



CHAPTER 5

Third-Party Applications and MWTM Integration

This chapter describes the interfaces by which you can integrate third-party applications and the Cisco Mobile Wireless Transport Manager (MWTM) 6.1.1. The MWTM enables administrators to configure:

- MWTM links to third-party applications
- Third-party application links to resources within the MWTM



Note

This chapter assumes that the MWTM is installed in `/opt/CSCOSgm/`.

The following sections describe how to integrate third-party applications with MWTM 6.1.1:

- [Linking from Third-Party Applications to MWTM, page 5-1](#)
- [Linking from MWTM to Third-Party Applications, page 5-6](#)
- [A Summary of the Supported Object Types, page 5-11](#)

Linking from Third-Party Applications to MWTM

You can integrate third-party applications with MWTM by opening specially formatted Uniform Resource Locators (URLs). These URLs contain parameters that uniquely identify the MWTM resource you want to display.

The following sections describe the URL syntax that the MWTM recognizes:

- [Passing Parameters to MWTM, page 5-2](#)
- [Selecting a Navigation Tree Item, page 5-2](#)
- [Selecting a Network Element, page 5-2](#)
- [Selecting a Tab Associated with a Network Element, page 5-2](#)
- [Launching Historical Reports, page 5-3](#)
- [Launching Troubleshooting, page 5-5](#)

Passing Parameters to MWTM

You pass parameters to the MWTM web application through the URL query string. All URL query strings that are used to launch the MWTM use these standards:

- The URL query string is the portion of the URL that follows the first question mark (?).
- Each parameter has a name and value and has the format <name>=<value>.
- Substitute the space character contained in parameter values with %20.
- An ampersand (&) separates each parameter. The full URL interprets these parameters.
- Parameter names and values are case sensitive.

The parameters that the MWTM recognizes typically affect the content that displays. For example, the Fully Qualified Domain Name (FQDN) identifies the navigation tree item to select. The parameters that the MWTM does not recognize have no affect.

For more information about standards for URL query strings, refer to various web sites that discuss RFC1738 - Uniform Resource Locators (URL).

Selecting a Navigation Tree Item

When making a navigation tree selection, provide the FQDN parameter. The URL in this example demonstrates how to select Event History in the navigation tree:

```
http://mwtm-svr:1774/?FQDN=eventHistory
```

See [Table 5-6 on page 5-11](#) for a list of recognized FQDNs for navigation tree objects.

Selecting a Network Element

Provide the FQDN parameter when selecting a network element. The value for this parameter must be an FQDN that uniquely identifies a network element. For example, this URL selects the node with the name cisco1941:

```
http://mwtm-svr:1774/?FQDN=Node=cisco1941
```

You can also select a node by its primary IP address:

```
http://mwtm-svr:1774/?FQDN=Node=168.0.0.1
```

For the steps to build a network element FQDN, see [Building Fully Qualified Domain Names, page 2-5](#).

Selecting a Tab Associated with a Network Element

Using this format, third-party applications can launch the MWTM to a specific tab by opening a specially formatted URL:

```
<protocol>://<web_server>:<web_server_port>/?FQDN=<fqdn>&selectionId=<selection_id>
[&subSelectionId=<sub_selection_id>]
```

The angled brackets in this URL format denote variables. The square brackets denote optional portions of the URL. [Table 5-1](#) describes the variables and their legal values.

Table 5-1 Variables for Selecting a Tab Associated with a Network Element

Variable	Description	Legal Value	Example
protocol	The protocol to use: HTTP or HTTPS	http https	http
web_server	The host address of the web server on which the MWTM is installed	The address of any host on which the MWTM is installed	mwtm-svr
web_server_port	The port of the web server on which the MWTM is installed	The port number to access the MWTM web application	1774
selection_id	The top-level choice to select (typically a tab that belongs to a top-level tab pane)	Any selection listed in Table 5-7 that is a top-level choice	events
sub_selection_id	The non-top-level choice to select (typically a sub-tab that belongs to a non-top-level tab pane)	Any selection listed in Table 5-7 that is not a top-level choice	mlrTriggerConfig

The following is an example that links to the MLR Counters tab under MLR Details for a signaling point:

```
http://ems-lnx179:1774/mwtm/jsp/navMain.jsp?subSelectionId=mlrCounters&selectionId=mlrDetails&FQDN=Node=sgm-76-92c-2.cisco.comcom,SP=7200-1_TTC
```

See [Table 5-7 on page 5-14](#) for a list of recognized page selections.

Launching Historical Reports

The following sections describe the ways in which the third-party applications can launch MWTM historical reports:

- [Table Only Reports, page 5-3](#)
- [Graph and Table Reports, page 5-4](#)

Table Only Reports

Third-party applications can launch MWTM historical reports by opening a specially formatted URL:

```
<protocol>://<web_server>:<web_server_port>/?FQDN=<report_type_category_FQDN>
&reportTypeId=<report_type_id>
```

The angled brackets in this URL format denote variables. [Table 5-2](#) describes the variables and their legal values.

Table 5-2 Variables for Table Only Reports

Variable	Description	Legal Value	Example
protocol	The protocol to use: HTTP or HTTPS	http https	http
web_server	The host address of the web server on which the MWTM is installed	The address of any host on which the MWTM is installed	mwtm-svr
web_server_port	The port of the web server on which the MWTM is installed	Port number to access the MWTM web application	1774
report_type_category_FQDN	The fully qualified domain name of a report type category to be selected in the navigation tree	Any report type category FQDN in Table 5-8	newLinkReports
report_type_id	The report type that is to be shown	Any report type identifier in Table 5-8	linkHourly

The following is an example URL:

```
http://mwtm-svr:1774/?FQDN=newLinkReports&reportTypeId=linkHourly
```

Graph and Table Reports

Third-party applications can launch MWTM historical reports by opening a specially formatted URL:

```
<protocol>://<web_server>:<web_server_port>/?FQDN=<report_type_category_FQDN>&resultsType=<report_name>
```

The angled brackets in this URL format denote variables. [Table 5-3](#) describes the variables and their legal values.

Table 5-3 Variables for Graph and Table Reports

Variable	Description	Legal Value	Example
protocol	The protocol to use: HTTP or HTTPS	http https	http
web_server	The host address of the web server on which the MWTM is installed	The address of any host on which the MWTM is installed	mwtm-svr
web_server_port	The port of the web server on which the MWTM is installed	Port number to access the MWTM web application	1774

Table 5-3 Variables for Graph and Table Reports (continued)

Variable	Description	Legal Value	Example
report_type_category_FQDN	The fully qualified domain name of a report type category to be selected in the navigation tree	Any report type category FQDN in Table 5-9	newLinkReports
report_name	The report type that is to be shown	Any report name in Table 5-9	linkHourly

Launching Troubleshooting

Third-party applications can launch MWTM troubleshooting by opening a specially formatted URL:

```
<protocol>://<web_server>:<web_server_port>/?FQDN=<network_element_FQDN>&selectionId=troubleshooting&categoryId=<category> [&commandId=<command>]
```

The angled brackets in this URL format denote variables. The square brackets denote optional portions of the URL. [Table 5-4](#) describes the variables and their legal values.

Table 5-4 Variables for Launching Troubleshooting

Variable	Description	Legal Value	Example
protocol	The protocol to use: HTTP or HTTPS	http https	http
web_server	The host address of the web server on which the MWTM is installed	The address of any host on which the MWTM is installed	mwtm-svr
web_server_port	The port of the web server on which the MWTM is installed	Port number to access the MWTM web application	1774
network_element_FQDN	The fully qualified domain name of a network element that supports troubleshooting	Any FQDN associated with a network element	Node=cisco7600
category	The category to be selected. If no command is specified then this category is run.	Any category identifier defined in UserCommands.ts or SystemCommands.ts (in the <i>/etc</i> directory where MWTM is installed)	General
command	Identifies the command to be selected and run. This parameter is not present if a category is being run.	Any command identifier defined in UserCommands.ts or SystemCommands.ts (in the <i>/etc</i> directory where MWTM is installed)	System log

The following is an example URL:

```
http://mwtm-svr:1774/?FQDN=Node=cisco7600&selectionId=troubleshooting&categoryId=General&commandId=System%20log
```

Linking from MWTM to Third-Party Applications

The MWTM provides a method for extending its user interface with third-party launch commands. These launch commands create links to third-party applications from within the MWTM web and Java client interfaces.

The XML files in `/opt/CSCOsgm/etc/launch/` define these launch commands. When building a list of launch commands:

1. The MWTM parses only files that end in `.xml`.
2. The MWTM parses the launch commands each time a client connects to the server.
3. The client then caches the launch commands. If the launch commands change, then clients must restart to display the changes.

The MWTM provides a default set of launch command XML files. Some of these files do not end in `.xml` and are not enabled by default. You can enable them by renaming the files to end with `.xml`. For example, renaming `Cisco.launch.xml.example` to `Cisco.launch.xml` creates a launch command that will add a link to Cisco's website in the Tools menus of the MWTM client and web interfaces.

With these launch commands, you can associate various MWTM resources with links to third-party applications. For example, you might configure a node to have a link that opens a Telnet session to the node; the Telnet application is the third-party application that you integrate with the MWTM. The Telnet session link is context-sensitive; the primary IP address associated with the node is the target host for the Telnet session.

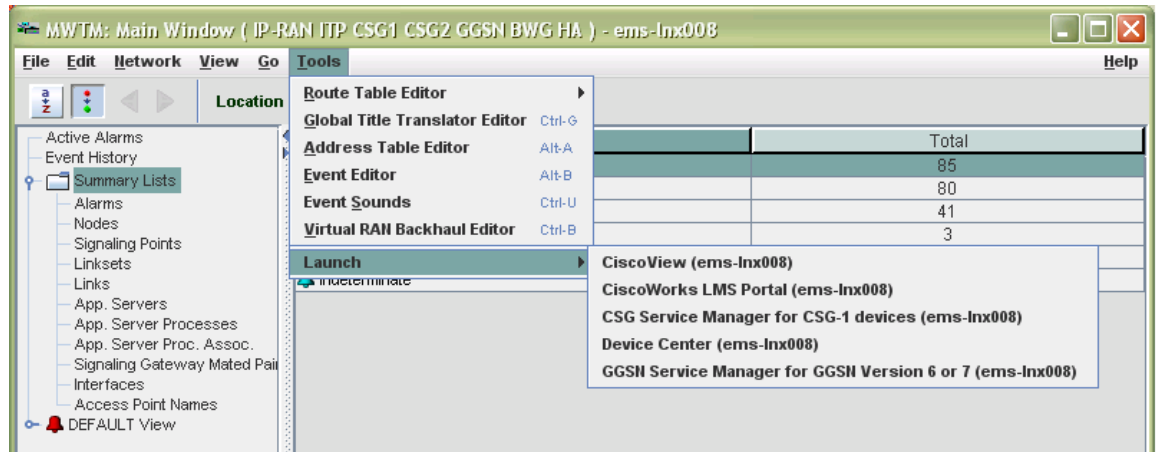
Links to third-party applications are available in the MWTM web interface appear as hyperlinks or menu items (see [Figure 5-1](#)).

Figure 5-1 Launch Commands in the MWTM Web Interface



Links to third-party applications are available in the MWTM client interface as menu items in the Tools menu bar or as menu items in the context-sensitive right-click menus (see [Figure 5-2](#)).

Figure 5-2 Launch Commands in the MWTM Client Interface



Launch Command Definition Formats

The format of the launch command definition file follows the XML 1.0 specification. For example, this launch command creates a link to the Cisco website:

```
<?xml version="1.0" encoding="UTF-8"?>
<Launch type="URL" global="true">
  <!-- caption for the launch command -->
  <Caption>Browse www.cisco.com</Caption>

  <!-- URL for the launch command -->
  <Content>http://www.cisco.com</Content>
</Launch>
```

The MWTM provides examples that help clarify the format of the launch command definition file. The examples are located in this directory: `/opt/CSCOSgm/etc/launch/`.

The following sections describe the tags in the launch command definition file:

- [Launch Command Root Element](#), page 5-8
- [Launch Command Caption](#), page 5-8
- [Launch Command Content](#), page 5-8
- [Launch Command Restrictions](#), page 5-8
- [Launch Command Context](#), page 5-10
- [Launch Command Templates](#), page 5-10

Launch Command Root Element

The root XML element for a launch command is always `Launch`. The `Launch` element supports the attributes listed in [Table 5-5](#).

Table 5-5 *Launch Element Attributes*

Attribute Name	Type	Values	Default
type	string	<ul style="list-style-type: none"> URL—The content of the launch command is a URL that opens in a web browser. Program—The content is an operating system command. 	URL
global	boolean	<ul style="list-style-type: none"> true—The launch command appears in the Tools menu. false—The launch command is specific to a resource and should not appear in the Tools menu. 	false

Launch Command Caption

A single `Caption` element appears under the `Launch` element. The body of the `Caption` element can be any string that conforms to the syntax of a Velocity template. The MWTM uses the Velocity Template Engine (see the velocity.apache.org web site) to evaluate the body of the `Caption` element.

Launch Command Content

A single `Content` element appears under the `Launch` element. The `Content` element does not support attributes. The content can be any string that conforms to the syntax of a Velocity template. The MWTM uses the Velocity Template Engine (see the velocity.apache.org web site) to evaluate the body of the `Content` element.

Launch Command Restrictions

If a launch command should appear only to users who use a specific operating system or users with specific roles, then a `Restrictions` element should appear under the `Launch` element.

Restricting Launch Commands by Operating System

Restrict a launch command to users of an operating system by nesting an `OperatingSystem` element under the `Restrictions` element. For example:

```
<?xml version="1.0" encoding="UTF-8"?>
<Launch type="Program" id="ping">
  ...
  <!-- only show this launch command in Solaris -->
  <Restrictions>
    <OperatingSystem>Solaris</OperatingSystem>
  </Restrictions>
  ...
</Launch>
```

The body of the `OperatingSystem` element should be one of these:

- Solaris (or SunOS)
- Windows

- Linux

These elements are not case sensitive.

Restricting Launch Commands by Roles

Restrict a launch command to users of specific operating system by nesting a Role or MinRole element under the Restrictions element.

To restrict a launch command to a minimum role:

```
<?xml version="1.0" encoding="UTF-8"?>
<Launch type="Program" id="ping">
  ...
  <!-- limited to Network Operators and higher -->
  <Restrictions>
    <MinRole>Network Operator</MinRole>
  </Restrictions>
  ...
</Launch>
```

To restrict a launch command to a specific set of roles:

```
<?xml version="1.0" encoding="UTF-8"?>
<Launch type="Program" id="ping">
  ...
  <!-- limited to Network Operators or Network Administrators -->
  <Restrictions>
    <Role>Network Operator</Role>
    <Role>Network Admin</Role>
  </Restrictions>
  ...
</Launch>
```

The body of the MinRole or Role element should be one of these:

- None
- User
- Power User
- Network Operator
- Network Admin
- System Admin
- 0 (corresponds to None)
- 1 (corresponds to User)
- 2 (corresponds to Power User)
- 3 (corresponds to Network Operator)
- 4 (corresponds to Network Admin)
- 5 (corresponds to System Admin)

These elements are not case sensitive.

Launch Command Context

Use the following guidelines when you create launch command Context elements:

- If the launch command applies to only particular resources (which is typical), nest the Context element under the Launch element. For example, a launch command might be associated only with *nodes* and not *interfaces*.
- You can specify *conditions* by nesting Condition elements under the Context element. All conditions must be true to display a launch command within a specific context.
- You can create multiple contexts for a launch command by adding multiple Context elements. A launch command appears within a specific context if any context of the launch command applies. A launch command applies when all the contexts associated with that context are true.
- Use the syntax of a Velocity template when creating the body of each Condition element. The condition must be an expression that is either true or false. When other expression types are used, the launch command will be ignored.

For example, the following launch command is available only if the network element's subtype matches the string "CDT", which stands for (Cisco Database for Telecommunication).

```
<?xml version="1.0" encoding="UTF-8"?>
<!--
    The priority of this launch command is higher than the default
    zero because it is intended to override the default Home Page
    launch definition which shares the same ID.
-->
<Launch type="URL" id="homePage" priority="10">
  <!-- caption for the launch command -->
  <Caption>Cisco Database for Telecommunication (CDT)</Caption>

  <!-- URL for the launch command -->
  <Content>http://{Node.RDN}:8080/</Content>

  <Context>
    <Condition>$This.NESubType == "CDT"</Condition>
  </Context>
</Launch>
```

Launch Command Templates

The Content, Caption, and Condition elements support the use of Velocity templates. The Velocity Template Engine (see <http://velocity.apache.org>) evaluates these templates and provides a simple syntax for token replacement. The Velocity Template Engine also supports normal flow control constructs such as FOR loops, IF-ELSE statements, and method calls.

You can refer to any system property in `/opt/CSCOs/gm/properties/System.properties` within a Velocity template by using a token in this format:

```
$System.PROPERTY_NAME
```

where PROPERTY_NAME is the key for a property.

Other properties are available to the Velocity template based on the context within the user interface. For example, if the user has selected a node, then the node properties are available through the \$Node property.

A Summary of the Supported Object Types

The MWTM third-party integration feature supports these object types:

Object Type	Description	For More Information
Inventory Tree	A tree structure organizes the network elements in the MWTM inventory. The inventory tree structure is similar to the MWTM client navigation tree.	For more information about inventory trees, see Understanding the MWTM Inventory Tree, page 2-1 . For a list of the navigation tree objects, see the table in Navigation Tree Objects, page 5-11 .
Fully Qualified Domain Names (FQDN)	A Fully Qualified Domain Name (FQDN) identifies a network element in the MWTM 6.1.1 inventory.	For more information about FQDNs, see Building Fully Qualified Domain Names, page 2-5 .
	Each FQDN component name consists of an object type and an object identifier.	For a list of the object types and object identifiers in MWTM 6.1.1, see Table 2-1 on page 2-7 .
Selection Objects	Selection objects in the details panel that may be selected by setting the selectionId and subSelectionId parameters.	See Selection Objects, page 5-14 .
Table Only Report Type Objects	Network level reports tree items and reports for table only reports.	See Table Only Report Type Objects, page 5-16 .
Graph and Table Report Type Objects	Network level reports tree items and reports for graph and table reports.	See Graph and Table Report Type Objects, page 5-18 .

Navigation Tree Objects

[Table 5-6](#) lists the navigation tree items.

Table 5-6 *Navigation Tree Objects*

Name	Identifier
Home	home
Administrative	administrative
Active Alarms	activeAlarms
Event History	eventHistory
Tools	tools
Groups	groups
Summary Lists	summaryLists

Table 5-6 *Navigation Tree Objects (continued)*

Name	Identifier
Summary Lists > Alarms	AlarmsSummaryList
Summary Lists > Nodes	NodeSummaryList
Summary Lists > Signal Points	SignalingPointSummaryList
Summary Lists > Linksets	LinksetSummaryList
Summary Lists > Links	LinkSummaryList
Summary Lists > App. Servers	ApplicationServerSummaryList
Summary Lists > App. Server Processes	ApplicationServerProcessSummaryList
Summary Lists > App. Server Proc. Assoc.	ApplicationServerProcessAssociationSummaryList
Summary Lists > Signaling Gateway Mated Pairs	SignalingGatewayMatedPairSummaryList
Summary Lists > Interfaces	InterfaceSummaryList
Summary Lists > Cards	CardSummaryList
Summary Lists > RAN Backhauls	RanBackhaulSummaryList
Summary Lists > RAN Shorthauls	RanShorthaulSummaryList
Summary Lists > Software Versions	softwareVersions
Summary Lists > Point Codes	pointCodeReports
Summary Lists > IP Addresses	ipAddressesReports
Summary Lists > PWE3 Backhauls	PWE3BackhaulSummaryList
Summary Lists > PWE3 Virtual Circuits	PWE3VirtualCircuitSummaryList
Summary Lists > Access Point Names	AccessPointNameSummaryList
Reports	Reports
Reports > Statistics	statisticsReports
Reports > Statistics > AS	asReports
Reports > Statistics > ASP	aspReports
Reports > Statistics > Events	eventReports
Reports > Statistics > GTT Rates	gttRatesReport
Reports > Statistics > Link	newLinkReports
Reports > Statistics > Link Multi-Day	linkReports
Reports > Statistics > Linkset	linksetStatisticsReports
Reports > Statistics > MLR	mlrReports
Reports > Statistics > MSU Rates	msuRatesReports
Reports > Statistics > RAN	ranStatsReporst
Reports > Statistics > SCTP	sctpStatsReports
Reports > Statistics > CPU / Memory	nodePerfReport
Reports > Accounting	accountingReports
Reports > Accounting > GTT	gttReports
Reports > Accounting > MTP3	mtp3Reports

Table 5-6 *Navigation Tree Objects (continued)*

Name	Identifier
Reports > Accounting > AS / ASP	xuaReports
Reports > Subscriber Count	subscriberCountReports
Reports > Subscriber Count > BWG	bwgReport
Reports > Subscriber Count > CSG2	csg2Report
Reports > Subscriber Count > GGSN	ggsnReport
Reports > Subscriber Count > HA	haReport
File Archive	allExportReports
File Archive > Events	networkEventsExportReports
File Archive > Reports	reportsExportReports
File Archive > Reports > Custom	customExportReports
File Archive > Reports > Daily	dailyExportReports
File Archive > Reports > Hourly	hourlyExportReports
File Archive > Reports > 15 Minutes	quarterHourlyExportReports
File Archive > Reports > Rolling	rollingExportReports
File Archive > Reports > APN	apnExportReports
File Archive > Reports > AS	asExportReports
File Archive > Reports > CPU	cpuExportReports
File Archive > Reports > Memory	memExportReports
File Archive > Reports > ASP	aspExportReports
File Archive > Reports > CSG	csgExportReports
File Archive > Reports > GTT Accounting	gttExportReports
File Archive > Reports > GTT Rates	gttRatesExportReports
File Archive > Reports > GGSN	ggsnExportReports
File Archive > Reports > HA	haExportReports
File Archive > Reports > GTT	gttExportReports
File Archive > Reports > Link	linkExportReports
File Archive > Reports > Linkset	linksetExportReports
File Archive > Reports > MLR	mlrExportReports
File Archive > Reports > MTP3/AS Acct	mtp3ExportReports
File Archive > Reports > MTP3/AS Events	mtp3HourlyExportReports
File Archive > Reports > SCTP	sctpExportReports
File Archive > Reports > Point Code	pointCodesExportReports
File Archive > Reports > Q752	q752ExportReports
File Archive > Reports > MSU	msuExportReports
<i>View root</i>	deviceRoot

Selection Objects

Table 5-7 lists the selection objects in the details panel that may be selected by setting the selectionId and subSelectionId parameters.

Table 5-7 Selection Objects

Name	Identifier	Exists For	Type
Alarms	alarms	All network elements	Tab
APN	apnGeneralStats	GGSN nodes	Sub tab of Statistics
APN Instances	apnInstances	Access Point names	Tab
APN Throughput statistics	apnThroughputStats	GGSN nodes	view type of the APN sub tab of Statistics
Details	details	All network elements	Tab
Errors	errors	GSM interfaces, UMTS interfaces, and RAN backhuls	Tab
Events	events	All network elements	Tab
GGSN Nodes	ggsnNodes	Access Point names	Tab
Global	global	BWG node	Sub tab of Statistics
Global GGSN Statistics	ggnsStats	GGSN nodes	Sub tab of Statistics
Global HA Statistics	haStats	HA nodes	Sub tab of Statistics
GTT Map Status	gttMapStatus	Signaling points	Tab
GTT Statistics	gttStatistics	Signaling points	Tab
Interface Details	interfaceDetails	Links	Tab
Interface Errors	interfaceErrors	Interfaces that support MIB-II statistics	Tab
Interface Performance	interfacePerformance	Interfaces that support MIB-II statistics	Tab
IP Local Pool Configuration	ipLocalPoolConfig	HA nodes and GGSN nodes	Sub tab of Statistics
IP Local Pool Statistics	ipLocalPoolStats	HA nodes and GGSN nodes	Sub tab of Statistics
ITP Access Lists	itpAccessLists	Signaling points	Tab
Linkset Access Lists	linksetAccessLists	Non-virtual linksets	Tab
Local peer	local	Object with peer	Event or Troubleshooting local sub tab

Table 5-7 Selection Objects (continued)

MLR Counters	mlrCounters	Signaling points (sub-tab of MLR details)	Tab
MLR Details	mlrDetails	Signaling points	Tab
MLR Trigger Config	mlrTriggerConfig	Signaling points (sub-tab of MLR details)	Tab
MLR Trigger Results	mlrTriggerResults	Signaling points (sub-tab of MLR details)	Tab
MTP3 Errors	mtp3errors	ITP nodes	Tab
Non-Stop Operation	nonStopOperation	All network elements that support Non-Stop Operation	Tab
Notes	notes	All network elements	Tab
Paths	paths	BWG node	Sub tab of Statistics
Performance	performance	GSM interfaces, UMTS interfaces, and RAN backhails	Tab
Provision	provision	All network elements that support provisioning	Tab
PWE3 Statistics	pwe3Statistics	RAN-O node with pseudo wire	Tab
PWE3 Virtual Circuits	pwe3VirtualCircuits	PWE3 Backhails	Tab
Q752 Measurements	q752Measurements	Links	Tab
RAN Shorthauls	ranShorthauls	RAN backhails	Tab
Remote peer	remote	Object with peer	Event or Troubleshooting remote sub tab
Reports	reports	All network elements with reports	Tab
Route Detail	routeDetail	Signaling points	Tab
SCTP Assoc. Config Details	sctpAssocConfigDetails	Links	Tab
SCTP Assoc. Stats Details	sctpAssocStatsDetails	Links	Tab
SGSN Throughput	sgsnStats	GGSN nodes	Sub tab of Statistics
Shorthaul Errors	errors	RAN shorthauls	Tab
Shorthaul Performance	performance	RAN shorthauls	Tab
Statistics	statistics	BWG nodes, CSG2 nodes, links, and linksets	Tab
Status Contributors	statusContributors	All network elements with children	Tab
Status Details	statusDetails	ITP links	Tab
Summary	summary	—	Tab

Table 5-7 Selection Objects (continued)

Syslog	syslog	All network elements that support Syslog	Tab
TDM Statistics	tdmStatistics	E1 and T1 DS1 interfaces	Tab
Tools	tools	Access Point names	Tab
Trap Configuration	trapConfiguration	ITP nodes (requires role 4 or 5 privileges)	Tab
Trap Settings	trapSettings	MWR and RAN Service Module nodes (requires role 4 or 5 privileges)	Tab
Troubleshooting	troubleshooting	All network elements that support troubleshooting	Tab
User Groups	userGroups	BWG node	Sub tab of Statistics

Table Only Report Type Objects

Table 5-8 lists the network-level reports tree items and reports for table only reports.

Table 5-8 Table Only Report Type Objects

Report Type Category	Report Type Category FQDN	Report Type Name	Report Type Identifier
MSU Rates	msuRatesReports	MSU Load 15 Minutes	itp15MinMsuLoad
MSU Rates	msuRatesReports	MSU Load Daily	itpDailyMsuLoad
MSU Rates	msuRatesReports	MSU Load Hourly	itpHourlyMsuLoad
MSU Rates	msuRatesReports	MSU Peaks 15 Minutes	itp15MinMsuPeaks
MSU Rates	msuRatesReports	MSU Peaks Daily	itpDailyMsuPeaks
MSU Rates	msuRatesReports	MSU Peaks Hourly	itpHourlyMsuPeaks
Point Codes	pointCodeReports	Point Codes	pointCodesReport
MTP3	mtp3Reports	MTP3 Accounting Daily	mtp3DailyAccounting
AS	asReports	AS Daily	asDaily
AS	asReports	AS Hourly	asHourly
AS	asReports	AS Peaks Daily	asDailyPeaks
ASP	aspReports	ASP Daily	aspDaily
ASP	aspReports	ASP Hourly	aspHourly
ASP	aspReports	ASP MTP3 Daily	aspDailyMtp3
ASP	aspReports	ASP MTP3 Peaks Daily	aspDailyMtp3Peaks
ASP	aspReports	ASP Peaks Daily	aspDailyPeaks
Events	eventReports	Event Metrics	eventMetrics
GTT	gttReports	GTT Accounting Daily	gttDailyAccounting

Table 5-8 Table Only Report Type Objects (continued)

MLR	mlrReports	MLR Aborts Daily	mlrDailyAborts
MLR	mlrReports	MLR Continues Daily	mlrDailyContinues
MLR	mlrReports	MLR Processed Daily	mlrDailyProcessed
MLR	mlrReports	MLR ResultInvokes Daily	mlrDailyResultInvokes
MLR	mlrReports	MLR RuleMatches Daily	mlrDailyRuleMatches
MLR	mlrReports	MLR SubTriggers Daily	mlrDailySubTriggers
MLR	mlrReports	MLR Triggers Daily	mlrDailyTriggers
Link Multi-Day	linkReports	Link Multi-Day	linkMultiDayReport

Graph and Table Report Type Objects

Table 5-9 lists the network level reports tree items and reports for graph and table reports.

Table 5-9 *Graph and Table Report Type Objects*

Report Type Category	Report Type Category FQDN	Results Type/ Report Type Name	Duration	Output Type
CPU / Memory	nodePerfReport	CPU Peak Utilization Daily	last7Days or last30Days or last90Days	TABLE or GRAPH or CSV
CPU / Memory	nodePerfReport	CPU Average Utilization Daily	last7Days or last30Days or last90Days	TABLE or GRAPH or CSV
CPU / Memory	nodePerfReport	Memory Peak Utilization Daily	last7Days or last30Days or last90Days	TABLE or GRAPH or CSV
CPU / Memory	nodePerfReport	Memory Average Utilization Daily	last7Days or last30Days or last90Days	TABLE or GRAPH or CSV
GTT Rates	gttRatesReport	GTT Rate Peak Daily	last7Days or last30Days or last90Days	TABLE or GRAPH or CSV
GTT Rates	gttRatesReport	GTT Rate Average Daily	last7Days or last30Days or last90Days	TABLE or GRAPH or CSV
Link	newLinkReports	Link Hourly Statistics	lastHour or last6Hours or last12Hours or last24Hours	TABLE or GRAPH or CSV
Link	newLinkReports	Link Daily Statistics	last7Days or last30Days or last90Days	TABLE or GRAPH or CSV
Link	newLinkReports	Link PeaksDaily Statistics	last7Days or last30Days or last90Days	TABLE or GRAPH or CSV
Linkset	linksetStatisticsReports	Linkset Hourly Statistics	lastHour or last6Hours or last12Hours or last24Hours	TABLE or GRAPH or CSV
Linkset	linksetStatisticsReports	Linkset Daily Statistics	last7Days or last30Days or last90Days	TABLE or GRAPH or CSV
Linkset	linksetStatisticsReports	Linkset PeaksDaily Statistics	last7Days or last30Days or last90Days	TABLE or GRAPH or CSV

Table 5-9 Graph and Table Report Type Objects (continued)

RAN	ranStatsReport	Backhaul Performance Daily	last7Days or last30Days or last90Days	TABLE or GRAPH or CSV
RAN	ranStatsReport	Backhaul Errors Daily	last7Days or last30Days or last90Days	TABLE or GRAPH or CSV
RAN	ranStatsReport	Shorthaul Performance Daily	last7Days or last30Days or last90Days	TABLE or GRAPH or CSV
RAN	ranStatsReport	GSM Errors Daily	last7Days or last30Days or last90Days	TABLE or GRAPH or CSV
RAN	ranStatsReport	UMTS Errors Daily	last7Days or last30Days or last90Days	TABLE or GRAPH or CSV
RAN	ranStatsReport	PWE3 Performance Daily	last7Days or last30Days or last90Days	TABLE or CSV
SCTP	sctpStatsReport	SCTP Performance Daily	last7Days or last30Days or last90Days	TABLE or GRAPH or CSV
SCTP	sctpStatsReport	SCTP Errors Daily	last7Days or last30Days or last90Days	TABLE or GRAPH or CSV

■ A Summary of the Supported Object Types

