CHAPTER 6

Understanding Basic Object Functions

You can use the Cisco Mobile Wireless Transport Manager (MWTM) to view basic information about any discovered MWTM object, including its associated objects, status, and other important information.

To view basic information for an object, click **Summary Lists** in the navigation tree of the MWTM main window, then select one of these objects:

Note Objects only appear if your network contains that particular object type.

Summary List	Applicable Network Type
Alarms	All networks
Nodes	All networks
Signaling Points **Note** In a multi-instance network, the signaling point name has the format *pointcode*:*instanceName*. In a multi-instance network, the MWTM does not display signaling points that are only partly configured (that is, the variant and network name are configured, but not the primary point code).	ITP only
Linksets	
Links	
Application Servers	
Application Server Processes	
Application Server Process Associations	
Signaling Gateway Mated Pairs	
Interfaces	All networks

Summary List	Applicable Network Type
Cards	RAN-O only
RAN Backhauls	
RAN Shorthauls	
PWE3 Backhauls	
PWE3 Virtual Circuits	
Access Point Names	mSEF and GGSN only
Software Versions	All networks
Point Codes	ITP only
IP Addresses	All networks

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Displaying Object Windows

To display an object window, in the MWTM main window, under Summary Lists in the navigation tree, click the object type. The object window appears in the right pane.

Example:

To display the nodes table, choose **Summary Lists > Nodes**. The nodes table appears.

- The table lists all objects of the object type that you chose in the navigation tree. To see the fully qualified domain name (FQDN) of any object in the table, hover over the object with the mouse. A tooltip lists the FQDN for the object.
- Some table columns may be hidden by default. To see a list all columns, right-click on any column, and check the box for the columns that you want to expose.
- Tables are sorted based on the column that is highlighted. To sort by a different column, simply click the desired column.

Tip For detailed information on working in tables, see Navigating Table Columns, page 5-22.

Object windows provide information about all objects of a specific type that the MWTM has discovered and can contain:

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Right-Click Menu for All Objects

To see the right-click menu for all objects, in the MWTM main window, under Summary Lists in the navigation tree, select the object type and right-click it. The right-click menu contains:

Menu Command	Description
Show in New Window	Opens the object window in a new window.
Back > List of Windows	Navigates back to a window viewed in this session. The MWTM maintains a list of up to 10 Back windows.
Forward > List of Windows	Navigates forward to a window viewed in this session. The MWTM maintains a list of up to 10 Forward windows.

Note The right-click menu, available by clicking on a specific object in the right pane, is described in Viewing the Right-Click Menu for an Object, page 8-2.

Alarms Table

The alarms table displays a count of alarms by node and severity. To display the alarms table, choose **Summary Lists > Alarms**.

Note Some table columns are hidden by default. Right-click on the web table header to see all columns.

The alarms table contains:

Column	Description
Internal ID	Internal ID of the node. The internal ID is a unique ID for every object, which the MWTM assigns for its own internal use. This ID can also be useful when the TAC is debugging problems.
Node	Name of the node.
Total	Total number of alarms for the node.
Critical	Total number of critical alarms for the node.
Major	Total number of major alarms for the node.
Minor	Total number of minor alarms for the node.
Warning	Total number of warning alarms for the node.
Informational	Total number of informational alarms for the node.
Indeterminate	Total number of indeterminate alarms for the node.

Nodes Table

The nodes table displays information about nodes that the MWTM has discovered. To display the nodes table, choose **Summary Lists > Nodes**. The nodes table contains:

Column	Description
Internal ID	Internal ID of the node. The internal ID is a unique ID for every object, which the MWTM assigns for its own internal use. This ID can also be useful when the TAC is debugging problems.
Name	Name of the node.
Primary SNMP Address	IP address of the node, which SNMP uses to poll the node. (There might be other IP addresses on the node that are not the primary SNMP address.)
CLLI Code (ITP only)	Common Language Location Identification code for the node. A CLLI code is a standardized 11-character identifier that uniquely identifies the geographic location of the node. If the node has no CLLI code configured, this field is blank.
Node Type	Description of the hardware platform that supports a feature. **ITP Node Types** • Cisco2650XM, Cisco2651XM, Cisco 2651 • Cisco2811 • Cisco7204VXR, Cisco7206VXR • Cisco7301 • Cisco7507, Cisco7507mx, Cisco7507z, Cisco7513, Cisco7513mx, Cisco7513z • Cisco 7603, Cisco 7603s, Cisco7604, Cisco7606, Cisco7606s, Cisco7609, Cisco7609s, Cisco7613

Column	Description
Node Type (continued)	**IPRAN Node Types** • Cell Site Routers (CSR): – CiscoMWR-1941-DC—Cisco MWR-1941-DC-A series router – CiscoMWR-2941-DC—Cisco MWR-2941-DC series router – Cisco3825—Integrated Services Router • CiscoONS15454—Cisco ONS 15454 SONET multiplexer • RAN_SVC—RAN Service Module in the Cisco ONS 15454 • Cisco 7603, Cisco 7603s, Cisco7604, Cisco7606, Cisco7606s, Cisco7609, Cisco7609s, Cisco7613 • Cisco ME3400 Metro Ethernet switch • Cisco ME3750 Metro Ethernet switch • Skyla cards **mSEF Node Types** • CiscoSAMI—Service Application Module for IP (SAMI) • CiscoMWAM—Multiprocessor WAN Application Module (MWAM) • Cisco 7603, Cisco 7603s, Cisco7604, Cisco7606, Cisco7606s, Cisco7609, Cisco7609s, Cisco7613 **Other Node Types** • IPDevice—IP device, other than those listed previously. You can assign this icon to an unknown node if you know that it is an IP device. • Unknown—MWTM is unable to determine the node type. • Linux—Hardware platform for Cisco Database for Telecommunications (CDT) • Cisco ME 3400 Series Ethernet Access Switches

Column	Description
Feature	Primary function performed by a node type: • ITP—IP Transfer Protocol • IPRAN features: – ONS—Optical Networking Service – RAN_SVC—RAN Service – CSR—Cell Site Router – Cisco 7600 devices with Pseudowire Virtual Circuits configured – Cisco Metro Ethernet switch (fault support only) • mSEF features: – CSG1 or CSG2—Content Services Gateway – GGSN—Gateway GPRS Support Node – HA—Home Agent – BWG Gateway—Broadband Wireless Gateway • CDT—Cisco Data for Telecommunications (CDT) • Generic—Any pollable device not classified as one of the above types.
Software Version	Version of node's software.
Serial Number	Serial number of the node.
Uptime	Time the node has been up, in days, hours, minutes, and seconds.
Reboot Reason	Reason for the last reboot of the node.
Ignored	Indicates whether to include the node when aggregating and displaying MWTM status information: • Check the check box to include the node. This is the default setting. • Uncheck the check box to exclude the node. **Note** Not applicable for unmanaged nodes. Users with authentication level Network Operator (level 3) and higher can edit this field. Users with authentication level Power User (level 2) and higher can edit the Unignore field.
Process Traps	Indicates whether the MWTM should process traps from this node. This field is read-only.
Trap Polling	Indicates whether or not trap polling is enabled for this node. By default, trap polling is enabled for all nodes except for IP-RAN nodes. This field is read only. For IP-RAN nodes, you can modify this setting by using the following commands: • To enable trap polling for this node, set ipran-mib snmp-access to inBand on the node. • To disable trap polling for this node, set ipran-mib snmp-access to outOfBand on the node. **Note** For information about in-band and out-of-band management, see IP-RAN Specific FAQs, page C-20.

Column	Description
Report Polling	Indicates whether or not report polling is enabled for this node. This field is read-only for the web client, but editable in the java client for ITP nodes. For IP-RAN nodes, you can modify this setting by using the following commands: • To enable report polling for this node, set ipran-mib location to aggSite on the node. • To disable report polling for this node, set ipran-mib location to cellSite on the node. For all other nodes, this field is not editable.
Notes	Indicates whether a note is associated with the node.
Events (MWTM client only)	Indicates whether the node has received any events. If the node has received an event, an icon appears in the table cell. Clicking the icon clears the event and takes you to the Recent Events tab for the node.
Last Status Change	Date and time that the status of the node last changed.
Severity	Indicates the alarm severity for the chosen node. The severity can be Critical, Major, Minor, Warning, Informational, Indeterminate, Unmanaged, or Normal. See Managing Alarms and Events, page 9-1 for more information.
Status	Current status of the node. Possible values are:  Active  Discovering  Polling  Unknown  Unmanaged  Waiting  Warning For detailed definitions of each status, see Status Definitions for Signaling Gateway Mated Pairs, page E-7.
Status Reason	Reason for the current status of the node. For a full list of possible reasons, see the *stateReasons.html* file. If you installed the MWTM in: • The default directory, */opt*, then the file is located at */opt/CSCOsgm/apache/share/htdocs/eventHelp* directory. • A different directory, then the help directory and file are located in that directory. If the cell is too small to show all of the status reason, place the cursor over the cell to see the full text in a tooltip. The status reasons appear in order of decreasing magnitude. If two or more reasons apply, the reason of greatest magnitude appears first. If the status reason is Unsupported Configuration, correct the configuration and enter the **mwtm cleandiscover** command to delete all current network data and begin a discovery of the network. If the status reason remains Unsupported Configuration, enter the **mwtm clean** command to restore the MWTM server to a state that would exist after a new installation of the MWTM, excluding the log files, which the MWTM retains. To also remove the log files, enter the **mwtm cleanall** command. For more information on the use of these commands, see Appendix B, "Command Reference."

Signaling Points Table

The signaling points table displays information about the signaling points that the MWTM has discovered. To display the signaling points table, choose **Summary Lists > Signaling Points**. The signaling points table contains:

Column	Description
Internal ID	Internal ID of the signaling point. The internal ID is a unique ID for every object, which the MWTM assigns for its own internal use. It can also be useful when the TAC is debugging problems.
Name	Name of the signaling point.
Node	Name of the node associated with this signaling point.
Instance Number	Number of the instance associated with the signaling point.
Network Name	Name of the instance associated with the signaling point.
Point Code	Primary point code of the signaling point.
Variant	SS7 protocol variant. Valid variants are: • ANSI • China • ITU • NTT • TTC
Network Indicator	Determines the type of call that is being placed. Valid values are: • **National**—National-bound call. The MWTM routes national calls through the national network. • **NationalSpare**—National-bound call, used in countries in which more than one carrier can share a point code. In those countries, the Network Indicator differentiates the networks. • **International**—International-bound call. The MWTM forwards international-bound calls to an STP pair that acts as an international gateway. • **InternationalSpare**—International-bound call; used in countries in which more than one carrier can share a point code. In those countries, the Network Indicator differentiates the networks.
Ignored	Indicates whether to include the signaling point when aggregating and displaying MWTM status information: • Uncheck the check box to include the signaling point. This is the default setting. • Check the check box to exclude the signaling point. Users with authentication level Network Operator (level 3) and higher can edit this field. Users with authentication level Power User (level 2) and higher can edit the Unignore field.
Notes	Indicates whether a note is associated with the signaling point.
Events (MWTM client only)	Indicates whether the signaling point has received any events. If the signaling point has received an event, an icon appears in the table cell. Clicking the icon clears the event and takes you to the Recent Events tab for the signaling point.
Last Status Change	Date and time that the status of the signaling point last changed.

Column	Description
Severity	Indicates the alarm severity for the chosen signaling point. The severity can be Critical, Major, Minor, Warning, Informational, Indeterminate, Unmanaged, or Normal. See Managing Alarms and Events, page 9-1 for more information.
Status	Current status of the signaling point. Possible values are:  Active  Unknown  Unmanaged  Warning For detailed definitions of each status, see Status Definitions for Signaling Points, page E-7.
Status Reason	Reason for the current status of the signaling point. For a full list of possible reasons, see the *stateReasons.html* file. If you installed the MWTM in: • The default directory, */opt*, then the file resides at */opt/CSCOsgm/apache/share/htdocs/eventHelp* directory. • A different directory, then the help directory and file reside in that directory. If the cell is too small to show all of the status reason, place the cursor over the cell to see the full status reason in a mouse over help popup. The status reasons are listed in order of decreasing magnitude. If two or more reasons apply, the reason of greatest magnitude appears. If the status reason is Unsupported Configuration, correct the configuration and enter the **mwtm cleandiscover** command to delete all current network data and begin a discovery of the network. If the status reason remains Unsupported Configuration, enter the **mwtm clean** command to restore the MWTM server to a state that would exist after a new installation of the MWTM, excluding the log files, which the MWTM retains. To also remove the log files, enter the **mwtm cleanall** command. For more information on the use of these commands, see Appendix B, "Command Reference."

Linksets Table

The linksets table displays information about the linksets that the MWTM has discovered. To display the linksets table, choose **Summary Lists > Linksets**.

Tip Linksets that are associated with nodes that are excluded from the current view are not visible in the linksets table. See Creating a New View, page 7-7, for more information about excluding nodes.

The linksets table contains:

Column	Description
Internal ID	Internal ID of the linkset. The internal ID is a unique ID for every object, which the MWTM assigns for its own internal use. It can also be useful when the TAC is debugging problems.
Name	Name of the linkset.
Node	Node associated with the linkset.

Column	Description
Signaling Point	Signaling point associated with the linkset.
Local Point Code	Point code of the primary signaling point for the linkset.
Adj Point Code	Point code of the adjacent signaling point for the linkset.
Linkset Type	Type of linkset, which the MWTM determines by examining the links defined in the linkset. Possible linkset types are: • **HSL**—The links in this linkset use the SS7-over-ATM high-speed protocol. • **SCTPIP**—The links in this linkset use the Stream Control TCP/IP transport protocol. • **Serial**—The links in this linkset use the serial SS7 signaling protocol. • **Mixed**—The links in this linkset are of two or more types. (This configuration is not recommended.) • **Virtual**—The links in this linkset are virtual links, which connect signaling point instances running on the same node. The MWTM does not poll virtual linksets, nor does it display real-time data or accounting statistics for virtual linksets. **Note** Prior to IOS release 12.2(23)SW1, the user manually created virtual linksets on multi-instance nodes. In and after that release, users can now automatically create virtual linksets. • **Other**—No links have been defined for this linkset.
Links	Total number of links in the linkset.
Active Links	Number of links in the linkset that are `Active`.
Congested Links	Number of links in the linkset that are `Congested`.
Ignored	Indicates whether to include the linkset when aggregating and displaying MWTM status information: • Uncheck the check box to include the linkset. This is the default setting. • Check the check box to exclude the linkset. Users with authentication level Network Operator (level 3) and higher can edit this field. Users with authentication level Power User (level 2) and higher can edit the Unignore field.
Notes	Indicates whether a note is associated with the linkset.
Events (MWTM client only)	Indicates whether the linkset has received any events. If the linkset has received an event, an icon appears in the table cell. Clicking the icon clears the event and takes you to the Recent Events tab for the linkset.
Last Status Change	Date and time that the status of the linkset last changed.
Severity	Indicates the alarm severity for the chosen linkset. The severity can be Critical, Major, Minor, Warning, Informational, Indeterminate, Unmanaged, or Normal. See Managing Alarms and Events, page 9-1 for more information.

Column	Description
Status	Current status of the linkset. Possible values are:  Active  Shutdown  Unavailable  Unknown  Warning For detailed definitions of each status, see Status Definitions for Linksets, page E-7.
Status Reason	Reason for the current status of the signaling gateway-mated pair. For a full list of possible reasons, see the *stateReasons.html* file. If you installed the MWTM in: • The default directory, */opt*, then the file is located at */opt/CSCOsgm/apache/share/htdocs/eventHelp* directory. • A different directory, then the help directory and file are located in that directory. If the cell is too small to show all of the status reason, place the cursor over the cell to see the full text in a tooltip. The status reasons are listed in order of decreasing magnitude. If two or more reasons apply, the reason of greatest magnitude appears first. If the status reason is Unsupported Configuration, correct the configuration and enter the **mwtm cleandiscover** command to delete all current network data and begin a discovery of the network. If the status reason remains Unsupported Configuration, enter the **mwtm clean** command to restore the MWTM server to a state that would exist after a new installation of the MWTM, excluding the log files, which the MWTM retains. To also remove the log files, enter the **mwtm cleanall** command. For more information on the use of these commands, see Appendix B, "Command Reference."

Links Table

The links table displays information about the links that the MWTM has discovered. To display the links table, choose **Summary Lists > Links**. The links table contains:

Column	Description
Internal ID	Internal ID of the link. The internal ID is a unique ID for every object, which the MWTM assigns for its own internal use. This ID can also be useful when the TAC is debugging problems.
Node	Name of the node associated with the link.
Signaling Point	Name of the signaling point associated with the link.
Linkset	Name of the linkset associated with the link.
SLC	Signaling link code (SLC) ID for the link.
Type	Type of link. Possible link types are: • **HSL**—The link uses the SS7-over-ATM high-speed protocol. • **SCTPIP**—The link uses the Stream Control TCP/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.
Congestion Level	Indicates the level of congestion on the link. A link is congested if it has too many packets waiting to be sent. This condition could result from the failure of an element in your network. Possible values for the Congestion Level field are `None`, indicating no congestion, and `1` to `3`, indicating levels of congestion from very light (`1`) to very heavy (`3`).
Ignored	Indicates whether to include the link when aggregating and displaying MWTM status information: • Uncheck the check box to include the link. This is the default setting. • Check the check box to exclude the link. Users with authentication level Network Operator (level 3) and higher can edit this field. Users with authentication level Power User (level 2) and higher can edit the Unignore field.
Notes	Indicates whether a note is associated with the link.
Events (MWTM client only)	Indicates whether the link has received any events. If the link has received an event, an icon appears in the table cell. Clicking the icon clears the event and takes you to the Recent Events tab for the link.
Last Status Change	Date and time that the status of the link last changed.
Severity	Indicates the alarm severity for the chosen link. The severity can be Critical, Major, Minor, Warning, Informational, Indeterminate, Unmanaged, or Normal. See Managing Alarms and Events, page 9-1 for more information.

Column	Description
Status	Current status of the link. Possible values are:  Active  Blocked  Failed  InhibitLoc  InhibitRem  Shutdown  Unknown  Warning For detailed definitions of each status, see Status Definitions for Links, page E-6.
Status Reason	Reason for the current status of the signaling gateway-mated pair. For a full list of possible reasons, see the *stateReasons.html* file. If you installed the MWTM in: • The default directory, */opt*, then the file is located at */opt/CSCOsgm/apache/share/htdocs/eventHelp* directory. • A different directory, then the help directory and file are located in that directory. If the cell is too small to show all of the status reason, place the cursor over the cell to see the full text in a tooltip. The status reasons appear in order of decreasing magnitude. If two or more reasons apply, the reason of greatest magnitude appears first. If the status reason is Unsupported Configuration, correct the configuration and enter the **mwtm cleandiscover** command to delete all current network data and begin a discovery of the network. If the status reason remains Unsupported Configuration, enter the **mwtm clean** command to restore the MWTM server to a state that would exist after a new installation of the MWTM, excluding the log files, which the MWTM retains. To also remove the log files, enter the **mwtm cleanall** command. For more information on the use of these commands, see Appendix B, "Command Reference."

Application Servers Table

The application servers table displays information about the application servers that the MWTM has discovered. To display the application servers table, choose **Summary Lists > App. Servers**. The application servers table contains:

Column	Description
Internal ID	Internal ID of the application server. The internal ID is a unique ID for every object, that the MWTM assigns for its own internal use. This ID can also be useful when the TAC is debugging problems.
Name	Name of the application server.
Node	Name of the node associated with the application server.
Signaling Point	Name of the signaling point associated with the application server.

Column	Description
Protocol	Protocol associated with the application server. Possible values are: • **M3UA**—MTP3-User Adaptation. • **SUA**—SCCP-User Adaptation.
Routing Key	Routing key associated with the application server. The application server bases its routing decisions on the routing key value.
Traffic Mode	Method by which the application server forwards requests to its active application server processes. Possible values are: • **overRide**—One application server process takes over all traffic for the application server, possibly overriding any currently active application server process in the application server. • **broadcast**—Every active application server process receives the same message. • **loadBind**—Each application server process shares in the traffic distribution with every other currently active application server process, based on application server process bindings. • **loadRndRobin**—Each application server process shares in the traffic distribution with every other currently active application server process, using a round-robin algorithm. • **undefined**—The traffic mode is not defined. The first application server process that becomes active defines the traffic mode.
Application Server Process Associations	Total number of application server processes associated with the application server.
Active ASP Associations	Number of currently active application server processes associated with the application server.
Ignored	Indicates whether to include the application server when aggregating and displaying MWTM status information: • Uncheck the check box to include the application server. This is the default setting. • Check the check box to exclude the application server. Users with authentication level Network Operator (level 3) and higher can edit this field. Users with authentication level Power User (level 2) and higher can edit the Unignore field.
Notes	Indicates whether a note is associated with the application server.
Events (MWTM client only)	Indicates whether the application server has received any events. If the application server has received an event, an icon appears in the table cell. Clicking the icon clears the event and takes you to the Recent Events tab for the application server.
Last Status Change	Date and time that the status of the application server last changed.
Severity	Indicates the alarm severity for the chosen application server. The severity can be Critical, Major, Minor, Warning, Informational, Indeterminate, Unmanaged, or Normal. See Managing Alarms and Events, page 9-1 for more information.

Column	Description
Status	Current status of the application server. Possible values are: Active Down Inactive Pending Shutdown Unknown Warning For detailed definitions of each status, see Status Definitions for Application Servers, page E-4.
Status Reason	Reason for the current status of the signaling gateway-mated pair. For a full list of possible reasons, see the *stateReasons.html* file. If you installed the MWTM in: • The default directory, */opt*, then the file is located at */opt/CSCOsgm/apache/share/htdocs/eventHelp* directory. • A different directory, then the help directory and file are located in that directory. If the cell is too small to show all of the status reason, place the cursor over the cell to see the full text in a tooltip. The status reasons are listed in order of decreasing magnitude. If two or more reasons apply, the reason of greatest magnitude appears first. If the status reason is Unsupported Configuration, correct the configuration and enter the **mwtm cleandiscover** command to delete all current network data and begin a discovery of the network. If the status reason remains Unsupported Configuration, enter the **mwtm clean** command to restore the MWTM server to a state that would exist after a new installation of the MWTM, excluding the log files, which the MWTM retains. To also remove the log files, enter the **mwtm cleanall** command. For more information on the use of these commands, see Appendix B, "Command Reference."

Application Server Processes Table

The application server processes table displays information about the application server processes that the MWTM has discovered. To display the application server processes table, choose **Summary Lists > App. Server Processes**. The application server processes table contains:

Column	Description
Internal ID	Internal ID of the application server process. The internal ID is a unique ID for every object, that the MWTM assigns for its own internal use. This ID can also be useful when the TAC is debugging problems.
Name	Name of the application server process.
Node	Name of the node associated with the application server process.
Local IP Address	Local IP address that the application server process is currently using.
Local Port	Local port number that the application server process is currently using.

Column	Description
Ignored	Indicates whether to include the application server process when aggregating and displaying MWTM status information: • Uncheck the check box to include the application server process. This is the default setting. • Check the check box to exclude the application server process. Users with authentication level Network Operator (level 3) and higher can edit this field. Users with authentication level Power User (level 2) and higher can edit the Unignore field.
Notes	Indicates whether a note is associated with the application server process.
Events (MWTM client only)	Indicates whether the application server process has received any events. If the application server process has received an event, an icon appears in the table cell. Clicking the icon clears the event and takes you to the Recent Events tab for the application server process.
Last Status Change	Date and time that the status of the application server process last changed.
Severity	Indicates the alarm severity for the chosen application server process. The severity can be Critical, Major, Minor, Warning, Informational, Indeterminate, Unmanaged, or Normal. See Managing Alarms and Events, page 9-1 for more information.
Status	Current status of the application server process. Possible values are:  Unknown  Unmanaged For detailed definitions of each status, see Status Definitions for Application Server Processes, page E-4.
Status Reason	Reason for the current status of the application server process. For a full list of possible reasons, see the *stateReasons.html* file. If you installed the MWTM in: • The default directory, */opt*, then the file is located at */opt/CSCOsgm/apache/share/htdocs/eventHelp* directory. • A different directory, then the help directory and file are located in that directory. If the cell is too small to show all of the status reason, place the cursor over the cell to see the full text in a tooltip. The status reasons are listed in order of decreasing magnitude. If two or more reasons apply, the reason of greatest magnitude appears first. If the status reason is Unsupported Configuration, correct the configuration and enter the **mwtm cleandiscover** command to delete all current network data and begin a discovery of the network. If the status reason remains Unsupported Configuration, enter the **mwtm clean** command to restore the MWTM server to a state that would exist after a new installation of the MWTM, excluding the log files, which the MWTM retains. To also remove the log files, enter the **mwtm cleanall** command. For more information on the use of these commands, see Appendix B, "Command Reference."

Application Server Process Associations Table

The application server process associations table displays information about the application server process associations that the MWTM has discovered. To display the application server process associations table, choose **Summary Lists > App. Server Proc. Assoc.** The application server process associations table contains:

Column	Description
Internal ID	Internal ID of the application server process association. The internal ID is a unique ID for every object, that the MWTM assigns for its own internal use. The ID can also be useful to TAC when troubleshooting problems.
Name	Name of the application server process association.
Node	Name of the node associated with the application server process association.
Signaling Point	Name of the signaling point associated with the application server process association.
Application Server	Name of the application server associated with the application server process association.
Protocol	Protocol associated with the application server process association. Possible values are: • **M3UA**—MTP3-User Adaptation. • **SUA**—SCCP-User Adaptation.
Congestion Level	Indicates the level of congestion of an application server process association. An application server process association is congested if it has too many packets waiting to be sent. This condition could result from the failure of an element in your network. Possible values for the Congestion Level field are `None`, indicating no congestion, and `1` to `7`, indicating levels of congestion from very light (`1`) to very heavy (`7`).
Ignored	Indicates whether to include the application server process association when aggregating and displaying MWTM status information: • Uncheck the check box to include the application server process association. This is the default setting. • Check the check box to exclude the application server process association. Users with authentication level Network Operator (level 3) and higher can edit this field. Users with authentication level Power User (level 2) and higher can edit the Unignore field.
Notes	Indicates whether a note is associated with the application server process association.
Events (MWTM client only)	Indicates whether the application server process association has received any events. If the application server process association has received an event, an icon appears in the table cell. Clicking the icon clears the event and takes you to the Recent Events tab for the application server process association.
Last Status Change	Date and time that the status of the application server process association last changed.
Severity	Indicates the alarm severity for the chosen application server process association. The severity can be Critical, Major, Minor, Warning, Informational, Indeterminate, Unmanaged, or Normal. See Managing Alarms and Events, page 9-1 for more information.

Column	Description
Status	Current status of the application server process association. Possible values are: Active Blocked Down Inactive Pending Shutdown Unknown Warning For detailed definitions of each status, see Status Definitions for Application Server Process Associations, page E-4.
Status Reason	Reason for the current status of the application server process association. For a full list of possible reasons, see the *stateReasons.html* file. If you installed the MWTM in: • The default directory, */opt*, then the file is located at */opt/CSCOsgm/apache/share/htdocs/eventHelp* directory. • A different directory, then the help directory and file are located in that directory. If the cell is too small to show all of the status reason, place the cursor over the cell to see the full text in a tooltip. The status reasons are listed in order of decreasing magnitude. If two or more reasons apply, the reason of greatest magnitude appears first. If the status reason is Unsupported Configuration, correct the configuration and enter the **mwtm cleandiscover** command to delete all current network data and begin a discovery of the network. If the status reason remains Unsupported Configuration, enter the **mwtm clean** command to restore the MWTM server to a state that would exist after a new installation of the MWTM, excluding the log files, which the MWTM retains. To also remove the log files, enter the **mwtm cleanall** command. For more information on the use of these commands, see Appendix B, "Command Reference."

Signaling Gateway Mated Pairs Table

The signaling gateway-mated pairs table displays information about the signaling gateway-mated pairs that the MWTM has discovered. To display the signaling gateway-mated pairs table, choose **Summary Lists > Signaling Gateway Mated Pairs**. The signaling gateway-mated pairs table contains:

Column	Description
Internal ID	Internal ID of the signaling gateway-mated pair. The internal ID is a unique ID for every object, that the MWTM assigns for its own internal use. The ID can also be useful to TAC when troubleshooting problems.
Name	Name of the signaling gateway-mated pair.
Mate	Name of the node associated with the mate of the signaling gateway-mated pair.
Node	Name of the node associated with the signaling gateway-mated pair.

Column	Description
Congestion Level	Indicates the congestion level of a signaling gateway-mated pair. A signaling gateway-mated pair is congested if it has too many packets waiting to be sent. This condition could result from the failure of an element in your network. Possible values for the Congestion Level field are `None`, indicating no congestion, and `1` to `7`, indicating levels of congestion from very light (`1`) to very heavy (`7`).
Ignored	Indicates whether to include the signaling gateway-mated pair when aggregating and displaying MWTM status information: • Uncheck the check box to include the signaling gateway-mated pair. This is the default setting. • Check the check box to exclude the signaling gateway-mated pair. Users with authentication level Network Operator (level 3) and higher can edit this field. Users with authentication level Power User (level 2) and higher can edit the Unignore field.
Notes	Indicates whether a note is associated with the signaling gateway-mated pair.
Events (MWTM client only)	Indicates whether the signaling gateway-mated pair has received any events. If the signaling gateway-mated pair has received an event, an icon appears in the table cell. Clicking the icon clears the event and takes you to the Recent Events tab for the signaling gateway-mated pair.
Last Status Change	Date and time that the status of the signaling gateway-mated pair last changed.
Severity	Indicates the alarm severity for the chosen signaling gateway-mated pair. The severity can be Critical, Major, Minor, Warning, Informational, Indeterminate, Unmanaged, or Normal. See Managing Alarms and Events, page 9-1 for more information.

Column	Description
Status	Current status of the signaling gateway-mated pair. Possible values are: Active Down Inactive Shutdown Unknown Warning For detailed definitions of each status, see Status Definitions for Signaling Gateway Mated Pairs, page E-7.
Status Reason	Reason for the current status of the signaling gateway-mated pair. For a full list of possible reasons, see the *stateReasons.html* file. If you installed the MWTM in: • The default directory, */opt*, then the file is located at */opt/CSCOsgm/apache/share/htdocs/eventHelp* directory. • A different directory, then the help directory and file are located in that directory. If the cell is too small to show all of the status reason, place the cursor over the cell to see the full text in a tooltip. The status reasons are listed in order of decreasing magnitude. If two or more reasons apply, the reason of greatest magnitude appears first. If the status reason is Unsupported Configuration, correct the configuration and enter the **mwtm cleandiscover** command to delete all current network data and begin a discovery of the network. If the status reason remains Unsupported Configuration, enter the **mwtm clean** command to restore the MWTM server to a state that would exist after a new installation of the MWTM, excluding the log files, which the MWTM retains. To also remove the log files, enter the **mwtm cleanall** command. For more information on the use of these commands, see Appendix B, "Command Reference."

Interfaces Table

The interfaces table displays information about the ITP or RAN interfaces that the MWTM has discovered. To display the interfaces table, choose **Summary Lists > Interfaces**. The interfaces table contains:

Column	Description
Internal ID	Internal ID of the interface. The internal ID is a unique ID for every object, that the MWTM assigns for its own internal use. The ID can also be useful to TAC when troubleshooting problems.
Name	Name of the interface. The node specifies the name of the interface.
Node	Name of the node with the interface.
Interface Type	Type of interface.
Send Speed	Interface send speed in bits per second.
Receive Speed	Interface receive speed in bits per second.
Interface Index	Unique numeric identifier of the interface. This identifier appears in the interface table (ifTable).

Column	Description
Maximum Packet Size	The maximum packet size that traverses the interface in bytes.
Physical Address	The physical address of the interface. If a physical address does not apply to the interface, `N/A` appears in the table cell.
Ignored	Indicates whether to include the interface when aggregating and displaying MWTM status information: • Uncheck the check box to include the interface. This is the default setting. • Check the check box to exclude the interface. Users with authentication level Network Operator (level 3) and higher can edit this field. Users with authentication level Power User (level 2) and higher can edit the Unignore field.
Notes	Indicates whether a note is associated with the interface.
Events (MWTM client only)	Indicates whether the interface has received any events. If the interface has received an event, an icon appears in the table cell. Clicking the icon clears the event and takes you to the Recent Events tab for the interface.
Last Status Change	Date and time that the status of the interface last changed.
Severity	Indicates the alarm severity for the chosen interface. The severity can be Critical, Major, Minor, Warning, Informational, Indeterminate, Unmanaged, or Normal. See Managing Alarms and Events, page 9-1 for more information.
Status	Current status of the interface. Possible values are:  Active  Down  Inactive  Shutdown  Unknown  Warning For detailed definitions of each status, see Status Definitions for RAN-O Interfaces and Virtual Circuits, page E-8.
Admin Status	Desired state of the interface: • Up • Down • Testing • Shutdown For detailed definitions of each status, see Admin Status, page E-8.

Column	Description
Operational Status	Current operational state of the interface: • Up • Down • Testing • Unknown • Dormant • Not present • Lower layer down For detailed definitions of each status, see Operational Status, page E-8.
Status Reason	Reason for the current status of the interface. For a full list of possible reasons, see the *stateReasons.html* file. If you installed the MWTM in: • The default directory, */opt*, then the file is located at */opt/CSCOsgm/apache/share/htdocs/eventHelp* directory. • A different directory, then the help directory and file are located in that directory. If the cell is too small to show all of the status reason, place the cursor over the cell to see the full text in a tooltip. The status reasons are listed in order of decreasing magnitude. If two or more reasons apply, the reason of greatest magnitude appears first. If the status reason is Unsupported Configuration, correct the configuration and enter the **mwtm cleandiscover** command to delete all current network data and begin a discovery of the network. If the status reason remains Unsupported Configuration, enter the **mwtm clean** command to restore the MWTM server to a state that would exist after a new installation of the MWTM, excluding the log files, which the MWTM retains. To also remove the log files, enter the **mwtm cleanall** command. For more information on the use of these commands, see Appendix B, "Command Reference."

Cards Table

The cards table displays information about the cards in the ONS 15454 IPRAN node that the MWTM has discovered. To display the cards table, choose **Summary Lists > Cards**. The cards table contains:

Column	Description
Internal ID	Internal ID of the card. The internal ID is a unique ID for every object, that the MWTM assigns for its own internal use. The ID can also be useful to TAC when troubleshooting problems.
Name	Name of the card. The node specifies the name of the card.
Node	Name of the node in which the card resides.
Card Type	Type of the card in the node.
Model Name	Model name of the card (can include the part number).
Description	Description of the card.
Slot Number	The slot number of the card in the node.

Column	Description
Ignored	Indicates whether to include the card when aggregating and displaying MWTM status information: • Uncheck the check box to include the card. This is the default setting. • Check the check box to exclude the card. Users with authentication level Network Operator (level 3) and higher can edit this field. Users with authentication level Power User (level 2) and higher can edit the Unignore field.
Notes	Indicates whether a note is associated with the card.
Events (MWTM client only)	Indicates whether the card has received any events. If the card has received an event, an icon appears in the table cell. Clicking the icon clears the event and takes you to the Recent Events tab for the card.
Last Status Change	Date and time that the status of the card last changed.
Severity	Indicates the alarm severity for the chosen card. The severity can be Critical, Major, Minor, Warning, Informational, Indeterminate, Unmanaged, or Normal. See Managing Alarms and Events, page 9-1 for more information.
Status	Current status of the card. Possible values are:  Active  Down  Inactive  Shutdown  Unknown  Warning For detailed definitions of each status, see Status Definitions for Cards, page E-10.
Status Reason	Reason for the current status of the card. For a full list of possible reasons, see the *stateReasons.html* file. If you installed the MWTM in: • The default directory, */opt*, then the file is located at */opt/CSCOsgm/apache/share/htdocs/eventHelp* directory. • A different directory, then the help directory and file are located in that directory. If the cell is too small to show all of the status reason, place the cursor over the cell to see the full text in a tooltip. The status reasons are listed in order of decreasing magnitude. If two or more reasons apply, the reason of greatest magnitude appears first. If the status reason is Unsupported Configuration, correct the configuration and enter the **mwtm cleandiscover** command to delete all current network data and begin a discovery of the network. If the status reason remains Unsupported Configuration, enter the **mwtm clean** command to restore the MWTM server to a state that would exist after a new installation of the MWTM, excluding the log files, which the MWTM retains. To also remove the log files, enter the **mwtm cleanall** command. For more information on the use of these commands, see Appendix B, "Command Reference."
Hardware Version	Hardware version of the card.
Firmware Version	Firmware version of the card.
Software Version	Software version of the card.

RAN Backhauls Table

The RAN backhauls table displays information about the RAN backhauls that the MWTM has discovered. To display the RAN backhauls table, choose **Summary Lists > RAN Backhauls**. The RAN backhauls table contains:

Column	Description
Internal ID	Internal ID of the RAN backhaul. The internal ID is a unique ID for every object, that the MWTM assigns for its own internal use. The ID can also be useful to TAC when troubleshooting problems.
Name	Name of the RAN backhaul.
Node	Name of the node on which this RAN backhaul resides.
Location	Location of the node (either at the cell site or the aggregation node site).
Peer Name	Name of the object's peer.
Peer Node	Name of the node to which the peer object belongs.
Type	Indicates whether the RAN backhaul is a normal backhaul or a virtual backhaul (see Creating Virtual RAN Backhauls, page 8-129).
User Send Bandwidth User Receive Bandwidth	The bandwidth that the user specified for the backhaul. Values for send and receive bandwidths will be different if the interface is asymmetrical. To change this value, see Editing Properties for a RAN-O Backhaul, page 6-37.
System Send Bandwidth System Receive Bandwidth	The bandwidth that the system specifies for the backhaul. Values for send and receive bandwidths will be different if the interface is asymmetrical.
Ignored	Indicates whether to include the RAN backhaul when aggregating and displaying MWTM status information: • Uncheck the check box to include the RAN backhaul. This is the default setting. • Check the check box to exclude the RAN backhaul. Users with authentication level Network Operator (level 3) and higher can edit this field. Users with authentication level Power User (level 2) and higher can edit the Unignore field.
Notes	Indicates whether a note is associated with the RAN backhaul.
Events (MWTM client only)	Indicates whether the RAN backhaul has received any events. If the RAN backhaul has received an event, an icon appears in the table cell. Clicking the icon clears the event and takes you to the Recent Events tab for the RAN backhaul.
Last Status Change	Date and time that the status of the RAN backhaul last changed.
Severity	Indicates the alarm severity for the chosen RAN backhaul. The severity can be Critical, Major, Minor, Warning, Informational, Indeterminate, Unmanaged, or Normal. See Managing Alarms and Events, page 9-1 for more information.
Status	Current status of the RAN backhaul. Possible values are:  Active  Failed  Warning For detailed definitions of each status, see Status Definitions for RAN-O and PWE3 Backhauls, page E-10.

Column	Description
Status Reason	Reason for the current status of the RAN backhaul. For a full list of possible reasons, see the *stateReasons.html* file. If you installed the MWTM in: • The default directory, */opt*, then the file is located at */opt/CSCOsgm/apache/share/htdocs/eventHelp* directory. • A different directory, then the help directory and file are located in that directory. If the cell is too small to show all of the status reason, place the cursor over the cell to see the full text in a tooltip. The status reasons are listed in order of decreasing magnitude. If two or more reasons apply, the reason of greatest magnitude appears first. If the status reason is Unsupported Configuration, correct the configuration and enter the **mwtm cleandiscover** command to delete all current network data and begin a discovery of the network. If the status reason remains Unsupported Configuration, enter the **mwtm clean** command to restore the MWTM server to a state that would exist after a new installation of the MWTM, excluding the log files, which the MWTM retains. To also remove the log files, enter the **mwtm cleanall** command. For more information on the use of these commands, see Appendix B, "Command Reference."
Accept Threshold[1]	The percentage threshold setting below which the backhaul is considered acceptable.
Warning Threshold[1]	The percentage threshold setting beyond which the backhaul issues a warning. Subsequent warnings are issued only if the value goes below the Acceptable Threshold.
Overload Threshold[1]	The percentage threshold setting beyond which the backhaul is considered overloaded. Subsequent overload messages are issued only if the value goes below the Warning Threshold.

1. To change the default setting, see Editing Properties for a RAN-O Backhaul, page 6-37.

RAN Shorthauls Table

The RAN shorthauls table displays information about the RAN shorthauls that the MWTM has discovered. To display the RAN shorthauls table, choose **Summary Lists > RAN Shorthauls**. The RAN shorthauls table contains:

Column	Description
Internal ID	Internal ID of the RAN shorthaul. The internal ID is a unique ID for every object, that the MWTM assigns for its own internal use. The ID can also be useful to TAC when troubleshooting problems.
Name	Name of the RAN shorthaul.
Node	Name of the node to which the RAN shorthaul is connected.
Type	Type of shorthaul, either GSM or UMTS.
Optimized	Whether or not the traffic is optimized.
Location	Location of the node (either at the cell site or the aggregation node site).
Peer Name	Name of the object's peer.
Peer Node	Name of the node to which the peer object belongs.
Interface Type	Type of interface (for example, a point-to-point interface or an ATM interface).
Send Speed	Send speed of the interface in bits per second (for example, 1.98M).

Column	Description
Receive Speed	Receive Speed of the interface in bits per second (for example, 1.98M).
Interface Index	Unique numeric identifier of the interface. This identifier appears in the interface table (ifTable).
Maximum Packet Size (bytes)	Maximum packet size on the interface in bytes.
Physical Address	Physical address, if applicable, of the interface.
Ignored	Indicates whether to include the RAN shorthaul when aggregating and displaying MWTM status information: • Uncheck the check box to include the RAN shorthaul. This is the default setting. • Check the check box to exclude the RAN shorthaul. Users with authentication level Network Operator (level 3) and higher can edit this field. Users with authentication level Power User (level 2) and higher can edit the Unignore field.
Notes	Indicates whether a note is associated with the RAN shorthaul.
Events (MWTM client only)	Indicates whether the RAN shorthaul has received any events. If the RAN shorthaul has received an event, an icon appears in the table cell. Clicking the icon clears the event and takes you to the Recent Events tab for the RAN shorthaul.
Last Status Change	Date and time that the status of the RAN shorthaul last changed.
Severity	Indicates the alarm severity for the chosen RAN shorthaul. The severity can be Critical, Major, Minor, Warning, Informational, Indeterminate, Unmanaged, or Normal. See Managing Alarms and Events, page 9-1 for more information.
Last Status Change	Date and time that the status of the shorthaul last changed.
Status	Current status of the RAN shorthaul. For detailed definitions of each status, see Status Definitions for RAN-O and PWE3 Backhauls, page E-10.
Admin Status	Desired state of the interface: • Up • Down • Testing • Shutdown For detailed definitions of each status, see Admin Status, page E-8.
Operational Status	Current operational state of the interface: • Up • Down • Testing • Unknown • Dormant • Not present • Lower layer down For detailed definitions of each status, see Operational Status, page E-8.

Column	Description
Status Reason	Reason for the current status of the RAN shorthaul. For a full list of possible reasons, see the *stateReasons.html* file. If you installed the MWTM in: • The default directory, */opt*, then the file is located at */opt/CSCOsgm/apache/share/htdocs/eventHelp* directory. • A different directory, then the help directory and file are located in that directory. If the cell is too small to show all of the status reason, place the cursor over the cell to see the full text in a tooltip. The status reasons are listed in order of decreasing magnitude. If two or more reasons apply, the reason of greatest magnitude appears first. If the status reason is Unsupported Configuration, correct the configuration and enter the **mwtm cleandiscover** command to delete all current network data and begin a discovery of the network. If the status reason remains Unsupported Configuration, enter the **mwtm clean** command to restore the MWTM server to a state that would exist after a new installation of the MWTM, excluding the log files, which the MWTM retains. To also remove the log files, enter the **mwtm cleanall** command. For more information on the use of these commands, see Appendix B, "Command Reference."

PWE3 Backhauls Table

The PWE3 backhauls table displays information about the PWE3 backhauls that the MWTM has discovered. A PWE3 backhaul is an object created for the logical grouping of PWE3 virtual circuits on a given node that have the same remote peer.

To display the PWE3 backhauls table, choose **Summary Lists > PWE3 Backhauls**. The PWE3 backhauls table contains:

Column	Description
Internal ID	Internal ID of the PWE3 backhaul. The internal ID is a unique ID for every object, that the MWTM assigns for its own internal use. The ID can also be useful to TAC when troubleshooting problems.
Name	Name of the PWE3 backhaul.
Node	Name of the node on which this PWE3 backhaul resides.
Peer Name	Name of the object's peer.
Peer Node	Name of the node to which the peer object belongs.
Ignored	Indicates whether to include the PWE3 backhaul when aggregating and displaying MWTM status information: • Uncheck the check box to include the PWE3 backhaul. This is the default setting. • Check the check box to exclude the PWE3 backhaul. Users with authentication level Network Operator (level 3) and higher can edit this field. Users with authentication level Power User (level 2) and higher can edit the Unignore field.
Notes	Indicates whether a note is associated with the PWE3 backhaul.
Events (MWTM client only)	Indicates whether the PWE3 backhaul has received any events. If the PWE3 backhaul has received an event, an icon appears in the table cell. Clicking the icon clears the event and takes you to the Recent Events tab for the PWE3 backhaul.

Column	Description
Severity	Indicates the alarm severity for the chosen PWE3 backhaul. The severity can be Critical, Major, Minor, Warning, Informational, Indeterminate, Unmanaged, or Normal. See Managing Alarms and Events, page 9-1 for more information.
Last Status Change	Date and time that the status of the PWE3 backhaul last changed.
Status	Current status of the PWE3 backhaul. Possible values are: Active Warning Unknown
Status Reason	Reason for the current status of the PWE3 backhaul. For a full list of possible reasons, see the *stateReasons.html* file. If you installed the MWTM in: • The default directory, */opt*, then the file is located at */opt/CSCOsgm/apache/share/htdocs/eventHelp* directory. • A different directory, then the help directory and file are located in that directory. If the cell is too small to show all of the status reason, place the cursor over the cell to see the full text in a tooltip. The status reasons are listed in order of decreasing magnitude. If two or more reasons apply, the reason of greatest magnitude appears first. If the status reason is Unsupported Configuration, correct the configuration and enter the **mwtm cleandiscover** command to delete all current network data and begin a discovery of the network. If the status reason remains Unsupported Configuration, enter the **mwtm clean** command to restore the MWTM server to a state that would exist after a new installation of the MWTM, excluding the log files, which the MWTM retains. To also remove the log files, enter the **mwtm cleanall** command. For more information on the use of these commands, see Appendix B, "Command Reference."

PWE3 Virtual Circuits

The PWE3 virtual circuits table displays information about the PWE3 virtual circuits that the MWTM has discovered. To display the PWE3 virtual circuits table, choose **Summary Lists > PWE3 Virtual Circuits**. The PWE3 virtual circuits table contains:

Column	Description
Internal ID	Internal ID of the PWE3 virtual circuit. The internal ID is a unique ID for every object, that the MWTM assigns for its own internal use.
Name	Name of the PWE3 virtual circuits.
Node	Name of the node on which this PWE3 virtual circuits resides.
Peer Name	Name of the object's peer.
Peer Node	Name of the node to which the peer object belongs.
Type	Indicates the service to be carried over this virtual circuit type.
PSN Type	Packet Switched Network (PSN) type on which this virtual circuit is carried.
ID	Virtual circuit identifier.

Column	Description
Primary	Indicates whether the virtual circuit is primary. A virtual circuit that services traffic is considered primary. A virtual circuit that provides redundancy is not primary.
Remote Interface String	If provided by the protocol, displays the interface description of the remote side of the virtual circuit.
Description	Each virtual circuit is associated to an interface in the ifTable of the node as part of the service configuration. If specified, this field displays the description of the interface.
Ignored	Indicates whether to include the PWE3 virtual circuits when aggregating and displaying MWTM status information: • Uncheck the check box to include the PWE3 virtual circuits. This is the default setting. • Check the check box to exclude the PWE3 virtual circuits. Users with authentication level Network Operator (level 3) and higher can edit this field. Users with authentication level Power User (level 2) and higher can edit the Unignore field.
Notes	Indicates whether a note is associated with the PWE3 virtual circuits.
Events (MWTM client only)	Indicates whether the PWE3 virtual circuits have received any events. If the PWE3 virtual circuits have received an event, an icon appears in the table cell. Clicking the icon clears the event and takes you to the Recent Events tab for the PWE3 virtual circuits.
Severity	Indicates the alarm severity for the chosen PWE3 virtual circuits. The severity can be Critical, Major, Minor, Warning, Informational, Indeterminate, Unmanaged, or Normal. See Managing Alarms and Events, page 9-1 for more information.
Last Status Change	Date and time that the status of the virtual circuit last changed.
Status	Current status of the PWE3 virtual circuits. Possible values are:  Active  Shutdown  Unknown  Warning
Admin Status	Desired state of the interface: • Up • Down • Testing • Shutdown For detailed definitions of each status, see Admin Status, page E-8.
Oper Status	Indicates the actual combined operational status of this virtual circuit. Oper Status is *up* if both Inbound Oper Status and Outbound Oper Status are in the *up* state. • Up • Down For detailed definitions of each status, see Operational Status, page E-8.
Inbound Oper Status	Indicates the actual operational status of this virtual circuit in the inbound direction.

Column	Description
Outbound Oper Status	Indicates the actual operational status of this virtual circuit in the outbound direction.
Status Reason	Reason for the current status of the virtual circuits. For a full list of possible reasons, see the *stateReasons.html* file. If you installed the MWTM in: • The default directory, */opt*, then the file is located at */opt/CSCOsgm/apache/share/htdocs/eventHelp* directory. • A different directory, then the help directory and file are located in that directory. If the cell is too small to show all of the status reason, place the cursor over the cell to see the full text in a tooltip. The status reasons are listed in order of decreasing magnitude. If two or more reasons apply, the reason of greatest magnitude appears first. If the status reason is Unsupported Configuration, correct the configuration and enter the **mwtm cleandiscover** command to delete all current network data and begin a discovery of the network. If the status reason remains Unsupported Configuration, enter the **mwtm clean** command to restore the MWTM server to a state that would exist after a new installation of the MWTM, excluding the log files, which the MWTM retains. To also remove the log files, enter the **mwtm cleanall** command. For more information on the use of these commands, see Appendix B, "Command Reference."

Access Point Names Table

The Access Point Names (APN) table displays information about the APNs the MWTM has discovered. To display the Access Point Names table, choose **Summary Lists > Access Point Names**. The APN table contains:

Column	Description
Internal ID	Not shown by default, the Internal ID of the APN is a unique ID for every object the MWTM assigns for its own internal use. The ID can also be useful to TAC when troubleshooting problems.
Name	Name of the APN node.
Index	The Index assigned to the access point.
Ignored	Indicates whether to include the APN when aggregating and displaying MWTM status information: • Uncheck the check box to include the APN. This is the default setting. • Check the check box to exclude the APN. Users with authentication level Network Operator (level 3) and higher can edit this field. Users with authentication level Power User (level 2) and higher can edit the Unignore field.
Notes	Indicates whether a note is associated with the APN.
Severity	Indicates the alarm severity for the chosen APN. The severity can be Critical, Major, Minor, Warning, Informational, Indeterminate, Unmanaged, or Normal. See Managing Alarms and Events, page 9-1 for more information.

Software Versions Table

The Software Versions table lists the software versions for each node the MWTM manages. This option is Web-only and does not appear in the MWTM client. To display the Software Versions table, choose **Summary Lists > Software Versions**.

For details on the Software Versions table, see Displaying Software Versions, page 11-11.

Point Codes

You can view current point code inventory reports using the MWTM. You can also export the reports.

Current Point Code Inventory

The Point Codes Report page shows all point codes that are currently being used by all nodes that the MWTM detected. To display the Point Codes Report table, choose **Summary Lists > Point Codes**.

The Point Codes Report table is sorted based on the information in the Node column. However, you can sort the table based on the information in any of the columns (see Navigating Table Columns, page 5-22).

Field or Column	Description
Signaling Point	Signaling point that is currently being used by a node. To sort the point codes by signaling point in descending order, click the **Signaling Points** heading. Click again to sort the point codes in ascending order.
Point Code	Point code that is currently being used by a node. To sort the point codes by point code in ascending order, click the **Point Codes** heading. This is the default display. Click again to sort the point codes in descending order.
Node	Name or IP address of the node. To see more information for the node, click the node name. To sort the point codes by node in descending order, click the **Node** heading. Click again to sort the point codes in ascending order.
Point Code Type	Type of point code: • **Primary**—Main point code used by a node. • **Secondary**—Alternate or backup point code used by a node. • **Capability**—Shared by more than one node, each of which is also assigned a real point code. Also called an alias point code. To sort the point codes by type in ascending order, click the **Point Code Type** heading. Click again to sort the point codes in descending order.

IP Addresses

You can view a report of IP addresses of the nodes that the MWTM manages. You can also export this report to a CSV file. To display the IP Address report table, choose **Summary Lists > IP Addresses**. The IP Addresses report contains:

Field or Column[1]	Description
Type	Indicates whether the IP address displayed is the primary or secondary IP address for the device.
Node	Name or IP address of the node. To see more information for the node, click the node name. **Note** Each node can be associated with one or more IP addresses.
IP Address	IP address of the node.
Last Regular Poll Interval	The last time this node was polled.
SNMP Pollable	Whether the node can be polled by SNMP (yes or no).

1. To sort the column in descending order, click the column heading. Click again to sort the list in ascending order.

Editing Properties

In the Edit Properties dialog box you can change the basic properties associated with these objects:

- Views
- Nodes
- Signaling Points (ITP only)
- Application Server Processes (ITP only)
- Backhauls (RAN-O only), (see Editing Properties for a RAN-O Backhaul, page 6-37)

To edit a node's properties, right-click the node in the Node table in the right pane or in a view in the navigation tree, and choose **Edit > Properties** in the right-click menu. The MWTM displays the Edit Properties dialog box, which contains:

Field or Button	Description
Name	Name of the object. • **For application server processes only**—This field cannot be edited. • **For nodes only**—By default, this field displays the node's DNS name, which the MWTM discovered. However, if you modified your preferences to identify nodes by their IP addresses, then that is how the node is identified in this field. For more information, see Node Name Settings, page 5-4. • **For signaling points only**—By default, this field displays the signaling point's point code and network name, which the MWTM discovered (for example, **1.22.0:net0**). You can also use this field to specify a new, more meaningful name for the node or ITP signaling point. Remember that: • You can change an object's name to a new name or IP address. • A new name can be from 1 to 30 characters, and can contain any letters (upper- or lowercase) and any numbers, as well as blank spaces ( ), hyphens (-), and underscores (_), but no periods (**.**). If you enter a name that is longer than 30 characters, or if you enter any other special characters or periods, the MWTM beeps and retains the current name. • If you enter a name that includes a period (.), the MWTM assumes that you are entering a new IP address. A new IP address must use the *x.x.x.x* format, where *x* is between 0 and 255, and must contain only numbers and periods (.), but no letters or special characters. If you enter an IP address that contains any letters or special characters, the MWTM beeps and retains the current IP address. • If you edit an object whose current name already contains invalid characters, the MWTM beeps and replaces the name with blanks. Enter a new name that uses only valid characters, or click **Cancel** to keep the existing name. If you click **Cancel**, the MWTM exits the Edit Properties dialog box without saving any changes to the Name, Connect Address, or Icon Name field. • If you leave the Name field blank, the MWTM reverts to the object's default name (dependent upon network type). • The new object's name *is* used when launching context-based applications, such as CiscoWorks. Therefore, if the new name that you enter is not the object's DNS name, and the application knows the object by its DNS name, context links into the application for that object might not work. When you click Save, all MWTM windows are updated automatically to reflect the new name.
Connect Address (Nodes only)	Connect IP address to pass to the Telnet or SSH command. A new Telnet or SSH IP address must use the *x.x.x.x* format, where *x* is between 0 and 255, and must contain only numbers and periods, but no letters or special characters. If you enter a Telnet or SSH IP address that contains any letters or special characters, the MWTM beeps and retains the current IP address.
Connection Protocol	Connection protocol to use. You cannot modify this field.
Connect Port (Nodes only)	Port to be used with the protocol specified in the Connector Protocol field. The default values are: • 23—Telnet • 22—SSH

Field or Button	Description
Icon Name	Drop-down menu of graphic icons to assign to this object in topology maps. The MWTM automatically assigns an appropriate icon to each discovered node and to `Unknown` nodes; but, you can use this field to assign a different icon (for example, if you know that a given `Unknown` node is a mobile switching center). **Note** Additional icon types appear in the list for user customization. When the MWTM discovers a single-instance node, it assigns the icon that corresponds to the node. When the MWTM discovers a multi-instance node, it assigns a separate icon for each unique instance. Icon names include the following: • ASP—Application server process • BSC—Base Station Controller [1] • BTS—Base Transceiver Station [1] • Building—Icon representing a collection of network objects in a building. • Cisco2600—Cisco 2650, Cisco 2650XM, Cisco 2651, Cisco 2651XM • Cisco2800 • Cisco3845 • Cisco7202, Cisco7204 (Cisco 7204, Cisco 7204VXR), Cisco7206 (Cisco 7206, Cisco 7206VXR) • Cisco7301, Cisco7304 • Cisco7505, Cisco7507 (Cisco 7507, Cisco 7507mx, Cisco 7507z), Cisco7513 (Cisco 7513, Cisco 7513mx, Cisco 7513z)

Field or Button	Description
Icon Name (continued)	• Cisco 7600—Cisco 7603, Cisco 7603s, Cisco 7604, Cisco 7606, Cisco 7606s, Cisco 7609, Cisco 7609s, Cisco 7613 • CiscoMWR1900—Cisco Mobile Wireless Router 1900 • City—Icon representing a collection of network objects in a city. • Cloud—Collection of network objects, called a submap. A submap can also contain other submaps. • Database—Icon representing a database object. • IPDevice—IP device, other than those listed previously. • MatedPair—Mated pair of signaling points • MSC—Mobile switching center. • Node B—The radio transmission/reception unit for communication between radio cells [1] • PGW—Cisco Public Switched Telephone Network (PSTN) Gateway (PGW) 2200 Softswitch • RAN_SVC—RAN Service Module in the Cisco ONS 15454 • RNC—Radio Network Controller [1] • SCP—Service control point • SignalingPoint—An SCP, SSP, or STP, or an ITP instance • SSP—Service switching point • STP—Signal transfer point • Tower—Icon representing a PC tower. • TrafficGenerator—Icon representing a device or emulator used to generate traffic, usually in a test environment. • Unknown—The MWTM is unable to determine the node or signaling point type. • Workstation—Icon representing a workstation. • Workstation2—Icon representing a different workstation. When you click **Save**, the topology window is updated automatically to reflect the new icon.

Field or Button	Description
Interface Structure	Drop-down menu to configure the way the MWTM displays the physical interfaces of a node (excluding the ONS node). Choices include: • Default—Restores the interface structure to the default setting for the node. For example, if the default structure is hierarchical, choosing this option restores the parent-child hierarchy in the Physical folder. **Note** In cases where the MWTM cannot determine the interface hierarchy of a node, the MWTM sets its default structure to be flat (that is, all interfaces appear at the same level). • Force Flat—Forces the interface structure of a node to be flat (that is, no hierarchy). All interfaces in the Physical folder appear at the same level. • Force Hierarchical—Forces the interface structure of a node to be hierarchical (that is, to display parent-child relationships among interfaces). When you choose a different setting, the MWTM opens a popup with this message: `A clean poll will be triggered if this value is changed.` Click **OK** to close the popup. Click **Save** to activate your changes. You can view your changes in the MWTM client and web interfaces.
Save	Button to save the changes that you make to the object information. Updates all MWTM windows to reflect your changes, and exits the dialog box.
Restore	Button to restore changes that you make to the Name and Icon Name fields of the Edit Properties dialog box and leave the dialog box open.
Cancel	Button to exit the dialog box without saving any changes.
Help	Button to display online help for the dialog box.

1. The MWTM does not manage BSC, BTS, RNC, or Node B objects but displays them in the topology window to help you visualize the network.

Editing Properties for a RAN-O Backhaul

To edit the properties of a backhaul or virtual backhaul interface, right-click the backhaul object in the navigation tree or right pane, and choose **Edit > Properties** in the right-click menu.

The MWTM displays the Edit RAN Backhaul Properties dialog box, which contains:

Field or Button	Description
Name	Name of the backhaul. You can use this field to specify a new, more meaningful name for the backhaul. Remember that: • You can change a backhaul's name to a new name. A new name can contain: – From 1 to 30 characters – Any letters (upper- or lowercase) – Any numbers, as well as blank spaces ( ), dashes (-), underscores (_), or periods (.) If you enter a name that is longer than 30 characters, or if you enter any other special characters, the MWTM beeps and retains the current name.

Field or Button	Description
	• If you edit an object whose current name already contains invalid characters, the MWTM beeps and replaces the name with blanks. Enter a new name that uses only valid characters, or click **Cancel** to keep the existing name. If you click **Cancel**, the MWTM exits the Edit RAN Backhaul Properties dialog box without saving any changes to the Name, Connect Address, or Icon Name field. When you click Save, all MWTM windows are updated automatically to reflect the new name.
Threshold Information	Displays slider bars for controlling the Acceptable, Warning, and Overloaded threshold settings. Left-click the slider and drag it to the desired setting for each threshold. See Threshold Information (RAN-O Only), page 8-37, for descriptions of these thresholds.
Bandwidth Information	Displays: • User Send Bandwidth (bits or bytes)/sec) • User Receive Bandwidth (bits or bytes)/sec) The user bandwidth is the value that you (the user) specify for the backhaul. Send and receive values will differ if the interface is asymmetrical. The backhaul appears in the backhaul real-time chart as a percentage of the User Bandwidth. The preset value for the User Bandwidth is the same as the System Bandwidth. When you change the User Bandwidth, you are changing the scale of the Y axis of the backhaul real-time chart in the Performance tab (see Displaying Backhaul Performance Statistics, page 11-23). The X and Y values of the data do not change. The threshold ranges resize because they are percentages of User Bandwidth. The User Bandwidth represents 100%. Data points that are higher than the User Bandwidth will exceed 100%. The Y axis dynamically increases to display all data points. (See Why does my backhaul graph show greater than 100% for transmit traffic?, page C-25.) • System Send Bandwidth (bits/sec) • System Receive Bandwidth (bits/sec) The system bandwidth is the value that the system specifies for the backhaul. Send and receive values will differ if the interface is asymmetrical. You cannot edit this field.
Save	Saves changes that you make to the object information, updates all MWTM windows to reflect your changes, and exits the dialog box.
Restore	Restores changes that you make to the Name, and sets the Threshold Information, and Bandwidth Information fields to the system defaults. The dialog box is left open.
Cancel	Exits the dialog box without saving any changes.
Help	Displays online help for the dialog box.

Attaching Notes

Tip Users with East Asian Languages configured on Windows are supported.

You use the MWTM to annotate an object, attaching a descriptive string to it. To attach a note to an object, in the:

- MWTM client, right-click the object in the navigation tree, then choose **Edit > Notes**. The Edit Notes dialog box appears.

- Web interface, left-click the object in the navigation tree, click the Notes tab, then click **Edit**. The text area becomes active.

Note You can add a note to a node by using either the MWTM client or the web interface. You can also view the note from either interface.

The Edit Notes dialog contains:

Field or Button	Description
Name	Name of the object. You cannot edit this field.
Note Last Updated	Date and time the Notes field for this object was last updated. If no note is currently associated with this object, this field displays the value `Not Set`. You cannot edit this field.
Notes	Notes to associate with this object. In this field, you can enter any important information about the object, such as a detailed description, location, service history, and so on.
Edit	(Web interface only) Enables you to edit or add a note in the content area.
Save	Saves changes that you make to the object's notes, updates all MWTM windows to reflect your changes, and closes the dialog box. When you annotate an object, the MWTM displays a note icon in the Notes column of all object tables for the annotated object, and the topology map in the topology window displays a note icon in the upper-left corner of the object.
Cancel	Cancels the operation without saving any changes.
Help	Displays online help for the dialog box.

Related Topic

- Viewing Notes, page 6-39

Viewing Notes

You use the MWTM to view any notes that are associated with an object. To view a note:

- Select an object in the navigation tree, then click the Notes tab.
- Right-click an object in a window, then choose **View > Notes**. (The Notes option is dimmed if no note is associated with the chosen object.)

The MWTM displays the Notes tab for the chosen object, which shows:

- Notes associated with the object.
- The date and time the notes associated with the object were last updated, or the message `Not Set` if no notes are associated with the object.
- The message `No Notes` if no notes are associated with the object.

Note The Notes tab is not supported on the DEFAULT View in the web interface.

For example, to view a note for a node, right-click the node in the Node table in the right pane or in a view in the navigation tree, then choose **View > Notes** in the right-click menu.

Related Topic

- Attaching Notes, page 6-38

Deleting Objects

After discovery, the objects in your network are known to the MWTM and added to the MWTM database. Physically deleting objects from your network is not the same as deleting them from the MWTM database. These sections describe the differences between deleting objects from your network, the MWTM database, and the MWTM discovery database, and the procedures for doing so:

- Deleting an Object from Your Network, page 6-40
- Deleting an Object from the MWTM Database, page 6-40

Deleting an Object from Your Network

If you physically delete a known object from your network (for example, by powering down a node), it remains in the MWTM database, the MWTM labels it Unknown, and the system administrator is responsible for deleting it from the MWTM database, if you choose to do so.

Note For nodes, the MWTM also labels all associated network objects Unknown because the MWTM attempts to poll the node and gets no response. For details on polling nodes, see Polling Nodes, page 8-47.

Deleting an Object from the MWTM Database

Typically, you delete an object from the MWTM database for one of these reasons:

- You physically deleted the object from your network. This is the most common reason for deleting a object from the MWTM database.
- The object state is one of these:

Object	States	Applicable To
Node	Unknown, Unmanaged	ITP and IPRAN networks
Interface	Unknown	

Object	States	Applicable To
Signaling Point	Unknown, Unmanaged	ITP networks only
Linkset	Unknown	
Link	Unknown	
Application Server	Unknown	
Application Server Process	Unknown	
Application Server Process Association	Unknown	
Signaling Gateway Mated Pair	Unknown	

You are aware of the reason for the state, and you no longer want to see the object in the MWTM displays. For example, the object might be a test lab device, or it could be associated with an object that was removed from the network.

Note If an object has at least one adjacent object in Active, Discovering, Waiting, or Warning state, you cannot delete the object. If you try, the MWTM cancels the deletion.

- If you delete all associated connections to an Unmanaged object, the MWTM does not automatically delete the object. Instead, you must manually delete the object.

If you have physically deleted a known object from your network, and you then delete it from the MWTM, it is no longer in the MWTM database, it does not appear in MWTM windows, and it is not discovered when you run discovery.

If you have *not* physically deleted a known object from your network, and you delete it from the MWTM, any associated objects are also automatically deleted from the MWTM database (if applicable). However, at the next poll the MWTM finds the object (and any associated objects) and adds it back to the MWTM database, setting the status appropriately. If this happens, do not delete the object again. Instead, set it to Ignored. See Ignoring and Unignoring Objects, page 6-44, for more information.

To delete an object from the MWTM database, use one of these procedures:

Note If you delete an object from the MWTM database, the object is deleted for all MWTM clients and views that are connected to that MWTM server.

- Select one or more objects in a window, then choose **Edit > Delete** from the MWTM main menu.
- Right-click the object in a window, then select **Delete** from the right-click menu. (You cannot delete more than one object at a time from the right-click menu.)

The MWTM asks you to confirm the deletion. Click:

- **Yes** to delete the chosen objects. The MWTM deletes the objects from the MWTM database.
- **No** to return to the window without deleting any objects from the MWTM database.

You can also enter the **mwtm delete** commands from the command line interface to delete one or more objects from the MWTM database. See mwtm delete, page B-24, for more information on the use of this command.

Deleting a Node from the MWTM Discovery Dialog

If you want to completely eliminate a given node from the MWTM database, you can delete it from the MWTM Discovery dialog box, ensuring that the MWTM never even discovers it.

Note If you delete a node from the MWTM Discovery dialog box, the node is deleted for *all* MWTM clients and views connected to that MWTM server.

To delete a node from the MWTM Discovery dialog box:

Step 1 Choose **Network > Network Discovery** from the MWTM main menu. The Discovery dialog box appears.

Step 2 Click the **Discovery** tab.

Step 3 In the Discovered Nodes table, select the node that you want to delete.

Step 4 Click **Delete Node**.

The MWTM deletes the nodes from the MWTM database, without asking for confirmation. The MWTM will no longer discover the nodes.

Unmanaging and Managing Nodes or ITP Signaling Points

You use the MWTM to change a node or any associated signaling point to the Unmanaged state. You can also remove the Unmanaged state from these objects.

In some situations, you might not want to a node or signaling point to appear in MWTM windows. However, you might be unable to delete the object from the MWTM database. For example, if:

- You have not physically deleted a known node or signaling point from your network, and you delete it from the MWTM, the object is removed from the poll list. However, at the next poll, the MWTM returns the object to the DEFAULT view. If you are using a custom view, the MWTM labels the object as new.
- A node has at least one adjacent node in Active, Discovering, Waiting, or Warning state; or, if a signaling point has at least one adjacent signaling point in Active or Warning state, you cannot delete the node or signaling point. If you try, the MWTM cancels the deletion.

In these situations, you can label the object as Unmanaged. When you set a node or signaling point to the Unmanaged state, the MWTM removes the object from the poll list.

Note Users with authentication level Network Administrator (level 4) and higher can only Unmanage nodes or ITP signaling points.

Users with authentication level System Administrator (level 5) can Manage nodes or ITP signaling points.

Note If you change a node or signaling point to the Unmanaged state, the object is Unmanaged for all MWTM clients and views connected to that MWTM server.

To label a node or signaling point Unmanaged:

Step 1 Choose the node or signaling point in a window.

Note You cannot label a node Unmanaged if it has a Node Type of Unknown. If you select a node with a Node Type of Unknown, this menu option is dimmed and cannot be chosen. If you select more than one node, and at least one of them has a Node Type of Unknown, this menu option is grayed-out and cannot be chosen.

Step 2 Select **Unmanage** from the right-click menu. The MWTM labels the chosen node and any associated signaling point(s) Unmanaged and removes them from the poll list.

Note When you set a node or signaling point to the Unmanaged state, the events for the object will continue to appear in the Events window. If you want to suppress events for unmanaged objects, see Setting Alarm or Event Filters, page 9-10).

You can also remove the Unmanaged status from a node or signaling point, when you are ready to return them to the MWTM poll list. To remove the Unmanaged status from an object:

Step 1 Select the node or signaling point in a window.

Note You cannot remove the Unmanaged status from a node with a Node Type of Unknown. If you select a node with a Node Type of Unknown, then this menu option is dimmed and cannot be chosen. If you select more than one node, and at least one of them has a Node Type of Unknown, then this menu option is grayed-out and cannot be chosen.

Step 2 Select **Manage** from the right-click menu. The MWTM removes the Unmanaged status from the chosen node, returns it to the poll list, and polls it immediately.

Note (ITP only) You can also remove the Unmanaged status from a signaling point, when you are ready to return the signaling point to the MWTM poll list. To remove the Unmanaged status from a signaling point, right-click a signaling point in a window, then select **Manage Node** from the right-click menu. The MWTM removes the Unmanaged status from the chosen signaling point, the node associated with the signaling point, and all other signaling points associated with that node. The MWTM then returns these objects to the poll list, and polls them immediately.

Excluding Nodes or ITP Signaling Points from a View

To exclude a node or signaling point from the current view, right-click the node or signaling point in a window, then select **Exclude from View** in the right-click menu. The MWTM excludes the node or signaling point from the current view. See Creating a New View, page 7-7, for more information about excluding objects from views.

Ignoring and Unignoring Objects

You can instruct the MWTM to ignore an object when it aggregates and displays network data. Setting objects to Ignored prevents known problems from affecting MWTM displays for associated network objects. In effect, you are preventing a known problem from distracting you from other, more urgent network problems.

Example:

You can set a node to Ignored before shutting down the node for maintenance.

Note If you set an object to Ignored, the object is ignored for all MWTM clients and views connected to that MWTM server.

Also, if you set an object to Ignored, make a note of the change, and remember to reset the object when the problem is corrected or the maintenance is complete.

- To set an object to Ignored:

  Right-click the object, then select **Ignore** from the menu

  or

  In the object window in the right pane, check the **Ignored** check box.
- To display all objects that are ignored in the object window, click the Ignored column heading. The MWTM displays all ignored objects at the top of the table.
- To set an object to ignore in the topology window, select an object in the topology map, then, in the left pane, select the **Ignored** check box for the object you want to ignore.
- To unignore an object, right-click the object, then select **Unignore** from the menu.