12-59

Note File Archive reports contain the most data. Accounting and statistics reports contain a subset of the same data.

To view a Web report:

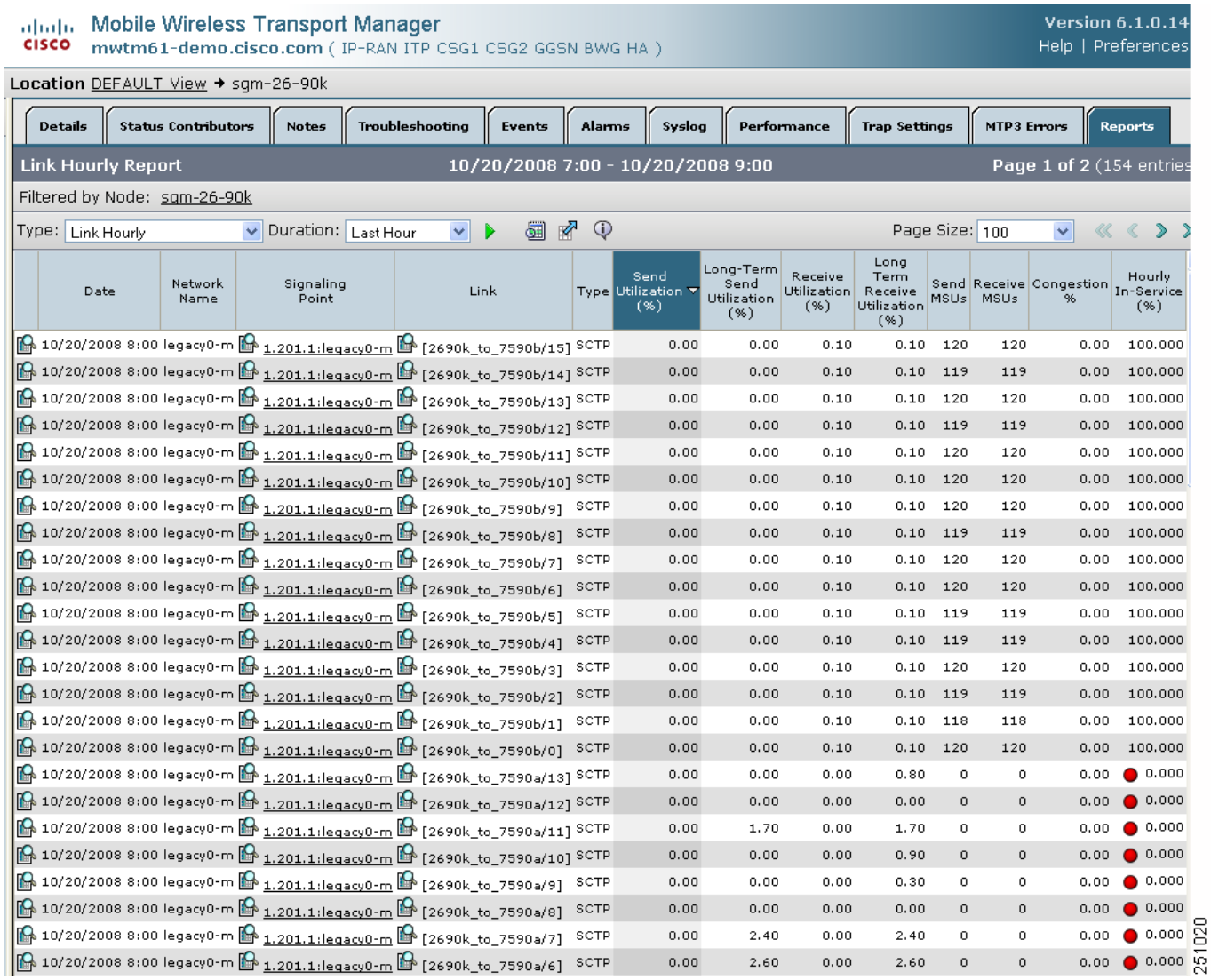
Step 1 For all objects of a specified type:

- From the MWTM web navigation tree, in **Reports** or **File Archive**, click the type of report you want to view in the web navigation tree; for example, if you want to view current link reports, select **Reports > Statistics > Link**. All link reports appear.

For a single object of a specified type do one of the following. From the MWTM:

- Web navigation tree, in **DEFAULT View**, click a node or drill down to click an object in a node. In the content area in the right pane, click the **Reports** tab. Reports appear for the active object only.
- Client, right-click an object and click **Latest Reports**. The Reports tab in the MWTM web interface opens for the active object only.

Figure 12-2 MWTM Web Interface—Reports



Note In the MWTM web interface, if you do not enable data collection on the active report, a red ball and the words `Data Collection Disabled` appear next to the report title. Click the **Data Collection Disabled** link to see which command enables the report.

Step 2 Choose the **Type** and **Duration** from the drop-down lists; for example, if you wanted to view hourly link reports for the last 12 hours, choose **Link Hourly** from the Type list and **Last 12 Hours** from the Duration list.

Step 3 (Optional) For most Statistics and Accounting reports, to customize the date or time range (or both) click the Customize icon.

Step 4 Click the green arrow to run the report. If you change the Type or Duration, an information message appears:

```
Click the green arrow to show the selected report.
```

Step 5 To disable this error message, click **Hide Message**. To display the message again, click the **Information** icon.

Step 6 (Optional) For Statistics and Accounting reports, to export the report as a *.csv* file, click the **Export** icon. For detailed information on content within exported reports, see:

ftp://ftp-eng.cisco.com/ftp/mwtm/docs/README-ExportReports.txt

Note For more details on using the MWTM web interface, see Chapter 11, "Accessing Data from the Web Interface."

Once you open a report, you can drill down to:

- See raw data for an object (helpful in diagnosing problems)—Click the first **Filter** icon located at the beginning of a row, next to the Date column.
- Drill down under an object—Click the **Filter** icon located on the left of the object. Drilling down shows objects beneath other objects.

Note To navigate to the Details tab for an object, click the underlined object in the report; for example, to go to the Details tab for a node, click the underlined node in the reports table.

Tip For details on web toolbars and icons, see Using the Toolbar, page 11-6.

Viewing Statistics Reports

You can view any of the following statistics reports:

Application Server Reports

The xUA statistics encompass Message Transfer Part 3 User Adaptation (M3UA) and Signaling Connection Control Part User Adaptation (SUA). xUA connects application servers to SS7 networks.

You can view summary reports of hourly and daily application server statistics. You can also export the reports.

This section covers:

Hourly Application Server Reports

You can view hourly summaries of application server statistics for all application servers that the MWTM detects for the specified date and hour range. The AS Hourly Report page shows summary reports of hourly application server statistics by date and hour.

The AS Hourly Report table is sorted based on the information in the Packets From MTP3 column; however, you can sort the table based on the information in one of the other columns (see Navigating Table Columns, page 5-24).

Note If you do not enable data collection on the active report, a red ball and the words `Data Collection Disabled` appear next to the report title. Click the **Data Collection Disabled** link to see which command enables the report.

If a statistics calculation results in an undefined value, such as a number divided by zero (0), or an undefined number, based on the configuration, then `MathError` appears in the field.

Field or Column	Description
Date	Date of the report.
Node	Name of the node for the application server.
Network Name	Name of the network for the application server.
Signaling Point	Name of the signaling point for the application server.
AS	Name of the application server.
Packets From MTP3	Total number of packets that the application server received, sent from the MTP3 layer.
Packets To ASPs	Total number of packets that the application server sent to the application server processes.

Daily Application Server Reports

You can view a daily summary of statistics for all application servers that the MWTM detects for a specified date range. The AS Daily Report page shows summary reports of daily application server statistics that are archived by date and hour.

The AS Daily Report table is sorted based on the information in the Packets From MTP3 column; however, you can sort the table based on the information in one of the other columns (see Navigating Table Columns, page 5-24).

Note If you do not enable data collection on the active report, a red ball and the words `Data Collection Disabled` appear next to the report title. Click the **Data Collection Disabled** link to see which command enables the report.

If a statistics calculation results in an undefined value, such as a number divided by zero (0), or an undefined number, based on the configuration, then `MathError` appears in the field.

Field or Column	Description
Date	Date of the report.
Node	Name of the node for the application server.
Network Name	Name of the network for the application server.
Signaling Point	Name of the signaling point for the application server.
AS	Name of the application server.
Packets From MTP3	Total number of packets that the application server receives from the MTP3 layer for the specified date.
Peak From MTP3	Highest hourly Packets From MTP3 for the application server for the specified date.
Peak From Hour	Hour in which the Peak From MTP3 for the application server occurred for the specified date. Click the hour to see the AS Hourly Report for the chosen application server and hour.
Packets To ASPs	Total number of packets that the application server sent to the application server processes for the specified date.
Peak To ASPs	Highest hourly Packets To ASPs for the application server for the specified date.
Peak To Hour	Hour in which the Peak To ASPs for the application server occurred for the specified date. Click the hour to see the AS Hourly Report for the chosen application server and hour.

Daily Application Server Peaks Reports

You can view an application server statistics Peaks Report to see peak values for each day and the hour in which each peak value occurred. The AS Peaks Daily Report page shows summary reports of daily application server peak statistics by date and hour.

The AS Peaks Daily Report table is sorted based on the information in the Peak From MTP3 column; however, you can sort the table based on the information in one of the other columns (see Navigating Table Columns, page 5-24).

Note If you do not enable data collection on the active report, a red ball and the words `Data Collection Disabled` appears next to the report title. Click the **Data Collection Disabled** link to see which command enables the report.

If a statistics calculation results in an undefined value, such as a number divided by zero (0), or an undefined number, based on the configuration, then `MathError` appears in the field.

Field or Column	Description
Date	Date of the report.
Node	Name of the node for the application server.
Network Name	Name of the network for the application server.
Signaling Point	Name of the signaling point for the application server.
AS	Name of the application server that recorded the peak value.
Peak From MTP3	Highest hourly Packets From MTP3 for the application server for the last 30 days.
Peak From Hour	Hour in which the Peak From MTP3 for the application server occurred. Click the hour to see the AS Hourly Report for the chosen application server and hour.
Peak To ASPs	Highest hourly Packets To ASPs for the application server for the last 30 days.
Peak To Hour	Hour in which the Peak To ASPs for the application server occurred. Click the hour to see the AS Hourly Report for the chosen application server and hour.

Application Server Process Reports

You can view summary reports of hourly and daily xUA statistics. You can also export the reports.

The xUA statistics encompass Message Transfer Part 3 User Adaptation (M3UA) and Signalling Connection Control Part User Adaptation (SUA). xUA connects application servers to SS7 networks.

This section covers:

- Hourly Application Server Process Reports, page 12-12
- Daily Application Server Process Reports, page 12-13
- Daily Application Server Process Peaks Reports, page 12-15
- Daily Application Server Process MTP3 Peaks Reports, page 12-17

Hourly Application Server Process Reports

You can view hourly summaries of statistics for all application server processes that the MWTM detects on the specified date and hour. The ASP Hourly Report page shows summary reports of hourly application server process statistics by date and hour.

The ASP Hourly Report table is sorted based on the information in the Packets From ASP column; however, you can sort the table based on the information in one of the other columns (see Navigating Table Columns, page 5-24).

Note If you do not enable data collection on the active report, a red ball and the words `Data Collection Disabled` appear next to the report title. Click the **Data Collection Disabled** link to see which command enables the report.

If a statistics calculation results in an undefined value, such as a number divided by zero (0), or an undefined number, based on the configuration, then `MathError` appears in the field.

Field or Column	Description
Date	Date of the report.
Node	Name of the node for the application server process.
ASP	Name of the application server process.
Packets From ASP	Total number of packets that the application server process send for the specified date and hour.
Packets To ASP	Total number of packets sent to the application server process for the specified date and hour.
Packets From MTP3	Total number of packets that the application server process received from the MTP3 layer for the specified date and hour.
Packets To MTP3	Total number of packets the application server process sent to the MTP3 layer for the specified date and hour.
Send Errors	Total number of errors that occurred when sending packets to the application server process for the specified date and hour.
Receive Errors	Total number of errors that occurred when receiving packets from the application server process for the specified date and hour.

Daily Application Server Process Reports

You can view a daily summary of statistics for all application server processes that the MWTM detects on a specified date. The ASP Daily Report page shows summary reports of daily application server process statistics, archived by date and hour.

The ASP Daily Report table is sorted based on the information in the Packets From ASP column; however, you can sort the table based on the information in one of the other columns (see Navigating Table Columns, page 5-24).

Note If you do not enable data collection on the active report, a red ball and the words `Data Collection Disabled` appear next to the report title. Click the **Data Collection Disabled** link to see which command enables the report.

If a statistics calculation results in an undefined value, such as a number divided by zero (0), or an undefined number, based on the configuration, then `MathError` appears in the field.

Field or Column	Description
Date	Date of the report.
Node	Name of the node for the application server process.
ASP	Name of the application server process.
Packets From ASP	Total number of packets that the application server process sent for the specified date.
Peak From ASP	Highest hourly Pkts From ASP for the application server for the specified date.

Field or Column	Description
Peak From Hour	Hour in which the Peak From ASP for the application server process occurred for the specified date. Click the hour to see the ASP Hourly Report for the chosen application server process and hour.
Packets To ASP	Total number of packets that the application server sent to the application server processes for the specified date.
Peak To ASP	Highest hourly Pkts To ASP for the application server for the specified date.
Peak To Hour	Hour in which the Peak To ASP for the application server process occurred for the specified date. Click the hour to see the ASP Hourly Report for the chosen application server process and hour.
Send Errors	Total number of errors that occurred when sending packets to the application server processes for the specified date.
Peak Send Errors	Highest hourly Send Errors for the application server for the specified date.
Peak Send Hour	Hour in which the Peak Send Errors for the application server process occurred for the specified date. Click the hour to see the ASP Hourly Report for the chosen application server process and hour.
Receive Errors	Total number of errors that occurred when receiving packets from the application server processes for the specified date.
Peak Receive Errors	Highest hourly receive errors for the application server for the specified date.
Peak Receive Hour	Hour in which the peak receive errors for the application server process occurred for the specified date. Click the hour to see the ASP Hourly Report for the chosen application server process and hour.

Daily Application Server Process MTP3 Reports

The ASP MTP3 Daily Report page shows a daily summary of MTP3 statistics for all application server processes that the MWTM detects on a specified date. The ASP MTP3 Daily Report page shows a summary report of daily application server process MTP3 statistics by date and hour.

The ASP MTP3 Daily Report table is sorted based on the information in the Packets From MTP3 column; however, you can sort the table based on the information in one of the other columns (see Navigating Table Columns, page 5-24).

Note If you do not enable data collection on the active report, a red ball and the words `Data Collection Disabled` appears next to the report title. Click the **Data Collection Disabled** link to see which command enables the report.

If a statistics calculation results in an undefined value, such as a number divided by zero (0), or an undefined number, based on the configuration, then `MathError` appears in the field.

Field or Column	Description
Date	Date of the report.
Node	Name of the node for the application server process.
ASP	Name of the application server process.
Packets From MTP3	Total number of packets that the application server process receives from the MTP3 layer for the specified date.
Peak From MTP3	Highest hourly Packets From MTP3 for the application server process for the specified date.
Peak From Hour	Hour in which the Peak From MTP3 for the application server process occurred for the specified date. Click the hour to see the ASP Hourly Report for the chosen application server process and hour.
Packets To MTP3	Total number of packets sent to the MTP3 layer by the application server process for the specified date.
Peak To MTP3	Highest hourly Packets To MTP3 for the application server process for the specified date.
Peak To Hour	Hour in which the Peak To MTP3 for the application server process occurred for the specified date. Click the hour to see the ASP Hourly Report for the chosen application server process and hour.
Send Errors	Total number of errors that occurred when sending packets to the MTP3 layer for the specified date.
Peak Send Errors	Highest hourly Send Errors for the application server process for the specified date.
Peak Send Hour	Hour in which the Peak Send Errors for the application server process occurred for the specified date. Click the hour to see the ASP Hourly Report for the chosen application server process and hour.
Receive Errors	Total number of errors that occurred when receiving packets from the MTP3 layer for the specified date.
Peak Receive Errors	Highest hourly Receive Errors for the application server process for the specified date.
Peak Receive Hour	Hour in which the Peak Receive Errors for the application server process occurred for the specified date. Click the hour to see the ASP Hourly Report for the chosen application server process and hour.

Daily Application Server Process Peaks Reports

You can view a report of the statistics peaks for the application server process. The peaks report shows peak values for each day of the last 30 days, and the hour in which each peak occurred. The ASP Peaks Daily Report page shows a summary report of the daily application server process peak statistics by date and hour.

The ASP Peaks Daily Report table is sorted based on the information in the Peak From ASP column; however, you can sort the table based on the information in one of the other columns (see Navigating Table Columns, page 5-24).

Note If you do not enable data collection on the active report, a red ball and the words `Data Collection Disabled` appear next to the report title. Click the **Data Collection Disabled** link to see which command enables the report.

If a statistics calculation results in an undefined value, such as a number divided by zero (0), or an undefined number, based on the configuration, then `MathError` appears in the field.

Field or Column	Description
Date	Date of the report.
Node	Name of the node for the application server process.
ASP	Name of the application server process that recorded the peak value.
Peak From ASP	Highest hourly Packets From ASP for the application server for the chosen day.
Peak From Hour	Hour in which the Peak From ASP for the application server process occurred for the chosen day. Click the hour to see the ASP Hourly Report for the chosen application server process and hour.
Peak To ASP	Highest hourly Packets To ASP for the application server for the chosen day.
Peak To Hour	Hour in which the Peak To ASP for the application server process occurred for the chosen day. Click the hour to see the ASP Hourly Report for the chosen application server process and hour.
Peak Send Errors	Highest hourly Send Errors for the application server for the last 30 days.
Peak Send Hour	Hour in which the Peak Send Errors for the application server process occurred for the chosen day. Click the hour to see the ASP Hourly Report for the chosen application server process and hour.
Peak Receive Errors	Highest hourly Receive Errors for the application server for the last 30 days.
Peak Receive Hour	Hour in which the Peak Receive Errors for the application server process occurred for the chosen day. Click the hour to see the ASP Hourly Report for the chosen application server process and hour.

Daily Application Server Process MTP3 Peaks Reports

You can view a peaks report of the application server process MTP3 statistics. The peaks report shows peak values for each day and the hour in which each peak value occurred. The ASP MTP3 Peaks Daily Report page shows summary reports of the daily application server process MTP3 peak statistics by date and hour.

The ASP MTP3 Peaks Daily Report table is sorted based on the information in the Peak From MTP3 column; however, you can sort the table based on the information in one of the other columns (see Navigating Table Columns, page 5-24).

Note If you do not enable data collection on the active report, a red ball and the words `Data Collection Disabled` appear next to the report title. Click the **Data Collection Disabled** link to see which command enables the report.

If a statistics calculation results in an undefined value, such as a number divided by zero (0), or an undefined number, based on the configuration, then `MathError` appears in the field.

Field or Column	Description
Date	Date on which the peak values occurred.
Node	Name of the node for the application server process.
ASP	Name of the application server process that recorded the peak value.
Peak From MTP3	Highest hourly Packets From MTP3 to the application server process for the chosen day.
Peak From Hour	Hour in which the Peak From MTP3 to the application server process occurred for the chosen day. Click the hour to see the ASP Hourly Report for the chosen application server process and hour.
Peak To MTP3	Highest hourly Packets to MTP3 from the application server process for the chosen day.
Peak To Hour	Hour in which the Peak to MTP3 from the application server process occurred for the chosen day. Click the hour to see the ASP Hourly Report for the chosen application server process and hour.
Peak Send Errors	Highest hourly Send Errors for the application server process for the chosen day.
Peak Send Hour	Hour in which the Peak Send Errors for the application server process occurred for the chosen day. Click the hour to see the ASP Hourly Report for the chosen application server process and hour.

Field or Column	Description
Peak Receive Errors	Highest hourly Receive Errors for the application server process for the chosen day.
Peak Receive Hour	Hour in which the Peak Receive Errors for the application server process occurred for the chosen day. Click the hour to see the ASP Hourly Report for the chosen application server process and hour.

Link Reports

You can view summary reports of hourly and daily statistics for links, and export the reports.

This section covers:

- Hourly Link Reports, page 12-18
- Daily Link Reports, page 12-20
- Daily Link Peaks Reports, page 12-21
- Link Multi-Day Utilization Report, page 12-22

Hourly Link Reports

You can view hourly summaries of statistics for all links or a specific link that the MWTM detected on the specified date and hour. The Link Hourly Report page shows summary reports of hourly link statistics by date and hour.

The Link Hourly Report table is sorted based on the information in the Send Utilization or Send Erlangs column; however, you can sort the table based on the information in one of the other columns (see Navigating Table Columns, page 5-24).

Note If you do not enable data collection on the active report, a red ball and the words `Data Collection Disabled` appear next to the report title. Click the **Data Collection Disabled** link to see which command enables the report.

If a statistics calculation results in an undefined value, such as a number divided by zero (0), or an undefined number, based on the configuration, then `MathError` appears in the field.

Field or Column	Description
Date	Date of the report.
Node	Name of the node for the link.
Network Name	Name of the network for the link.
Signaling Point	Name of the signaling point for the link.
Link	Name of the link.

Field or Column	Description
Type	Type of link. Possible link types are: • **HSL**—Uses the SS7-over-ATM (Asynchronous Transfer Mode) high-speed protocol. • **SCTP**—Uses the Stream Control Transmission Protocol (SCTP) IP transport protocol. • **Serial**—Uses the serial SS7 signaling protocol. • **Virtual**—A virtual link that connects signaling point instances that run on the same node. The MWTM does not poll virtual links; nor does it display real-time data or accounting statistics for virtual links.
Send Utilization or Send Erlangs	Average Send Utilization for the link, expressed as a utilization percentage or number of Erlangs (E) (as set with the **mwtm webutil** command) for the specified date and hour. If you do not set the planned send capacity for the SCTP link, then `NoCap` appears in the field.
Receive Utilization or Receive Erlangs	Average Receive Utilization for the link, expressed as a utilization percentage or number of Erlangs (E) (as set with the **mwtm webutil** command) for the specified date and hour. If you do not set the planned receive capacity for the SCTP link, then `NoCap` appears in the field.
Long Term Send Utilization or Long Term Send Erlangs	Long-term average Send Utilization for the link, expressed as a utilization percentage or number of Erlangs (E) (as set with the **mwtm webutil** command), since MWTM polling began for the link, or since the MWTM last reset the averages as a result of bad data. If you do not set the planned send capacity for the SCTP link, then `NoCap` appears in the field.
Long Term Receive Utilization or Long Term Receive Erlangs	Long-term average Receive Utilization for the link, expressed as a utilization percentage or number of Erlangs (E) (as set with the **mwtm webutil** command), since MWTM polling began for the link, or since the MWTM last reset the averages as a result of bad data. If you do not set the planned receive capacity for the SCTP link, then `NoCap` appears in the field.
Send MSUs	Total number of MTP3 message signal units (MSUs) sent on the specified date and hour.
Receive MSUs	Total number of MTP3 MSUs received on the specified date and hour.
Congestion %	Percentage of time the link was congested on the specified date and hour.
Hourly In-Service	Percentage of time the link was in service on the specified date and hour.
Long Term In-Service	Average percentage of time the link was in service since MWTM polling began for the link, or since the MWTM last reset the averages as a result of bad data.

Daily Link Reports

You can view daily summaries of statistics for all links or for a specific link that the MWTM detected on the specified date and hour. The Link Daily Report page shows summary reports of daily link statistics by date and hour.

The Link Daily Report table is sorted based on the information in the Avg Send Utilization or Avg Send Erlangs column. However, you can sort the table based on the information in one of the other columns (see Navigating Table Columns, page 5-24).

Note If you do not enable data collection on the active report, a red ball and the words `Data Collection Disabled` appears next to the report title. Click the **Data Collection Disabled** link to see which command enables the report.

If a statistics calculation results in an undefined value, such as a number divided by zero (0), or an undefined number, based on the configuration, then `MathError` appears in the field.

Field or Column	Description
Date	Date of the report.
Node	Name of the node for the link.
Network Name	Name of the network for the link.
Signaling Point	Name of the signaling point for the link.
Link	Name of the link.
Type	Type of link. Possible link types are: • **HSL**—The link uses the SS7-over-ATM (Asynchronous Transfer Mode) high-speed protocol. • **SCTP**—The link uses the Stream Control Transmission Protocol (SCTP) IP transport protocol. • **Serial**—The link uses the serial SS7 signaling protocol. • **Virtual**—The link is a virtual link, which connects signaling point instances running on the same node. The MWTM does not poll virtual links, nor does it display real-time data or accounting statistics for virtual links.
Avg Send Utilization or Avg Send Erlangs	Average Send Utilization for the link, expressed as a utilization percentage or number of Erlangs (E) (as set with the **mwtm webutil** command) for the specified date. If you do not set the planned send capacity for the SCTP link, then `NoCap` appears in the field.
Peak Send Utilization or Peak Send Erlangs	Highest hourly Average Send Utilization for the link, expressed as a utilization percentage or number of Erlangs (E) (as set with the **mwtm webutil** command) for the specified date.
Peak Send Hour	Hour in which the Peak Send Utilization for the link occurred for the specified date. Click the hour to see the Link Hourly Report for the chosen link and hour.

Field or Column	Description
Long Term Send Utilization or Long Term Send Erlangs	Long-term average Send Utilization for the link, expressed as a utilization percentage or number of Erlangs (E) (as set with the **mwtm webutil** command), since MWTM polling began for the link, or since the MWTM last reset the averages as a result of bad data. If you do not set the planned send capacity for the SCTP link, then `NoCap` appears in the field.
Avg Receive Utilization or Avg Receive Erlangs	Average Receive Utilization for the link, expressed as a utilization percentage or number of Erlangs (E) (as set with the **mwtm webutil** command) for the specified date. If you do not set the planned receive capacity for the SCTP link, then `NoCap` appears in the field.
Peak Receive Utilization or Peak Receive Erlangs	Highest hourly Average Receive Utilization for the link, expressed as a utilization percentage or number of Erlangs (E) (as set with the **mwtm webutil** command) for the specified date.
Peak Receive Hour	Hour in which the Peak Receive Utilization for the link occurred for the specified date. Click the hour to see the Link Hourly Report for the chosen link and hour.
Long Term Receive Utilization or Long Term Receive Erlangs	Long-term average Receive Utilization for the link, expressed as a utilization percentage or number of Erlangs (E) (as set with the **mwtm webutil** command), since MWTM polling began for the link, or since the MWTM last reset the averages as a result of bad data. If you do not set the planned receive capacity for the SCTP link, then `NoCap` appears in the field.
Send MSUs	Total number of MTP3 MSUs sent on the specified date.
Receive MSUs	Total number of MTP3 MSUs received on the specified date.
Avg Congestion %	Average percentage of time the link was congested on the specified date.
Daily In-Service	Average percentage of time the link was in service on the specified date.
Long Term In-Service	Average percentage of time the link was in service since MWTM polling began for the link, or since the MWTM last reset the averages as a result of bad data.
Daily Low In-Service	Lowest hourly in-service percentage for the link for the specified date.
Low Srv Hour	Hour in which the lowest in-service percentage occurred for the specified date.

Daily Link Peaks Reports

You can view a daily link statistics peaks report using the Link Peaks Daily Report page. The peaks report shows peak values for each day and the hour in which each peak value occurred.

The Link Peaks Daily table is sorted based on the information in the Peak Send Utilization or Peak Send Erlangs column. However, you can sort the table based on the information in one of the other columns (see Navigating Table Columns, page 5-24).

Note If you do not enable data collection on the active report, a red ball and the words `Data Collection Disabled` appear next to the report title. Click the **Data Collection Disabled** link to see which command enables the report.

If a statistics calculation results in an undefined value, such as a number divided by zero (0), or an undefined number, based on the configuration, then `MathError` appears in the field.

Field or Column	Description
Date	Date of the report.
Node	Name of the node for the link.
Network Name	Name of the network for the link.
Signaling Point	Name of the signaling point for the link.
Link	Name of the link that recorded the peak value.
Type	Type of link. Possible link types are: • **HSL**—The link uses the SS7-over-ATM (Asynchronous Transfer Mode) high-speed protocol. • **SCTP**—The link uses the Stream Control Transmission Protocol (SCTP) IP transport protocol. • **Serial**—The link uses the serial SS7 signaling protocol. • **Virtual**—The link is a virtual link, which connects signaling point instances running on the same node. The MWTM does not poll virtual links, nor does it display real-time data or accounting statistics for virtual links.
Peak Send Utilization or Peak Send Erlangs	Peak Send Utilization for the link for the chosen day, expressed as a utilization percentage or number of Erlangs (E) (as set with the **mwtm webutil** command).
Peak Send Hour	Hour in which the Peak Send Utilization occurred for the chosen day. Click the hour to see the Link Hourly Report for the chosen link and hour.
Peak Receive Utilization or Peak Receive Erlangs	Peak Receive Utilization for the link for the chosen day, expressed as a utilization percentage or number of Erlangs (E) (as set with the **mwtm webutil** command).
Peak Receive Hour	Hour in which the Peak Receive Utilization occurred for the chosen day. Click the hour to see the Link Hourly Report for the chosen link and hour.
Send MSUs	Total number of MTP3 MSUs sent on the specified date.
Receive MSUs	Total number of MTP3 MSUs received on the specified date.

Link Multi-Day Utilization Report

The Link Multi-Day Report page shows send and receive utilization percentages for all links for the last three or five days.

The Link Multi-Day table is sorted based on the information in the Avg Send Utilization column. However, you can sort the table based on the information in one of the other columns (see Navigating Table Columns, page 5-24).

Note If you do not enable data collection on the active report, a red ball and the words `Data Collection Disabled` appear next to the report title. Click the **Data Collection Disabled** link to see which command enables the report.

If a statistics calculation results in an undefined value, such as a number divided by zero (0), or an undefined number, based on the configuration, then `MathError` appears in the field.

Field or Column	Description
Node	Name of the node for the link.
Network Name	Name of the network for the link.
Signaling Point	Name of the signaling point for the link.
Link	Name of the link.
Avg. Send Utilization	Send Utilization for the link, expressed as a utilization percentage or number of Erlangs (E) (as set with the **mwtm webutil** command) for each of the last five days. If you do not set the planned send capacity for the SCTP link, then `NoCap` appears in the field.
Avg. Receive Utilization	Receive Utilization for the link, expressed as a utilization percentage or number of Erlangs (E) (as set with the **mwtm webutil** command) for each of the last five days. If you do not set the planned receive capacity for the SCTP link, then `NoCap` appears in the field.

Linkset Reports

You can view summary reports of hourly and daily statistics for linksets, and export the reports.

This section covers:

- Hourly Linkset Reports, page 12-23
- Daily Linkset Reports, page 12-25
- Daily Linkset Peaks Reports, page 12-26

Hourly Linkset Reports

You can view hourly summaries of statistics for all linksets or for a specific linkset that the MWTM detected on the specified date and hour. The Linkset Hourly Report page shows summary reports for all archived MWTM hourly linkset statistics by date and hour.

The Linkset Hourly Report table is sorted based on the information in the Hourly In-Service column, then by the information in the Send Utilization or Send Erlangs column. However, you can sort the table based on the information in one of the other columns (see Navigating Table Columns, page 5-24).

Note If you do not enable data collection on the active report, a red ball and the words `Data Collection Disabled` appear next to the report title. Click the **Data Collection Disabled** link to see which command enables the report.

If a statistics calculation results in an undefined value, such as a number divided by zero (0), or an undefined number, based on the configuration, then `MathError` appears in the field.

Column	Description
Date	Date and time of the report.
Node	Name of the node for the linkset.
Network Name	Name of the network for the linkset.
Signaling Point	Name of the signaling point for the linkset.
Linkset	Name of the linkset.
Hourly In-Service	Percentage of time the linkset was in service on the specified date and hour.
Long Term In-Service	Average percentage of time the linkset was in service since the MWTM polling began for the linkset, or since the MWTM last reset the averages as a result of bad data.
Send Utilization or Send Erlangs	Average Send Utilization for the linkset, expressed as a utilization percentage or number of Erlangs (E) (as set with the **mwtm webutil** command) for the specified date and hour. If you do not set the planned send capacity for one or more of the SCTP links associated with the linkset, then `NoCap` appears in the field.
Long Term Send Utilization or Long Term Send Erlangs	Long-term average Send Utilization for the linkset, expressed as a utilization percentage or number of Erlangs (E) (as set with the **mwtm webutil** command), since MWTM polling began for the linkset, or since the MWTM last reset the averages as a result of bad data. If you do not set the planned send capacity for one or more of the SCTP links associated with the linkset, then `NoCap` appears in the field.
Receive Utilization or Receive Erlangs	Average Receive Utilization for the linkset, expressed as a utilization percentage or number of Erlangs (E) (as set with the **mwtm webutil** command) for the specified date and hour. If you do not set the planned receive capacity for one or more of the SCTP links associated with the linkset, then `NoCap` appears in the field.
Long Term Receive Utilization or Long Term Receive Erlangs	Long-term average Receive Utilization for the linkset, expressed as a utilization percentage or number of Erlangs (E) (as set with the **mwtm webutil** command), since MWTM polling began for the linkset, or since the MWTM last reset the averages as a result of bad data. If you do not set the planned receive capacity for one or more of the SCTP links associated with the linkset, then `NoCap` appears in the field.

Daily Linkset Reports

You can view daily summaries of statistics for all linksets or for a specific linkset that the MWTM detected on the specified date and hour. The Linkset Daily Report page shows summary reports of all archived MWTM daily linkset statistics by date and hour.

The Linkset Daily Report table is sorted based on the information in the Daily In-Service column, then by the information in the Avg Send Utilization or Avg Send Erlangs column. You can sort the table based on the information in one of the other columns (see Navigating Table Columns, page 5-24).

Note If you do not enable data collection on the active report, a red ball and the words `Data Collection Disabled` appear next to the report title. Click the **Data Collection Disabled** link to see which command enables the report.

If a statistics calculation results in an undefined value, such as a number divided by zero (0), or an undefined number, based on the configuration, then `MathError` appears in the field.

Field or Column	Description
Date	Date of the report.
Node	Name of the node for the linkset.
Network Name	Name of the network for the linkset.
Signaling Point	Name of the signaling point for the linkset.
Linkset	Name of the linkset.
Daily In-Service	Average percentage of time the linkset was in service on the specified date.
Long Term In-Service	Average percentage of time the linkset was in service since MWTM polling began for the linkset, or since the MWTM last reset the averages as a result of bad data.
Daily Low In-Service	Lowest hourly in-service percentage for the linkset for the specified date.
Low Srv Hour	Hour in which the lowest in-service percentage occurred for the specified date.
Avg Send Utilization or Avg Send Erlangs	Average Send Utilization for the linkset, expressed as a utilization percentage or number of Erlangs (E) (as set with the **mwtm webutil** command) for the specified date. If you do not set the planned send capacity for one or more of the SCTP links associated with the linkset, then `NoCap` appears in the field.
Peak Send Utilization or Peak Send Erlangs	Highest hourly Average Send Utilization for the linkset, expressed as a utilization percentage or number of Erlangs (E) (as set with the **mwtm webutil** command) for the specified date.
Peak Send Hour	Hour in which the Peak Send Utilization for the linkset occurred for the specified date. Click the hour to see the Link Hourly Report for all links associated with the chosen linkset for the chosen hour.

Field or Column	Description
Long Term Send Utilization or Long Term Send Erlangs	Long-term average Send Utilization for the linkset, expressed as a utilization percentage or number of Erlangs (E) (as set with the **mwtm webutil** command), since MWTM polling began for the linkset, or since the MWTM last reset the averages as a result of bad data. If you do not set the planned send capacity for one or more of the SCTP links associated with the linkset, then `NoCap` appears in the field.
Avg Receive Utilization or Avg Receive Erlangs	Average Receive Utilization for the linkset, expressed as a utilization percentage or number of Erlangs (E) (as set with the **mwtm webutil** command) for the specified date. If you do not set the planned receive capacity for one or more of the SCTP links associated with the linkset, then `NoCap` appears in the field.
Peak Receive Utilization or Peak Receive Erlangs	Highest hourly Average Receive Utilization for the linkset, expressed as a utilization percentage or number of Erlangs (E) (as set with the **mwtm webutil** command) for the specified date.
Peak Receive Hour	Hour in which the Peak Receive Utilization for the linkset occurred for the specified date. Click the hour to see the Link Hourly Report for all links associated with the chosen linkset for the chosen hour.
Long Term Receive Utilization or Long Term Receive Erlangs	Long-term average Receive Utilization for the linkset, expressed as a utilization percentage or number of Erlangs (E) (as set with the **mwtm webutil** command), since MWTM polling began for the linkset, or since the MWTM last reset the averages as a result of bad data. If you do not set the planned receive capacity for one or more of the SCTP links associated with the linkset, then `NoCap` appears in the field.

Daily Linkset Peaks Reports

You can view a daily linkset statistics peaks report using the Linkset Peaks Daily Report page. The peaks report shows peak values for each day and the hour in which each peak value occurred.

The Linkset Peaks Daily Report table is sorted based on the information in the Peak Send Utilization or Peak Send Erlangs column. However, you can sort the table based on the information in one of the other columns (see Navigating Table Columns, page 5-24).

Note If you do not enable data collection on the active report, a red ball and the words `Data Collection Disabled` appear next to the report title. Click the **Data Collection Disabled** link to see which command enables the report.

If a statistics calculation results in an undefined value, such as a number divided by zero (0), or an undefined number, based on the configuration, then `MathError` appears in the field.

Field or Column	Description
Date	Date of the report.
Node	Name of the node for the linkset.

Field or Column	Description
Network Name	Name of the network for the linkset.
Signaling Point	Name of the signaling point for the linkset.
Linkset	Name of the linkset that recorded the peak value.
Peak Send Utilization or Peak Send Erlangs	Peak Send Utilization for the linkset for the chosen day, expressed as a utilization percentage or number of Erlangs (E) (as set with the **mwtm webutil** command).
Peak Send Hour	Hour in which the Peak Send Utilization occurred for the chosen day. To see the Link Statistics - Hourly Report for all links associated with the chosen linkset for the chosen hour, click the hour.
Long Term Send Utilization or Long Term Send Erlangs	Long-term average Send Utilization for the linkset, expressed as a utilization percentage or number of Erlangs (E) (as set with the **mwtm webutil** command), since MWTM polling began for the linkset, or since the MWTM last reset the averages as a result of bad data.
Peak Receive Utilization or Peak Receive Erlangs	Peak Receive Utilization for the linkset for the chosen day, expressed as a utilization percentage or number of Erlangs (E) (as set with the **mwtm webutil** command).
Peak Receive Hour	Hour in which the Peak Receive Utilization occurred for the chosen day. Click the hour to see the Link Hourly Report for all links associated with the chosen linkset for the chosen hour.
Long Term Receive Utilization or Long Term Receive Erlangs	Long-term average Receive Utilization for the linkset, expressed as a utilization percentage or number of Erlangs (E) (as set with the **mwtm webutil** command), since MWTM polling began for the linkset, or since the MWTM last reset the averages as a result of bad data.

MLR Reports

Multi-Layer SMS Routing, or MLR, is a routing scheme that enables intelligent routing of Short Message Service (SMS) mobile originated (MO) messages based on the application or service from which they originated or to which they are destined. The MLR feature can make SMS message routing decisions based on information found in the TCAP, MAP, and MAP-user layers; MAP operation codes MAP-MT-FORWARD-SM and SEND-ROUTING-INFO-FOR-SM; and ANSI TCAP and IS-41 MAP operations.

You can view a summary report of daily statistics for MLR. You can also export the reports.

Daily MLR Reports

You can view a summary report of MLR processed, aborts, continues, result invokes, rule matches, subtriggers, and triggers statistics for the MWTM on a specified date. The MLR *type* Daily Report page shows reports of all archived MWTM daily MLR processed, aborts, continues, result invokes, rule matches, subtriggers, and triggers by date.

These archived daily MLR reports are available:

- Daily MLR Aborts Reports, page 12-28
- Daily MLR Continues Reports, page 12-28

Daily MLR Aborts Reports

The MLR Aborts Daily Report table is sorted based on the information in the Total Aborted column. However, you can sort the table based on the information in one of the columns (see Navigating Table Columns, page 5-24).

Note If you do not enable data collection on the active report, a red ball and the words `Data Collection Disabled` appear next to the report title. Click the **Data Collection Disabled** link to see which command enables the report.

If a statistics calculation results in an undefined value, such as a number divided by zero (0), or an undefined number, based on the configuration, then `MathError` appears in the field.

Field or Column	Description
Date	Date of the report.
Node	Name of the node for the signaling point.
Network Name	Name of the network for the signaling point.
Signaling Point	Name of the signaling point.
Total Aborted	Total number of MSUs aborted by MLR on the specified date.
No Resources	Number of MSUs aborted by MLR because of a shortage of resources on the specified date.
Results Blocked	Number of MSUs aborted by MLR with a result of **block** on the specified date.
GTI Mismatches	Number of MSUs aborted by MLR because of mis-matched GTIs on the specified date.
Addr Conv Fails	Number of MSUs aborted by MLR because of a failed GTA address conversion on the specified date.
Dest Unavails	Number of MSUs aborted by MLR because the destination was unavailable on the specified date.
No Server Aborteds	Number of MSUs aborted by MLR because no server was available on the specified date.

Daily MLR Continues Reports

The MLR Continues Daily Report table is sorted based on the information in the Total Continued column. However, you can sort the table based on the information in one of the columns (see Navigating Table Columns, page 5-24).

Note If you do not enable data collection on the active report, a red ball and the words `Data Collection Disabled` appear next to the report title. Click the **Data Collection Disabled** link to see which command enables the report.

If a statistics calculation results in an undefined value, such as a number divided by zero (0), or an undefined number, based on the configuration, then `MathError` appears in the field.

Field or Column	Description
Date	Date of the report.
Node	Name of the node for the signaling point.
Network Name	Name of the network for the signaling point.
Signaling Point	Name of the signaling point.
Total Continued	Total number of MSUs returned to SCCP by MLR with a result of **continue** on the specified date.
Unsupp Msg Type	Number of MSUs returned to SCCP by MLR because of unsupported message types on the specified date.
Unsupp Seg SCCP	Number of MSUs returned to SCCP by MLR because of unsupported SCCP segments on the specified date.
Unsupported Msgs	Number of MSUs returned to SCCP by MLR because of parse failures resulting from unsupported messages on the specified date.
Parse Errors	Number of MSUs returned to SCCP by MLR because of parse errors on the specified date.
No Results	Number of MSUs returned to SCCP by MLR with no results on the specified date.
Result Continueds	Number of MSUs returned to SCCP by MLR with a result of **continue** on the specified date.
No Server Continueds	Number of MSUs returned to SCCP by MLR because no server was available on the specified date.
Result GTTs	Number of MSUs returned to SCCP by MLR with a result of **GTT** on the specified date.
Failed Trigs	Number of MSUs returned to SCCP by MLR because of no trigger match on the specified date.

Daily MLR Processed Reports

The MLR Processed Daily Report table is sorted based on the information in the Routed column. However, you can sort the table based on the information in one of the columns (see Navigating Table Columns, page 5-24).

Note If you do not enable data collection on the active report, a red ball and the words `Data Collection Disabled` appear next to the report title. Click the **Data Collection Disabled** link to see which command enables the report.

If a statistics calculation results in an undefined value, such as a number divided by zero (0), or an undefined number, based on the configuration, then `MathError` appears in the field.

Field or Column	Description
Date	Date of the report.
Node	Name of the node for the signaling point.
Network Name	Name of the network for the signaling point.
Signaling Point	Name of the signaling point.
Routed	Total number of packets routed by MLR on the specified date.
Total Continued	Total number of MSUs passed back to SCCP processing by MLR on the specified date.
Total Aborted	Total number of MSUs not processed by MLR because of invalid data or a blocked MSU.
MAP SMS-MOs	Number of MSUs of type GSM-MAP SMS-MO processed by MLR on the specified date.
MAP SMS-MTs	Number of MSUs of type GSM-MAP SMS-MT processed by MLR on the specified date.
MAP SRI-SMs	Number of MSUs of type GSM-MAP SRI-SM processed by MLR on the specified date.
MAP AlertScs	Number of MSUs of type GSM-MAP AlertSc processed by MLR on the specified date.
ANSI-41 SMD-PPs	Number of MSUs of type ANSI-41 SMD-PP processed by MLR on the specified date.
ANSI-41 SMS-Reqs	Number of MSUs of type ANSI-41 SMSRequest processed by MLR on the specified date.
ANSI-41 SMS-Notifys	Number of MSUs of type ANSI-41 SMSNotify processed by MLR on the specified date.
Links	Contains links to related MLR reports (Aborts, Continues, Triggers, SubTriggers, RuleMatches, and ResultInvokes). The target report is filtered by the signaling point.

Daily MLR Result Invokes Reports

The MLR Result Invokes Daily Report table is sorted based on the information in the Invokes column. However, you can sort the table based on the information in one of the columns (see Navigating Table Columns, page 5-24).

Note If you do not enable data collection on the active report, a red ball and the words `Data Collection Disabled` appear next to the report title. Click the **Data Collection Disabled** link to see which command enables the report.

If a statistics calculation results in an undefined value, such as a number divided by zero (0), or an undefined number, based on the configuration, then `MathError` appears in the field.

Field or Column	Description
Date	Date of the report.
Node	Name of the node for the signaling point.
Network Name	Name of the network for the signaling point.
Signaling Point	Name of the signaling point.
ResultSet	Name of the result set of which this result is a member.
Result Number	Number of this result in the result set.
Invokes	Total number of times this result was invoked.

Daily MLR RuleMatches Reports

The MLR RuleMatches Daily Report table is sorted based on the information in the Matches column. However, you can sort the table based on the information in one of the columns (see Navigating Table Columns, page 5-24).

Note If you do not enable data collection on the active report, a red ball and the words `Data Collection Disabled` appear next to the report title. Click the **Data Collection Disabled** link to see which command enables the report.

If a statistics calculation results in an undefined value, such as a number divided by zero (0), or an undefined number, based on the configuration, then `MathError` appears in the field.

Field or Column	Description
Date	Date of the report.
Node	Name of the node for the signaling point.
Network Name	Name of the network for the signaling point.
Signaling Point	Name of the signaling point.
RuleSet	Name of the rule set of which this rule is a member.
Rule Number	Number of this rule in the rule set.
Matches	Total number of times this rule was matched.

Daily MLR SubTriggers Reports

The MLR SubTriggers Daily Report table is sorted based on the information in the Matches column. However, you can sort the table based on the information in one of the columns (see Navigating Table Columns, page 5-24).

Note If you do not enable data collection on the active report, a red ball and the words `Data Collection Disabled` appear next to the report title. Click the **Data Collection Disabled** link to see which command enables the report.

If a statistics calculation results in an undefined value, such as a number divided by zero (0), or an undefined number, based on the configuration, then `MathError` appears in the field.

Field or Column	Description
Date	Date of the report.
Node	Name of the node for the signaling point.
Network Name	Name of the network for the signaling point.
Signaling Point	Name of the signaling point.
Trigger Index	Index number associated with the trigger.
Sub Trigger Index	Index number associated with the subtrigger.
Action	Action taken by the subtrigger. Clicking on the ruleset name highlights the the signaling point in the navigation tree and opens the MLR Trigger Config tab for the chosen ruleset.
Parameters	Parameters that control the behavior of the subtrigger.
Matches	Number of subtrigger matches with result **Action Performed**.

Daily MLR Triggers Reports

The MLR Triggers Daily Report table is sorted based on the information in the Matches column. However, you can sort the table based on the information in one of the columns (see Navigating Table Columns, page 5-24).

Note If you do not enable data collection on the active report, a red ball and the words `Data Collection Disabled` appear next to the report title. Click the **Data Collection Disabled** link to see which command enables the report.

If a statistics calculation results in an undefined value, such as a number divided by zero (0), or an undefined number, based on the configuration, then `MathError` appears in the field.

Field or Column	Description
Date	Date of the report.
Node	Name of the node for the signaling point.
Network Name	Name of the network for the signaling point.
Signaling Point	Name of the signaling point.
Trigger Index	Index number associated with the trigger.
Action	Action taken by the trigger. Clicking on the ruleset name highlights the signaling point in the navigation tree and opens the MLR Trigger Config tab for the chosen ruleset.
Parameters	Parameters that control the behavior of the trigger.
Preliminary Matches	Preliminary count of trigger matches.
Matches	Number of trigger matches with result **Action Performed**.
Links	Contains links to related MLR SubTrigger reports. The target report is filtered by the signaling point.

MSU Rates Reports

You can view 15 minute, hourly and daily MSU rates reports. You can also export the reports in CSV format.

This section covers:

MSU Load Reports

You can view a 15 minute, hourly, or daily report of MSU load rates for all nodes that the MWTM detected in that time. The MSU Load Report provides the distribution of send and receive MSU packets, pertaining to overload thresholds for every CPU.

The MSU Load Report tables are sorted based on the information in the Date column. However, you can sort the tables based on the information in one of the columns (see Navigating Table Columns, page 5-24).

Field or Column	Description
Date	Date of the report.
Node	Name of the node.
Processor Slot/Bay	The number of the slot and bay containing the processor. This number is set to zero when the platform does not support processors in multiple slots or bays.
Overloaded Threshold	Over this rate of traffic, MSU traffic handling may be impacted.
Duration % Send	Duration of time the send MSU rate is in the specified percentage.
Duration % Receive	Duration in time the receive MSU rate is in the specified percentage.

MSU Peaks Reports

You can view a 15 minute, hourly, or daily report of MSU peak rates for all nodes that the MWTM detected in that time. The MSU Peaks Report page provides information that helps you analyze the maximum send and receive rates for each processor in MSU units per second.

The MSU Peaks Report tables are sorted based on the information in the Send column. However, you can sort the tables based on the information in one of the columns (see Navigating Table Columns, page 5-24).

Field or Column	Description
Date	Date of the report.
Node	Name of the node.
Processor Slot/Bay	Number of the slot and bay containing the processor. This number is set to zero when the platform does not support processors in multiple slots or bays.
Max Rate Send	This value records the highest rate of MSUs per second sent by the processor since the measurement was cleared.

Field or Column	Description
Max Rate Receive	This value records the highest rate of MSU per second received by the processor since the measurement was cleared.
Threshold Acceptable	Specifies a level of traffic below which traffic is considered to be acceptable. Once the traffic rate exceeds the Warning threshold, it is not Acceptable until traffic falls below this threshold.
Threshold Warning	Specifies a level of traffic that should be avoided, but is below a level that impacts MSU routing. Once the traffic rate exceeds the Overloaded threshold, it is not considered non-impacting until the traffic falls below this threshold.
Threshold Overloaded	Specifies a level of traffic indicating a rate that may impact MSU routing.
Duration in Acceptable Threshold Send	Rate of traffic (in seconds) sent by this processor considered as acceptable.
Duration in Acceptable Threshold Receive	Rate of traffic (in seconds) received by this processor considered as acceptable.
Duration in Warning Threshold Send	Rate of traffic (in seconds) sent by this processor considered above the acceptable level and below a level that impacts MSU routing.
Duration in Warning Threshold Receive	Rate of traffic (in seconds) received by this processor considered above the acceptable level and below a level that impacts MSU routing.
Duration in Overloaded Threshold Send	Rate of traffic (in seconds) sent by this processor at a level that may impact MSU routing.
Duration in Overloaded Threshold Receive	Rate of traffic (in seconds) received by this processor at a level that may impact MSU routing.

RAN Reports

The MWTM web interface provides network-wide reports that summarize IP-RAN utilization over a specified time period. The information is available in graphical, tabular, and CSV formats. Administrators use these reports for analysis of network-wide performance and errors for RAN backhauls and shorthauls. For example, you can generate a report to show which backhaul links were the most heavily utilized in the last 24 hours. Then you can drill down to a specific node for closer analysis, if necessary.

To generate a network-wide RAN report:

Step 1 In the left pane (navigation tree) of the MWTM web interface, choose **Reports > Statistics > RAN**.

Step 2 In the tool bar of the right pane, choose a report type from the Type drop-down menu (see Table 12-1 for a list of report types and their contents).

Step 3 Choose a time range from the Duration drop-down menu or customize your own time range by clicking the Customize icon.

Step 4 Choose an output format (Graph, Table, or CSV) from the Output drop-down menu (see Table 12-1 for contents of each output type).

Note The Graph output displays up to twelve RAN data streams based on traffic utilization and/or number of errors. To view all RAN data streams, choose Table or CSV.

Step 5 To generate the report, click the Run icon (green arrow).

Step 6 To understand the report, click the report type listed in Table 12-1 for a detailed description of the report fields.

Table 12-1 Report Contents

Report Type	Output	Contents
Backhaul Performance Daily	Graph	Minimum, maximum, and average performance data for all the RAN backhauls in the network: • Send Summary—Table summary of backhaul send data. • Receive Summary—Table summary of backhaul receive data. • Send Backhaul Performance Daily—Graph of backhaul send data. • Receive Backhaul Performance Daily—Graph of backhaul receive data.
	Table or CSV	Send and receive data, protocol type, node, backhaul, and shorthaul in tabular format.
Backhaul Errors Daily	Graph	For all the RAN backhauls in the network: • Table—Average error rate, total errors, and total GSM-Abis and UMTS-Iub errors in tabular format. • Backhaul Errors Daily—Graph that shows total errors, GSM errors, and UMTS errors.
	Table or CSV	Tabular information that shows total errors, total GSM-Abis errors, total UMTS-Iub errors, node, and backhaul.
Shorthaul Performance Daily	Graph	Minimum, maximum, and average performance data for all the RAN shorthauls in the network: Send Summary—Table summary of shorthaul send data. Receive Summary —Table summary of shorthaul receive data. Send Shorthaul Performance Daily—Graph of shorthaul send data. Receive Shorthaul Performance Daily—Graph of shorthaul receive data.
	Table or CSV	Tabular information that shows send and receive data, protocol type, node, backhaul, and shorthaul.
GSM Errors Daily	Graph	Table—Tabular data that shows total GSM error counts and average error rate over the chosen time period. GSM Errors Daily—Graph of GSM errors over the chosen time period.
	Table or CSV	Tabular information that shows total errors, total missed packets, total protocol errors, total miscellaneous errors, node, backhaul, and shorthaul.
UMTS Errors Daily	Graph	Table—Tabular data that shows total UMTS error counts and average error rate over the chosen time period. UMTS Errors Daily—Graph of UMTS errors over the chosen time period.
	Table or CSV	Tabular information that shows total errors, total protocol errors, total miscellaneous errors, node, backhaul, and shorthaul.

Backhaul Performance Daily

Output	GUI Element	Description
Graph	Node	Table column that lists nodes that contain RAN backhauls. To access details for a specific node, click a node in this column.
	Backhaul	Table column that lists the visible backhauls. To access details for a specific backhaul, click a backhaul in this column. **Note** The column shows a maximum of 12 backhauls by default. To change the number of visible backhauls, use the Graph Series Editor. See Using the Toolbar, page 11-6, for more information.
	Average Utilization	Table column that shows the average utilization of the backhaul. A value greater than 100% indicates that the backhaul is oversubscribed.
	Average	Table column that shows average bits per second for the backhaul.
	Minimum Utilization	Table column that shows the minimum utilization of the backhaul. A value greater than 100% indicates that the backhaul is oversubscribed.
	Minimum	Table column that shows minimum number of bits per second for the backhaul.
	Minimum Timestamp	Table column that shows time when the minimum bits-per-second value occurred.
	Maximum Utilization	Table column that shows the maximum utilization of the backhaul. A value greater than 100% indicates that the backhaul is oversubscribed.
	Maximum	Table column that shows maximum number of bits per second for the backhaul.
	Maximum Timestamp	Table column that shows time when the maximum bits-per-second value occurred.
	Expand to Full Screen	Click this link to open the graph in a full-screen window for better viewing.
	Minimum Bits/Sec	Y-axis labels for graphs that show minimum, average, and maximum bits per second for the visible backhauls. **Note** The graph shows a maximum of 12 backhauls by default. To change the number of visible backhauls, use the Graph Series Editor. See Using the Toolbar, page 11-6, for more information.
	Average Bits/Sec	
	Maximum Bits/Sec	
	Legend	Appearing below each graph, a legend of color-coded labels for each backhaul that appears in the graph.
Table, CSV	Node	Table column that lists all network nodes that contain backhauls. If Output is Table, to access performance details for a specific node, click a node in this column.
	Backhaul	Table column that lists all the backhauls in the network. If Output is Table, to access performance details for a specific backhaul, click a backhaul in this column.
	Errors	Table column that shows total error counts for each backhaul.
	Send	Table columns that show minimum, average, and maximum values and their timestamps for send traffic on the backhaul.
	Receive	Table columns that show minimum, average, and maximum values and their timestamps for receive traffic on the backhaul.

Backhaul Errors Daily

Output	GUI Element	Description
Graph	Node	Table column that lists nodes that contain RAN backhauls. To access details for a specific node, click a node in this column.
	Backhaul	Table column that lists the visible backhauls. To access details for a specific backhaul, click a backhaul in this column. **Note** The graph shows a maximum of 12 backhauls by default. To change the number of visible backhauls, use the Graph Series Editor. See Using the Toolbar, page 11-6, for more information.
	Avg. Error Rate (Per Sec)	Table column that lists the average error rate each second for the visible backhauls.
	Total Errors	Table column that lists the total number of errors (GSM and UMTS) for each visible backhaul.
	Total Errors GSM-Abis	Table column that lists the total number of GSM-Abis errors for each visible backhaul.
	Total Errors UMTS-Iub	Table column that lists the total number of UMST-Iub errors for each visible backhaul.
	Expand to Full Screen	Click this link to open the graph in a full-screen window for better viewing.
	UMTS Errors	Y-axis labels for graphs that show total UMTS errors, total GSM errors, and a combined total of UMTS and GSM errors for the visible backhauls.
	GSM Errors	**Note** The graph shows a maximum of 12 backhauls by default. To change the number of visible backhauls, use the Graph Series Editor. See Using the Toolbar, page 11-6, for more information.
	Total Errors	
	Legend	Positioned below the graph, a legend of color-coded labels for each backhaul that appears in the graph.
Table, CSV	Lists the same information as the graph output type, but in tabular format; also includes one unique field: Timestamp—identifies the time that each error value occurred for each visible backhaul.	

Shorthaul Performance Daily

Output	GUI Element	Description
Graph	Node	Table column that lists nodes that contain RAN shorthauls. To access details for a specific node, click a node in this column.
	Backhaul	Table column that lists the visible backhauls. To access details for a specific backhaul, click a backhaul in this column.
	Shorthaul	Table column that lists the visible shorthauls. To access details for a specific shorthaul, click a shorthaul in this column. **Note** The graph shows a maximum of 12 shorthauls by default. To change the number of visible shorthauls, use the Graph Series Editor. See Using the Toolbar, page 11-6, for more information.
	Average	Table column that shows the average bits per second for the shorthaul.
	Minimum	Table column that shows the minimum number of bits per second for the shorthaul.
	Minimum Timestamp	Table column that shows time when the minimum bits-per-second value occurred.
	Maximum	Table column that shows maximum number of bits per second for the shorthaul.
	Maximum Timestamp	Table column that shows time when the maximum bits-per-second value occurred.
	Expand to Full Screen	Click this link to open the graph in a full-screen window for better viewing.
	Minimum Bits/Sec	Y-axis labels for graphs that show minimum, average, and maximum bits per second for the visible shorthauls. **Note** The graph shows a maximum of 12 shorthauls by default. To change the number of visible shorthauls, use the Graph Series Editor. See Using the Toolbar, page 11-6, for more information.
	Average Bits/Sec	
	Maximum Bits/Sec	
	Legend	Positioned below each graph, a legend of color-coded labels for each shorthaul that appears in the graph.
Table, CSV	Node	Table column that lists all the nodes that contain RAN backhauls. If Output is Table, to access details for a specific node, click a node in this column.
	Backhaul	Table column that lists all the RAN backhauls in the network. If Output is Table, to access details for a specific backhaul, click a backhaul in this column.
	Shorthaul	Table column that lists all the RAN shorthauls in the network. If Output is Table, to access details for a specific shorthaul, click a shorthaul in this column.
	Protocol	Table column that shows whether the shorthaul protocol is GSM or UMTS.
	Send	Table columns that show minimum, average, and maximum values and their timestamps for send traffic on the shorthaul.
	Receive	Table columns that show minimum, average, and maximum values and their timestamps for receive traffic on the shorthaul.

GSM Errors Daily

Output	GUI Element	Description
Graph	Node	Table column that lists nodes that contain GSM shorthauls. To access details for a specific node, click a node in this column.
	Backhaul	Table column that lists backhauls that contain GSM shorthauls. To access details for a specific backhaul, click a backhaul in this column.
	Shorthaul	Table column that lists the visible GSM shorthauls. To access details for a specific shorthaul, click a shorthaul in this column. **Note** The table shows a maximum of 12 shorthauls by default. To change the number of visible shorthauls, use the Graph Series Editor. See Using the Toolbar, page 11-6, for more information.
	Total Counts	Table column that lists the total number of GSM errors for the visible shorthauls during the chosen duration.
	Avg. Error Rate (Per Sec)	Table column that lists the average error rate each second for the visible shorthauls.
	Expand to Full Screen	Click this link to open the graph in a full-screen window for better viewing.
	Error Counts	Y-axis label for graph that shows total GSM errors for the visible GSM shorthauls. **Note** The graph shows a maximum of 12 shorthauls by default. To change the number of visible shorthauls, use the Graph Series Editor. See Using the Toolbar, page 11-6, for more information.
	Legend	Positioned below the graph, a legend of color-coded labels for each shorthaul that appears in the graph.
Table, CSV	Node	Table column that lists all the nodes that contain GSM shorthauls. If Output is Table, to access details for a specific node, click a node in this column.
	Backhaul	Table column that lists all the backhauls that contain GSM shorthauls. If Output is Table, to access details for a specific backhaul, click a backhaul in this column.
	Shorthaul	Table column that lists all the GSM shorthauls in the network. If Output is Table, to access details for a specific shorthaul, click a shorthaul in this column.
	Total Errors	Table column that lists the total number of GSM errors for the visible shorthauls during the chosen duration.
	Total Missed Packets	Total number of missed packets on the GSM shorthaul.
	Total Protocol Errors	Total number of protocol errors on the GSM shorthaul.
	Total Miscellaneous Errors	Total number of miscellaneous errors on the GSM shorthaul.

UMTS Errors Daily

Output	GUI Element	Description
Graph	Node	Table column that lists nodes that contain UMTS shorthauls. To access details for a specific node, click a node in this column.
	Backhaul	Table column that lists backhauls that contain UMTS shorthauls. To access details for a specific backhaul, click a backhaul in this column.
	Shorthaul	Table column that lists the visible UMTS shorthauls. To access details for a specific shorthaul, click a shorthaul in this column. **Note** The table shows only 12 shorthauls by default. To change the number of visible shorthauls, use the Graph Series Editor. See Using the Toolbar, page 11-6, for more information.
	Total Counts	Table column that lists the total number of UMTS errors that occurred for the visible shorthauls during the chosen duration.
	Avg. Error Rate (Per Sec)	Table column that lists the average error rate each second for the visible shorthauls during the chosen duration.
	Expand to Full Screen	Click this link to open the graph in a full-screen window for better viewing.
	Error Counts	Y-axis label for the graph that shows the total number of UMTS errors for the visible UMTS shorthauls. **Note** The graph shows only 12 shorthauls by default. To change the number of visible shorthauls, use the Graph Series Editor. See Using the Toolbar, page 11-6, for more information.
	Legend	Positioned below the graph, a legend of color-coded labels for each UMTS shorthaul that appears in the graph.
Table, CSV	Node	Table column that lists nodes that contain UMTS shorthauls. If Output is Table, to access details for a specific node, click a node in this column.
	Backhaul	Table column that lists all the backhauls that contain UMTS shorthauls. If Output is Table, to access details for a specific backhaul, click a backhaul in this column.
	Shorthaul	Table column that lists all the UMTS shorthauls in the network. If Output is Table, to access details for a specific shorthaul, click a shorthaul in this column.
	Timestamp	Time that the error values occurred for the visible shorthauls.
	Total Errors	Table column that lists the total number of UMTS errors for the visible shorthauls during the chosen duration.
	Total Protocol Errors	Table column that lists the total number of protocol errors on the UMTS shorthaul.
	Total Miscellaneous Errors	Table column that lists the total number of miscellaneous errors on the UMTS shorthaul.

Viewing Accounting Reports

You can view any of the following statistics reports:

- GTT Accounting Reports, page 12-41
- MTP3 Accounting Reports, page 12-42
- AS/ASP Accounting Reports, page 12-44

GTT Accounting Reports

You can view summary reports of daily GTT accounting statistics. You can also export the reports.

GTT Accounting Statistics Daily Summary Reports

You can view a daily summary of GTT accounting statistics for all nodes that the MWTM detected on a specified date. The GTT Accounting Daily Report page shows all MWTM daily GTT accounting statistics detail reports by date. Each file contains a daily summary of GTT accounting statistics for all nodes that the MWTM detected on a specified date.

The GTT Accounting Daily Report table is sorted based on the information in the Packets column. However, you can sort the table based on the information in one of the other columns (see Navigating Table Columns, page 5-24).

Note If you do not enable data collection on the active report, a red ball and the words `Data Collection Disabled` appear next to the report title. Click the **Data Collection Disabled** link to see which command enables the report.

If a statistics calculation results in an undefined value, such as a number divided by zero (0), or an undefined number, based on the configuration, then `MathError` appears in the field.

Field or Column	Description
Date	Date of the report.
Node	Name of the node associated with the **From Network Name** for which data is visible.
From Network Name	Name of the network from which GTT traffic originated, and for which data is visible.
Signaling Point	Name of the signaling point associated with the **From Network Name** instance for which data is visible.
Linkset	Name of the linkset associated with the **From Network Name** instance for which data is visible.
Selector	Name of the selector.
GTA	Global Title Address (GTA) associated with the selector.

Field or Column	Description
To Network Name	Name of the network in which the translated point code resides for GTT files, version: • 4.1—Corresponds to ITP software release 12.2(20)SW or greater • 4.2—Corresponds to ITP software release 12.2(21)SW1 or greater • 4.3—Corresponds to ITP software release 12.2(25)SW1, 12.2(18)IXA, or 12.4(11)SW or higher • 4.4—Corresponds to ITP software release12.2(18)IXE or 12.4(15)SW or higher The value of this field is identical to that of the From Network Name filed for GTT files, version: • 3.1 (corresponding to ITP software releases 12.2(4)MB9 and 12.2(4)MB9a) • 4.0 (corresponding to ITP software release 12.2(4)MB10 or greater)
Point Code	Destination point code for the GTA.
Packets	Total number of packets translated by GTT on the specified date.
Octets	Total number of octets translated by GTT on the specified date.

MTP3 Accounting Reports

You can view a daily summary of MTP3 accounting statistics for the MWTM on a specified date. You can also export the reports. MTP3 accounting describes MTP3 layer traffic in support of linksets. To enable MTP3 accounting reports, use the **mwtm statreps acct** command (see mwtm statreps acct, page B-117).

This section covers:

- MTP3 Accounting Statistics Daily Detail Reports, page 12-42
- Daily MTP3/AS Accounting Statistics Archived Reports, page 12-44

Note Every five minutes (by default), the ITP moves data records from a quick-access table to a database that stores long term accounting records. This database contains accumulated accounting data since the last clearing or from the time accounting was originally enabled. The MWTM shows only the data from this database, not from the quick-access table.

MTP3 Accounting Statistics Daily Detail Reports

You can view a daily summary of MTP3 accounting statistics for the MWTM on a specified date. The MTP3 Accounting Daily Report page shows detail reports of all MWTM daily MTP3 accounting statistics by date. Each file contains a daily summary of MTP3 accounting statistics for the MWTM on a specified date.

The MTP3 Accounting Daily Report table is sorted based on the information in the Send MSUs column. However, you can sort the table based on the information in one of the other columns (see Navigating Table Columns, page 5-24).

Note If you do not enable data collection on the active report, a red ball and the words `Data Collection Disabled` appear next to the report title. Click the **Data Collection Disabled** link to see which command enables the report.

If a statistics calculation results in an undefined value, such as a number divided by zero (0), or an undefined number, based on the configuration, then `MathError` appears in the field.

Field or Column	Description
Date	Date of the report.
Node	Name of the node for the linkset.
Network Name	Name of the network for the linkset.
Signaling Point	Name of the signaling point for the linkset.
Linkset	Name of the linkset.
Gateway Screening	Indicates whether the traffic passed or failed the Gateway Screening test at the ITP. To see only statistics that passed or failed for a specific linkset, select a linkset and click **Pass**, **Fail**, or **Unroutable**.
OPC	Originating point code of the traffic, which is a unique identifier for each set of statistics. To see only statistics that match a specific OPC for a given linkset, find the linkset and click the point code.
DPC	Destination point code of the traffic. To see only statistics that match a specific DPC for a given linkset, find the linkset and click the point code.
SI	Service indicator, which indicates the type of SS7 traffic. Valid values include: • **0**—Signaling Network Management Message (SNM) • **1**—Maintenance Regular Message (MTN) • **2**—Maintenance Special Message (MTNS) • **3**—Signaling Connection Control Part (SCCP) • **4**—Telephone User Part (TUP) • **5**—ISDN User Part (ISUP) • **6**—Data User Part (call and circuit-related messages) • **7**—Data User Part (facility registration/cancellation messages) To see only more information for a specific type of SI, click the SI type.
Send MSUs	Total number of MTP3 MSUs sent on the specified date.
Receive MSUs	Total number of MTP3 MSUs received on the specified date.
Send Bytes	Total number of bytes sent on the specified date.
Receive Bytes	Total number of bytes received on the specified date.

Daily MTP3/AS Accounting Statistics Archived Reports

The MTP3/AS Daily Archived Accounting Reports page shows all archived MWTM daily MTP3/AS accounting statistics reports for the server to which you connect, stored as downloadable *.zip* files.

The .zip files are archived by date; for example, the *sgmAccStats.DailyDetail.2007-02-13.csv.zip* file contains the daily MTP3 accounting statistics report for February 13, 2007.

Note To limit the maximum number of rows in export CSV files (for example, Excel can only handle about 65535 rows.) See mwtm statreps maxcsvrows, page B-123.

Each archived *.zip* file contains a comma-separated value (CSV) text file with a daily MTP3 accounting statistics report for that date. You can download the *.zip* files and extract them.

To download a *.zip* file, click a filename, then save the file to a location of your choice. You can also import the file directly into Microsoft Excel.

For details about accounting statistics archived reports, see: ftp://ftp-eng.cisco.com/ftp/mwtm/docs/README-ExportReports.txt.

AS/ASP Accounting Reports

You can view daily reports for application server (AS) and application server process (ASP) accounting statistics by using the MWTM. You can also export the report. AS/ASP accounting describes MTP3 layer traffic in support of application servers. To enable AS/ASP accounting reports, use the **mwtm statreps acct** command (see mwtm statreps acct, page B-117).

Field or Column	Description
Date	Date of the report.
Node	Name of the node for the linkset.
Network Name	Name of the network for the linkset.
Signaling Point	Name of the signaling point for the linkset.
AS	Name of the application server.
OPC	Originating point code of the traffic, which is a unique identifier for each set of statistics. To see only statistics that match a specific OPC for a given linkset, find the linkset and click the point code.
DPC	Destination point code of the traffic. To see only statistics that match a specific DPC for a given linkset, find the linkset and click the point code.

Field or Column	Description
SI	Service indicator, which indicates the type of Signaling System 7 (SS7) traffic. Valid values include: • **0**—Signaling Network Management Message (SNM) • **1**—Maintenance Regular Message (MTN) • **2**—Maintenance Special Message (MTNS) • **3**—Signaling Connection Control Part (SCCP) • **4**—Telephone User Part (TUP) • **5**—ISDN User Part (ISUP) • **6**—Data User Part (call and circuit-related messages) • **7**—Data User Part (facility registration/cancellation messages) To see only more information for a specific type of SI, click the SI type.
Send MSUs	Total number of MTP3 MSUs sent on the specified date.
Receive MSUs	Total number of MTP3 MSUs received on the specified date.
Send Bytes	Total number of bytes sent on the specified date.
Receive Bytes	Total number of bytes received on the specified date.

Viewing File Archive Reports

Reports that have been archived are located within File Archive > Reports in the MWTM web interface. All archived reports are saved as export files in .csv format.

You can view any of the following archived reports:

- Custom Archived Reports, page 12-46
- Daily Archived Reports, page 12-49
- Hourly Archived Reports, page 12-49
- Rolling Archived Reports, page 12-49
- Application Server Archived Reports, page 12-50
- Application Server Process Archived Reports, page 12-51
- GTT Accounting Archived Reports, page 12-52
- Link Archived Reports, page 12-52
- Linkset Archived Reports, page 12-53
- MLR Archived Reports, page 12-54
- MSU Archived Reports, page 12-54
- MTP3/AS Archived Reports, page 12-55
- Point Codes Archived Reports, page 12-59
- Q.752 Hourly Archived Reports, page 12-59

You can also view MWTM statistics reports logs (see Viewing the MWTM Statistics Reports Logs, page 12-59).

Custom Archived Reports

The Custom Archived Report pages show all archived MWTM custom network and accounting statistics reports for the server to which you connect. These reports can be viewed on the Web, or downloaded as *.zip* files. These *.zip* files are also stored in the default directory (*/opt/CSCOsgm* by default) in the */reports/custom* directory.

Note Custom (and hourly) Q.752 reports are only available as *.zip* files.

Custom archived reports are those that you enable by using these commands:

Command	Generates these custom statistics:
mwtm accstats	Accounting
mwtm ggsnstats	GGSN
mwtm gttstats	GTT
mwtm linkstats	Link and linkset
mwtm mlrstats	MLR
mwtm msustats	MSU rates
mwtm mtpevents	MTP event
mwtm q752stats	Q.752
mwtm xuastats	Application server and application server process

Note For detailed descriptions of these commands, see Appendix B, "Command Reference."

The Custom Report tables are sorted based on the information in the Export File column. However, you can sort a table based on the information in one of the other columns (see Navigating Table Columns, page 5-24).

The Custom Report tables contain:

Column	Description
Export File	Name of the custom statistics export *.zip* file, archived by type, date, and hour; for example, the *sgmLinksetStats.custom.20867.2007-02-13-16:15.csv.zip* file contains the summary report of custom linkset statistics with the ID tag 20867 for the 15th minute of the 16th hour on February 13, 2007. Each archived *.zip* file contains a comma-separated value (CSV) text file with a daily statistics report for that date. You can download the *.zip* files and extract them. To download a *.zip* file, click a filename, then save the file to a location of your choice. You can also import the file directly into Microsoft Excel. For details about custom statistics archived reports, see: ftp://ftp-eng.cisco.com/ftp/mwtm/docs/README-ExportReports.txt.
Report Start Date (EST)	Date and time the custom report began.

Column	Description
Report Finish Date (EST)	Date and time the custom report ended.
Last Modified Date (EST)	Date and time the custom report was last modified.
View	Shows the custom detail report for the object. Not available for Q.752 reports.

To show details in HTML for custom archived reports, click on a link in the View column of the Custom Archived Report page:

Link	Description
Aborts and Continues	Daily MLR Aborts Reports, page 12-28 Daily MLR Continues Reports, page 12-28
Application Servers	Hourly Application Server Reports, page 12-10
Application Server Processes	Hourly Application Server Process Reports, page 12-12
Events	Custom MTP3 Events Detail Reports, page 12-57
GTT	GTT Accounting Statistics Daily Summary Reports, page 12-41
Links	Hourly Link Reports, page 12-18
Linksets	Hourly Linkset Reports, page 12-23
Processed	Daily MLR Processed Reports, page 12-29
ResultInvokes	Daily MLR Result Invokes Reports, page 12-30
RuleMatches	Daily MLR RuleMatches Reports, page 12-31
SubTriggers	Daily MLR SubTriggers Reports, page 12-31
Triggers	Daily MLR Triggers Reports, page 12-32

All custom detail reports contain these headings and general menu options:

Heading/ Menu Option	Description
Date and Hour (in heading)	Date and hour of the report.
Offset (in heading)	Shows the number of rows in the table, prior to the first visible row; for example, if the first visible row is 501, the **Offset** is 500.
Number and Sort Order (in heading)	Shows the number of records (rows) in the table, the column by which the table is sorted, and whether the sort is in ascending or descending order.
10/Page	Shows 10 rows in the table.
20/Page	Shows 20 rows in the table.
50/Page	Shows 50 rows in the table.

Heading/ Menu Option	Description
100/Page	Shows 100 rows in the table.
300/Page	Shows 300 rows in the table.
500/Page	Shows 500 rows in the table.
Max	Shows up to 15,000 rows in the table. **Note** Depending on the number of rows, this could take up to 15 minutes.
DefPrefs	Resets the **/Page** preferences for this web page to the default settings for the MWTM server.
First (at bottom of table)	Shows the first page of entries for the table. For example, if the table is sorted by **Total Aborted** in descending order, clicking this field shows the entries with the highest number of MSUs aborted by MLR. You cannot click this field if the first page of entries is already visible.
Previous (Rows) (at bottom of table)	Shows the previous page of entries for the table. You cannot click this field if the first page of entries is already visible.
Next (Rows) (at bottom of table)	Shows the next page of entries for the table. You cannot click this field if the last page of entries is already visible.
Last (at bottom of table)	Shows the last page of entries for the table. For example, if the table is sorted by **Total Aborted** in descending order, clicking this field shows the entries with the lowest number of MSUs aborted by MLR. You cannot click this field if the last page of entries is already visible.
Total (at bottom of table)	Shows the total number of entries in the table.

Daily Archived Reports

The Daily Archived Reports pages display summary reports for all archived MWTM daily network statistics for all application servers, application server processes, links, linksets, MLR, or point codes that the MWTM detects for the server to which you connect, stored as downloadable *.zip* files.

The *.zip* files are archived by type and hour; for example, the *sgmLinksetStats.DailySum.2007-02-13.csv.zip* file contains the summary report of daily linkset statistics for the February 13, 2007.

Each archived *.zip* file contains a comma-separated value (CSV) text file with a summary report of daily network statistics for all application servers, application server processes, links, linksets, MLR, or point codes that the MWTM detected on that date and hour. You can download the *.zip* files and extract them.

To download a *.zip* file, click a filename, then save the file to a location of your choice. You can also import the file directly into Microsoft Excel.

For details about daily network statistics archived reports, see: ftp://ftp-eng.cisco.com/ftp/mwtm/docs/README-ExportReports.txt.

Hourly Archived Reports

The Hourly Archived Reports pages show summary reports for all archived MWTM hourly network statistics for all of the following that the MWTM detects for the server to which you connect:

- Application servers
- Application server processes
- Links
- Linksets
- Q752 links

The summary reports of archived hourly network statistics are stored as downloadable *.zip* files. The *.zip* files are archived by type, date, and hour; for example, the *sgmLinksetStats.2007-02-13-08.csv.zip* file contains summary reports for the hourly linkset statistics for the eighth hour on February 13, 2007.

Each archived *.zip* file contains a comma-separated value (CSV) text file with a summary report of hourly network statistics for all application servers, application server processes, links, or linksets that the MWTM detects on that date and hour. You can download the *.zip* files and extract them.

To download a *.zip* file, click a filename, then save the file to a location of your choice. You can also import the file directly into Microsoft Excel.

For details about the format of hourly network statistics archived reports, see: ftp://ftp-eng.cisco.com/ftp/mwtm/docs/README-ExportReports.txt.

Rolling Archived Reports

The All Rolling Reports page shows summary reports of concatenated MWTM hourly and daily network statistics for all of the following objects detected by the MWTM for the server you are connected to:

- Application servers
- Application server processes
- Links
- Linksets

These statistics are stored as downloadable *.zip* files. The *.zip* files are archived by type and number of days (7 or 30). For example:

- The *sgmLinkStats.RollingSevenDayAllHours.csv.zip* file contains summary reports of the hourly link statistics for the last seven (7) days, concatenated into one comma-separated value (CSV) text file.
- The *sgmLinkStats.Rolling30DayAllDays.csv.zip* file contains summary reports of the daily link statistics for the last 30 days, concatenated into one comma-separated value (CSV) text file.

Note To limit the maximum number of rows in export CSV files (for example, Excel can only handle 65,535 rows.) See mwtm statreps maxcsvrows, page B-123.

The MWTM creates a new set of files every hour.

You can download the *.zip* files and extract them. To download a *.zip* file, click a filename, then save the file to a location of your choice. You can also import the file directly into Microsoft Excel.

For details about rolling statistics archived reports, see: ftp://ftp-eng.cisco.com/ftp/mwtm/docs/README-ExportReports.txt.

Application Server Archived Reports

You can access these reports:

- Daily Application Server Archived Reports, page 12-50
- Hourly Application Server Archived Reports, page 12-50

Note For details about custom application server archived reports, see Custom Archived Reports, page 12-46.

Daily Application Server Archived Reports

The AS Daily Archived Reports page shows summary reports for all archived MWTM daily network statistics for all application servers that the MWTM detects for the server to which you connect. The information is stored as downloadable *.zip* files.

The *.zip* files are archived by type and date; for example, the *sgmASEStats.DailySum.2007-02-13.csv.zip* file contains the summary report for daily application server statistics for February 13, 2007.

Each archived *.zip* file contains a comma-separated value (CSV) text file with a summary report of daily network statistics for all application servers that the MWTM detects on that date and hour. You can download the *.zip* files and extract them.

To download a *.zip* file, click a filename, then save the file to a location of your choice. You can also import the file directly into Microsoft Excel.

For details about daily application server statistics archived reports, see: ftp://ftp-eng.cisco.com/ftp/mwtm/docs/README-ExportReports.txt.

Hourly Application Server Archived Reports

The AS Hourly Archived Reports page shows all summary reports for archived MWTM hourly network statistics for all application servers that the MWTM detects for the server to which you connect. The information is stored as downloadable *.zip* files.

The *.zip* files are archived by type, date, and hour; for example, the *sgmASEStats.2007-02-13-08.csv.zip* file contains the summary report for hourly application server statistics for the 8th hour on February 13, 2007.

Each archived *.zip* file contains a comma-separated value (CSV) text file with a summary report of hourly network statistics for all application servers that the MWTM detected on that date and hour. You can download the *.zip* files and extract them.

To download a *.zip* file, click a filename, then save the file to a location of your choice. You can also import the file directly into Microsoft Excel.

For details about hourly application server statistics archived reports, see: ftp://ftp-eng.cisco.com/ftp/mwtm/docs/README-ExportReports.txt.

Application Server Process Archived Reports

You can access these reports:

- Daily Application Server Process Archived Reports, page 12-51
- Daily Application Server Process Archived Reports, page 12-51

Note For details about custom application server archived reports, see Custom Archived Reports, page 12-46.

Daily Application Server Process Archived Reports

The ASP Daily Archived Reports page shows summary reports of all archived MWTM daily network statistics for all application server processes that the MWTM detects for the server to which connect, stored as downloadable *.zip* files.

The *.zip* files are archived by type and date; for example, the *sgmASPStats.DailySum.2007-02-13.csv.zip* file contains the summary report of daily application server process statistics for February 13, 2007.

Each archived *.zip* file contains a comma-separated value (CSV) text file with a summary report of daily network statistics for all application server processes that the MWTM detected on that date and hour. You can download the *.zip* files and extract them.

To download a *.zip* file, right-click a filename, then save the file to a location of your choice. You can also import the file into Microsoft Excel.

For details about daily application server process statistics archived reports, see: ftp://ftp-eng.cisco.com/ftp/mwtm/docs/README-ExportReports.txt.

Hourly Application Server Process Archived Reports

The ASP Hourly Archived Reports page shows the summary reports of all archived MWTM hourly network statistics for all application server processes that the MWTM detects for the server to which you connect, stored as downloadable *.zip* files.

The *.zip* files are archived by type, date, and hour; for example, the *sgmASPStats.2007-02-13.csv.zip* file contains the summary report of hourly application server process statistics for February 13, 2007.

Each archived *.zip* file contains a comma-separated value (CSV) text file with the summary report for hourly network statistics for all application server processes that the MWTM detected on that date and hour. You can download the *.zip* files and extract them.

To download a *.zip* file, click a filename, then save the file to a location of your choice. You can also import the file directly into Microsoft Excel.

For details about hourly application server process statistics archived reports, see: ftp://ftp-eng.cisco.com/ftp/mwtm/docs/README-ExportReports.txt.

GTT Accounting Archived Reports

You can access the daily GTT accounting statistics archived reports. For details about custom GTT accounting archived reports, seeCustom Archived Reports, page 12-46.

Daily GTT Accounting Statistics Archived Reports

The GTT Daily Archived Accounting Reports page shows all archived MWTM daily GTT accounting statistics reports for the server to which you connect, stored as downloadable *.zip* files.

The *.zip* files are archived by type and date; for example, the *sgmGTTStats.DailyDetail.2007-02-13.csv.zip* file contains the daily GTT accounting statistics report for February 13, 2007.

Each archived *.zip* file contains a comma-separated value (CSV) text file with a daily GTT accounting statistics report for that date. You can download the *.zip* files and extract them.

To download a *.zip* file, click a filename, then save the file to a location of your choice. You can also import the file directly into Microsoft Excel.

For details about GTT accounting statistics archived reports, see: ftp://ftp-eng.cisco.com/ftp/mwtm/docs/README-ExportReports.txt.

Link Archived Reports

You can access these reports:

- Hourly Link Statistics Archived Reports, page 12-52
- Daily Link Statistics Archived Reports, page 12-53

Note For details about custom link archived reports, see Custom Archived Reports, page 12-46.

Hourly Link Statistics Archived Reports

The Link Hourly Archived Reports page shows summary reports for all archived MWTM hourly network statistics for all links that the MWTM detected for the server to which you connect, stored as downloadable *.zip* files.

The *.zip* files are archived by type, date, and hour; for example, the *sgmLinkStats.2007-02-13-09.csv.zip* file contains the summary reports for hourly link statistics for February 13, 2007 at 9:00am.

Each archived *.zip* file contains a comma-separated value (CSV) text file with a summary report of an hourly network statistics for all links that the MWTM detected on that date and hour. You can download the *.zip* files and extract them.

To download a *.zip* file, click a filename, then save the file to a location of your choice. You can also import the file directly into Microsoft Excel.

For details about hourly link statistics archived reports, see: ftp://ftp-eng.cisco.com/ftp/mwtm/docs/README-ExportReports.txt.

Daily Link Statistics Archived Reports

The Link Daily Archived Reports page shows summary reports for all archived MWTM daily network statistics for all links that the MWTM detected for the server to which you connect, stored as downloadable *.zip* files.

The *.zip* files are archived by type and date; for example, the *sgmLinkStats.DailySum.2007-02-13.csv.zip* file contains the summary report of daily link statistics for February 13, 2007.

Each archived *.zip* file contains a comma-separated value (CSV) text file with a summary report of daily network statistics for all links that the MWTM detected on that date and hour. You can download the *.zip* files and extract them.

To download a *.zip* file, click a filename, then save the file to a location of your choice. You can also import the file directly into Microsoft Excel.

For details about daily link statistics archived reports, see: ftp://ftp-eng.cisco.com/ftp/mwtm/docs/README-ExportReports.txt.

Linkset Archived Reports

You can access these reports:

- Hourly Linkset Statistics Archived Reports, page 12-53
- Daily Linkset Statistics Archived Reports, page 12-53

Note For details about custom linkset archived reports, see Custom Archived Reports, page 12-46.

Hourly Linkset Statistics Archived Reports

The Linkset Hourly Archived Reports page shows summary reports of all archived MWTM hourly network statistics for all linksets that the MWTM detects for the server to which you connect, stored as downloadable *.zip* files.

The *.zip* files are archived by type, date, and hour; for example, the *sgmLinksetStats.2007-02-13.csv.zip* file contains the summary report for the hourly linkset statistics for February 13, 2007.

Each archived *.zip* file contains a comma-separated value (CSV) text file with a summary report of hourly network statistics for all linksets that the MWTM detected on that date and hour. You can download the .zip files and extract them.

To download a *.zip* file, click a filename, then save the file to a location of your choice. You can also import the file directly into Microsoft Excel.

For details about hourly linkset statistics archived reports, see: ftp://ftp-eng.cisco.com/ftp/mwtm/docs/README-ExportReports.txt.

Daily Linkset Statistics Archived Reports

The Linkset Daily Archived Reports page shows the summary report of all archived MWTM daily network statistics for all linksets that the MWTM detected for the server to which you connect, stored as downloadable .zip files.

The *.zip* files are archived by type and date; for example, the *sgmLinksetStats.DailySum.2007-02-13.csv.zip* file contains the summary reports of daily linkset statistics for February 13, 2007.

Each archived *.zip* file contains a comma-separated value (CSV) text file with a summary report of daily network statistics for all linksets that the MWTM detected on that date and hour. You can download the *.zip* files and extract them.

To download a *.zip* file, click a filename, then save the file to a location of your choice. You can also import the file directly into Microsoft Excel.

For details about daily linkset statistics archived reports, see: ftp://ftp-eng.cisco.com/ftp/mwtm/docs/README-ExportReports.txt.

MLR Archived Reports

Note For details about custom MLR statistics archived reports, see Custom Archived Reports, page 12-46.

The MLR Daily Archived Reports pages show all archived MWTM daily MLR processed, aborts, continues, result invokes, rule matches, subtriggers, and triggers statistics reports for the server to which you connect, stored as downloadable *.zip* files.

The *.zip* files are archived by type and date; for example, the:

- *mwtmMLRStats.DailyAbortCons.2007-02-13.csv.zip* file contains the daily MLR aborts and report for February 13, 2007.
- *mwtmMLRStats.DailyProcessed.2007-02-13.csv.zip* file contains the daily MLR processed report for February 13, 2007.
- *mwtmMLRStats.DailyResultInvokes.2007-02-13.csv.zip* file contains the daily MLR result invokes report for February 13, 2007.
- *mwtmMLRStats.DailyRuleMatches.2007-02-13.csv.zip* file contains the daily MLR rule matches report for February 13, 2007.
- *mwtmMLRStats.DailySubTriggers.2007-02-13.csv.zip* file contains the daily MLR subtriggers report for February 13, 2007.
- *mwtmMLRStats.DailyTriggers.2007-02-13.csv.zip* file contains the daily MLR triggers report for February 13, 2007.

Each archived *.zip* file contains a comma-separated value (CSV) text file with a daily MLR statistics report for that date. You can download the *.zip* files and extract them.

To download a *.zip* file, click a filename, then save the file to a location of your choice. You can also import the file directly into Microsoft Excel.

For details about MLR statistics archived reports, see: ftp://ftp-eng.cisco.com/ftp/mwtm/docs/README-ExportReports.txt.

MSU Archived Reports

You can access these reports:

- Hourly MSU Archived Reports, page 12-55
- Daily MSU Archived Reports, page 12-55

Note For details about custom MSU archived reports, see Custom Archived Reports, page 12-46.

Hourly MSU Archived Reports

The MSU Hourly Archived Reports page shows summary reports of all archived MWTM hourly MSU rates that the MWTM detects for the server to which you connect, stored as downloadable *.zip* files.

The *.zip* files are archived by type, date, and hour; for example, the *itpHourlyMsuLoad.2007-02-13.csv.zip* file contains the summary report for the hourly MSU rates for February 13, 2007.

Each archived *.zip* file contains a comma-separated value (CSV) text file with a summary report of hourly MSU rates that the MWTM detected on that date and hour. You can download the .zip files and extract them.

To download a *.zip* file, click a filename, then save the file to a location of your choice. You can also import the file directly into Microsoft Excel.

For details about hourly MSU archived reports, see: ftp://ftp-eng.cisco.com/ftp/mwtm/docs/README-ExportReports.txt.

Daily MSU Archived Reports

The MSU Daily Archived Reports page shows the summary report of all archived MWTM daily MSU rates that the MWTM detected for the server to which you connect, stored as downloadable .zip files.

The *.zip* files are archived by type and date; for example, the *itpDailyMsuLoad.2007-02-13.csv.zip* file contains the summary reports of daily MSU rates for February 13, 2007.

Each archived *.zip* file contains a comma-separated value (CSV) text file with a summary report of daily MSU rates that the MWTM detected on that date and hour. You can download the *.zip* files and extract them.

To download a *.zip* file, click a filename, then save the file to a location of your choice. You can also import the file directly into Microsoft Excel.

For details about daily MSU archived reports, see: ftp://ftp-eng.cisco.com/ftp/mwtm/docs/README-ExportReports.txt.

MTP3/AS Archived Reports

You can access these reports:

- MTP3 Event Reports, page 12-55
- Custom MTP3 Events Detail Reports, page 12-57
- Custom MTP3/AS Accounting Detail Reports, page 12-57

MTP3 Event Reports

This section contains:

- Hourly MTP3/AS Event Reports, page 12-55
- Custom MTP3/AS Event Reports, page 12-56

Hourly MTP3/AS Event Reports

To create hourly MTP3/AS event reports for the MWTM:

Step 1 Log in as the root user, as described in Starting the MWTM Client, page 4-2, or as a superuser, as described in Specifying a Super User (Server Only), page 2-20.

Step 2 Enter these commands:

```
# cd /opt/CSCOsgm/bin
# ./mwtm evreps enable
# ./mwtm evreps mtp
```

For more details on the **mwtm evreps** commands, see Appendix B, "Command Reference."

The MTP3/AS Hourly Events Archived Reports page shows all hourly MWTM MTP3/AS event reports for the server to which you connect.

The *.zip* files are archived by type, date, and hour; for example, the *sgmMTP3Events.2006-06-29-08.csv.zip* file contains a summary report of the hourly MTP3 event for the eighth hour on June 29, 2006.

Each archived *.zip* file contains a comma-separated value (CSV) text file with a summary report of an hourly MTP3 event for all objects that the MWTM detected on that date and hour. You can download the *.zip* files and extract them.

To download a *.zip* file, click a filename, then save the file to a location of your choice. You can also import the file directly into Microsoft Excel.

For details about hourly MTP3 event reports, see ftp://ftp-eng.cisco.com/ftp/mwtm/docs/README-ExportReports.txt.

Custom MTP3/AS Event Reports

To create custom MTP3/AS event reports for the MWTM:

Step 1 Log in as the root user, as described in Starting the MWTM Client, page 4-2, or as a superuser, as described in Specifying a Super User (Server Only), page 2-20.

Step 2 Enter these commands:

```
# cd /opt/CSCOsgm/bin
# ./mwtm mtpevents
```

For more details on the **mwtm mtpevents** command, see Appendix B, "Command Reference."

The Custom MTP3/AS Events Archived Reports page shows all custom MWTM MTP3/AS event reports for the server to which you connect.

Field or Column	Description
Export File	Name of the custom network events export *.zip* file, archived by type, date, and hour; for example, the *sgmMTP3Events.custom.20867.2006-02-13-16-15.csv.zip* file contains the summary report of custom network events with ID tag 20867 for the 15th minute of the 16th hour on February 13, 2006. Each archived *.zip* file contains a comma-separated value (CSV) text file with a daily statistics report for that date. You can download the *.zip* files and extract them. To download a *.zip* file, click a filename, then save the file to a location of your choice. You can also import the file directly into Microsoft Excel. For details about custom statistics archived reports, see: ftp://ftp-eng.cisco.com/ftp/mwtm/docs/README-ExportReports.txt.
Report Start Date (EST)	Date and time the custom report began.
Report Finish Date (EST)	Date and time the custom report ended.
Last Modified Date (EST)	Date and time the custom report was last modified.
View	Shows the custom detail report for the object.

Custom MTP3 Events Detail Reports

The Custom MTP3 Events Detail Reports page shows details for all archived MWTM custom MTP3 event reports for all nodes that the MWTM detected when you enabled the report. You enable Custom event reports by using the **mwtm mtpevents** command.

Field or Column	Description
ID	Identifier for the custom report, specified when you entered the **mwtm mtpevents** command. If you did not specify an ID, this field shows the process ID of the command that enabled the report.
Node	Name of the node.
Index	Number in the list shown in the CLI.
MTP3 Event Text	MTP3 event message as seen on the CLI.

Custom MTP3/AS Accounting Detail Reports

The Custom MTP3/AS Accounting Detail Reports page shows a custom summary of MTP3/AS accounting statistics for links and linksets in the MWTM. Custom MTP3/AS accounting reports are enabled using the **mwtm accstats** command.

Note If you do not enable data collection on the active report, a red ball and the words `Data Collection Disabled` appear next to the report title. Click the **Data Collection Disabled** link to see which command enables the report.

If a statistics calculation results in an undefined value, such as a number divided by zero (0), or an undefined number, based on the configuration, then `MathError` appears in the field.

Field or Column	Description
ID	Internal ID, assigned by the MWTM, of the chosen hourly accounting statistics report. To see the entire detailed report, click the ID. The MWTM shows the Accounting Data Record # X for Date for that date and hour, in text format. The Accounting Data Record # X for Date can be useful when the TAC is debugging problems.
Node	Name of the node for the linkset.
Network Name	Name of the network for the linkset.
Sig Point	Name of the signaling point for the linkset.
Linkset	Name of the linkset.
Gateway Screening	Indicates whether the traffic passed or failed the Gateway Screening test at the ITP. To see only statistics that passed or failed for a specific linkset, select a linkset and click **Pass**, **Fail**, or **Unroutable**.

Field or Column	Description
OPC	Originating point code of the traffic, which is a unique identifier for each set of statistics. To see only statistics that match a specific OPC for a given linkset, find the linkset and click the point code.
DPC	Destination point code of the traffic. To see only statistics that match a specific DPC for a given linkset, find the linkset and click the point code.
SI	Service indicator, which indicates the type of SS7 traffic. Valid values include: • **0**—Signaling Network Management Message (SNM) • **1**—Maintenance Regular Message (MTN) • **2**—Maintenance Special Message (MTNS) • **3**—Signaling Connection Control Part (SCCP) • **4**—Telephone User Part (TUP) • **5**—ISDN User Part (ISUP) • **6**—Data User Part (call and circuit-related messages) • **7**—Data User Part (facility registration/cancellation messages) To see only detailed information for a specific type of SI, click the SI type.
Send MSUs	Total number of MTP3 MSUs sent on the specified date.
Receive MSUs	Total number of MTP3 MSUs received on the specified date.
Send Bytes	Total number of bytes sent on the specified date.
Receive Bytes	Total number of bytes received on the specified date.

Point Codes Archived Reports

The Point Codes Daily Archived Reports page shows all archived MWTM daily point code inventory reports for the server to which you connect, stored as downloadable *.zip* files.

On the Point Codes Daily Archived Reports page, the *.zip* files are archived by date; for example, the *sgmPointCodes.DailyInv.2007-02-13.csv.zip* file contains the daily point code inventory report for February 13, 2007.

Each archived *.zip* file contains a comma-separated value (CSV) text file with a list of all point codes that were being used by all nodes that the MWTM detected on that date. You can download the The *.zip* files and extract them.

To download a *.zip* file, click a filename, then save the file to a location of your choice. You can also import the file directly into Microsoft Excel.

For details about point code inventory archived reports, see: ftp://ftp-eng.cisco.com/ftp/mwtm/docs/README-ExportReports.txt.

Q.752 Hourly Archived Reports

The Q752 Hourly Archived Reports page shows all archived MWTM hourly Q.752 reports for the server to which you connect, stored as downloadable *.zip* files.

On the Q752 Hourly Archived Reports page, the *.zip* files are archived by date; for example, the *sgmQ752Stats.2007-02-13.csv.zip* file contains the hourly Q.752 report for February 13, 2007.

Each archived *.zip* file contains a comma-separated value (CSV) text file with a summary report of all Q.752 links that the MWTM detected on that date. You can download the The *.zip* files and extract them.

To download a *.zip* file, click a filename, then save the file to a location of your choice. You can also import the file directly into Microsoft Excel.

For details about Q.752 hourly archived reports, see: ftp://ftp-eng.cisco.com/ftp/mwtm/docs/README-ExportReports.txt.

Viewing the MWTM Statistics Reports Logs

You can view a log that contains all messages pertaining to MWTM reports, and a display of the current values of MWTM report parameters and timers.

This section contains this information:

- Viewing the MWTM Report Log, page 12-59
- For details on viewing the MWTM report log, see Viewing the Report Log, page 11-26., page 12-59

Viewing the MWTM Report Log

For details on viewing the MWTM report log, see Viewing the Report Log, page 11-26.

Viewing the MWTM Report Parameters and Timers

The Report Parameters and Timers page shows the current values of report parameters and timers for the server to which you connect, and which is currently running the MWTM server.

To access the Report Parameters and Timers page:

Step 1 Choose **Reports** from the MWTM web navigation tree.

Step 2 Click the **Report Parameters & Timers** button in the toolbar.

Column	Description
Report Dir	Path and name of the directory in which the MWTM stores reports. The default reports directory is */opt/CSCOsgm/reports*, but you can change the reports directory using the **mwtm repdir** command (see mwtm repdir, page B-112).
Status	Indicates whether the MWTM should generate network statistics reports. For more information, see the description of the **mwtm statreps** [**disable** | **enable**] command in mwtm statreps servratio, page B-126.
ExportReports	Indicates whether the MWTM should generate network statistics reports in export format. For more information, see the description of the **mwtm statreps** [**export** | **noexport**] command in mwtm statreps export, page B-120.
LinkReports	Indicates whether the MWTM should generate summary reports of link and linkset statistics. For more information, see the description of the **mwtm statreps** [**link** | **nolink**] command in mwtm statreps link, page B-122.

Column	Description
AcctReports	Indicates whether the MWTM should generate MTP3 accounting statistics reports. For more information, see the description of the **mwtm statreps** [**acct** | **noacct**] command in mwtm statreps acct, page B-117.
GTTReports	Indicates whether the MWTM should generate GTT accounting statistics reports. For more information, see the description of the **mwtm statreps** [**gtt** | **nogtt**] command in mwtm statreps gtt, page B-121.
MLRReports	Indicates whether the MWTM should generate MLR statistics reports. For more information, see the description of the **mwtm statreps** [**mlr** | **nomlr**] command in mwtm statreps mlr, page B-123.
XUAReports	Indicates whether the MWTM should generate accounting statistics reports for application servers and application server processes. For more information, see the description of the **mwtm statreps** [**xua** | **noxua**] command in mwtm statreps xua, page B-128.
MSUReports	Indicates whether the MWTM should generate MSU rates reports. For more information, see the description of the **mwtm statreps** [**msu** | **nomsu**] command in mwtm statreps msu, page B-124.
IPLinks	Indicates whether the MWTM should include links that use the Stream Control Transmission Protocol (SCTP) IP transport protocol in network statistics reports. For more information, see the description of the **mwtm statreps** [**iplinks** | **noiplinks**] command in mwtm statreps iplinks, page B-122.
Q752Reports	Indicates whether the MWTM should generate Q.752 reports. For more information, see the description of the **mwtm statreps** [**q752** | **noq752**] command in mwtm statreps q752, page B-125.
NullCaps	Indicates whether the MWTM should include SCTP links that do not have planned send and receive capacities in network statistics reports. For more information, see the description of the **mwtm statreps** [**nullcaps** | **nonullcaps**] command in mwtm statreps nullcaps, page B-125.
TimeMode	Indicates the time mode for dates in network statistics reports. For more information, see the description of the **mwtm statreps timemode** [**12** | **24**] command in mwtm statreps timemode, page B-127.
DiskCheck	Indicates whether the MWTM should verify that a disk has at least 10 MB of space remaining before enabling network statistics reports. For more information, see the description of the **mwtm statreps** [**diskcheck** | **nodiskcheck**] command in mwtm statreps diskcheck, page B-119.
UtilRatio	Utilization values that are outside a normal range are indicated with a red status ball icon in the Send Utilization or Receive Utilization cell. A Utilization value is outside the normal range if the following condition is met: **Current Utilization >** *factor* *** Long-Term Utilization** This inequality is used to recognize increases in the Utilization value. Assuming the default factor of 1.5, the Current Utilization value must be less than or equal to 150% of the Long-Term Utilization value to be in the normal range. The default value for *factor* is **1.5**. For more information, see the description of the **mwtm statreps utilratio** command in mwtm statreps utilratio, page B-128.

Column	Description
ServRatio	In-Service values that are outside a normal range are indicated with a red status ball icon in the In-Service cell. An In-Service value is outside the normal range if the following condition is met: **Current In-Service <** *factor* *** Long-Term In-Service** This inequality is used to recognize drops in the In-Service value. Assuming the default factor of 0.95, the Current In-Service value must be greater than or equal to 95% of the Long-Term In-Service value to be in the normal range. For more information, see the description of the **mwtm statreps servratio** command in mwtm statreps servratio, page B-126.
Hourly Age	Indicates the maximum number of days the MWTM should archive hourly network statistics reports. For more information, see the description of the **mwtm statreps hourlyage** and **mwtm rephourlyage** commands in mwtm statreps servratio, page B-126.
Daily Age	Indicates the maximum number of days the MWTM should archive daily network statistics reports. For more information, see the description of the **mwtm statreps dailyage** and **mwtm repdailyage** commands in mwtm statreps dailyage, page B-119.
Custom Age	Indicates the maximum number of days the MWTM should archive custom network statistics reports. For more information, see the description of the **mwtm statreps custage** and **mwtm repcustage** commands in mwtm statreps custage, page B-118.
Max CSV Rows	Indicates the maximum number of rows the MWTM should include in export CSV files. For more information, see the description of the **mwtm statreps maxcsvrows** command in mwtm statreps maxcsvrows, page B-123.
Web Names	Indicates whether the MWTM should show real node names or display names in web pages. For more information, see the description of the **mwtm webnames** [**display** | **real**] command in the mwtm webnames, page B-83.
Web Util	Indicates whether the MWTM should display send and receive utilization for linksets and links as percentages or in Erlangs (E), in web pages. For more information, see the description of the **mwtm webutil** [**percent** | **erlangs**] command in mwtm who, page B-84.
Timer files	Indicates timer activities during the last report run by the MWTM. The timer file is useful for identifying how much time the MWTM spends gathering report data and generating reports.

Locating Stored ITP Reports

The MWTM stores all reports in the report files directory on the */reports* directory. If you installed the MWTM in:

- The default directory, */opt*, then the default report files directory is */opt/CSCOsgm/reports*.
- A different directory or used the **mwtm repdir** command to specify a new directory in which the MWTM should store report files, then the default report files directory resides in that directory.

Note For details on changing the default reports directory by using the **mwtm repdir** command, see Changing the MWTM Reports Directory, page 12-63.

The */reports* directory contains these subdirectories:

Subdirectory	Description
/custom	Contains all custom report files. These are the report files that you generate using these commands: **mwtm accstats**, **mwtm gttstats**, **mwtm linkstats**, **mwtm mlrstats**, **mwtm mtpevents**, **mwtm q752stats**, and **mwtm xuastats** **Note** A unique ID tag, specified when you enter the command, identifies each file. If the user does not specify an ID tag, the MWTM uses the process ID of the command.
/daily	Contains all daily report files for these statistics: • Accounting • GTT • MLR Files are stored in .Z format.
/etc	Contains additional files that the MWTM reporting scripts and web pages use, including the *nodes.include*, *linksets.include*, *nodes.exclude*, *linksets.exclude* and *filter.include* files, if they exist.
/exportdaily	Contains all daily report files for these statistics: • Link • Linkset • MLR • Accounting • GTT • MSU Files are edited and formatted for export and stored as *.zip* files in comma-separated value (CSV) format.
/exporthourly	Contains all hourly report files for these statistics: • Application server • Application server process • Link • Linkset • Q.752 Files are edited and formatted for export and stored as *.zip* files in CSV format.

Subdirectory	Description
/exportrolling	Contains all rolling report files for these statistics: • Application server • Application server process • Link • Linkset Files are edited and formatted for export and stored as *.zip* files in CSV format. The MWTM rebuilds the files in this subdirectory every hour.
/hourly	Contains all hourly report files for these statistics: • Application server • Application server process • Link • Linkset • Q.752 Files are stored in .Z format.

Changing the MWTM Reports Directory

On the server, you can change the directory in which the MWTM stores reports.

To change the MWTM report files directory, log in as the root user, as described in Starting the MWTM Client, page 4-2; or, as a superuser, as described in Specifying a Super User (Server Only), page 2-20, and enter:

```
# cd /opt/CSCOsgm/bin
# ./mwtm repdir directory
```

where *directory* is the new directory.

Note This command copies all files in the current directory to the new directory. If you log in as the superuser and you do not own the new directory, you might not be able to copy the files. In that case, you must specify a directory that you own or log in as the root user.

Customizing ITP Report Preferences

This table lists server CLI commands that allow you to customize your report preferences:

Command
mwtm evreps clean, page B-95
mwtm evreps cleancustom, page B-95
mwtm evreps diskcheck, page B-95
mwtm evreps hourlyage, page B-96

Command
mwtm evreps status, page B-97
mwtm evreps timer, page B-97
mwtm replog, page B-113
mwtm statreps clean, page B-117
mwtm statreps cleancustom, page B-118
mwtm statreps custage, page B-118 or mwtm repcustage, page B-112
mwtm statreps dailyage, page B-119 or mwtm repdailyage, page B-52
mwtm statreps diskcheck, page B-119
mwtm statreps servratio, page B-126 or mwtm rephourlyage, page B-53
mwtm statreps iplinks, page B-122
mwtm statreps nullcaps, page B-125
mwtm statreps servratio, page B-126
mwtm statreps status, page B-126
mwtm statreps timemode, page B-127
mwtm statreps timer, page B-127
mwtm statreps utilratio, page B-128
mwtm webnames, page B-83
mwtm who, page B-84