C H A P T E R **3**

Getting Started with MWTM

This chapter provides information about starting and stopping MWTM, and provides an overview of how to use MWTM to manage your Radio Access Network-Optimization (RAN-O) installation.

This chapter includes the following information:

For detailed information about MWTM's supported platforms, and hardware and software requirements, see the *Cisco Mobile Wireless Transport Manager Installation Guide*.

Note The default directory for installing MWTM is */opt*. In commands that call for the default directory, if you installed MWTM in a different directory, you must specify that directory instead of */opt*.

Becoming the Root User (Server Only)

Some MWTM procedures require you to be logged in as the root user.

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Caution   As the root user, you can adversely affect your operating environment if you are unaware of the effects of the commands you use. If you are a relatively inexperienced UNIX user, limit your activities as the root user to the tasks described in this manual.

If you are not logged in, log in as the root user:

> **> login: root**

> **> Password:** *root-password*

If you are already logged in, but not as the root user, use the **su** command to change your login to root:

> **# su**

> **# Password:** *root-password*

Starting the MWTM Server (Server Only)

Before starting an MWTM server, verify the following prerequisite conditions:

- The RAN-O devices use supported IOS images
- The MWTM server has IP connectivity to the RAN-O devices
- SNMP is enabled on the RAN-O devices
- (Optional) Traps are enabled on the RAN-O devices

    To enable traps on the RAN-O device, enter the following:

    ```
    snmp-server enable traps snmp authentication linkdown linkup coldstart warmstart

    snmp-server enable traps ipran
    ```

- (Optional) A trap host is defined in the RAN-O network

   To receive the traps on a host, enter the following on the RAN-O device:

   `snmp-server host` *IP_address* `version 2c v2c`

Because the MWTM application is comprised of a server component and a client component, you must start both components to run the application.

To start the MWTM server on a Solaris/Linux system, enter the following commands:

 # cd /opt/CSCOsgm/bin

 # ./mwtm start

Note   To issue the **mwtm start** command, you must be logged in as the root user or as a super user, or your login must have administrator privileges. See the "Becoming the Root User (Server Only)" section on page 3-3 and the "Specifying a Super User (Server Only)" section on page 10-19 for more information.

Starting the MWTM Client

This section contains the following information:

Before Starting the MWTM Client

When you start an MWTM client, the version and release of the client must match that of the MWTM server, and the patch level must be greater than or equal to that of the server. For example, the following MWTM client-server connections are allowed:

Table 3-1   Allowed MWTM Client-Server Connections

Client Level	Server Level
5.0.0	5.0.0
5.1.0	5.1.0

The following MWTM client-server connections are *not* allowed:

Table 3-2   Disallowed MWTM Client-Server Connections

Client Level	Server Level
5.0.0	5.1.0
5.1.0	5.0.0

If there is a client-server mismatch, MWTM displays a warning message when you try to start the client. If you have a Web browser installed, MWTM optionally opens a Web page enabling you to download an allowed, matching client. See the "Downloading the MWTM Client from the Web" section on page 13-50 for more information about downloading the MWTM client.

Starting the MWTM Client on Solaris/Linux

To start the MWTM client on a Solaris/Linux system on which the MWTM server is installed, make sure the MWTM server is running, then enter the following commands:

 # cd /opt/CSCOsgm/bin

 # ./mwtm client

To start the MWTM client on a Solaris/Linux system other than the one on which the MWTM server is installed, make sure the MWTM server is running, then enter the following commands:

 # cd /opt/CSCOsgmClient/bin

 # ./mwtm client

To start the MWTM client on a Solaris/Linux system other than the one on which the MWTM server is installed, and connect to an MWTM server other than the default server, enter the following commands:

 # cd /opt/CSCOsgmClient/bin

 # ./mwtm client *server_name_or_ip_address*

where *server_name_or_ip_address* is the name or IP address of the Solaris/Linux system on which the MWTM server is running.

Starting the MWTM Client on Windows

To start the MWTM client on a Windows system, select **Start > Programs > Cisco MWTM Client > Launch MWTM Client**, or double-click the MWTM Client icon on the Windows desktop.

Starting the MWTM Client for the First Time

When you start MWTM for the first time, MWTM displays the Discovery Dialog and the MWTM Main Window.

The MWTM Main Window is the primary MWTM window. It is the first window to appear when you launch the MWTM client. It displays basic information about the events and objects that MWTM discovers.

When you start MWTM for the first time, if you did not configure the MWTM server to automatically discover your network the first time the server starts after installation, the MWTM database contains no information, and the MWTM Main Window is blank. The database is populated, and reflected in the MWTM Main Window, when you run Discovery for the first time; MWTM displays the Discovery Dialog to make it easier for you to do so. In fact, any time you start the MWTM client and the MWTM database is empty, MWTM automatically opens the Discovery Dialog so you can run Discovery and populate the database. For more information about Discovery, see the "Discovery Overview" section on page 2-1.

The events and objects that MWTM discovers are displayed in the left and right panes of the MWTM Main Window.

MWTM also uses the right pane of the MWTM Main Window when displaying more detailed information about your network, such as configuration details and real-time data.

Viewing the MWTM Main Window

The MWTM Main Window is the primary MWTM client window. It is the first window to appear when you launch the MWTM client. It displays basic information about the events and objects that MWTM discovers in the left and right panes. MWTM also uses the right pane of the MWTM Main Window when displaying more detailed information about your network, such as configuration details and real-time data.

For detailed descriptions of the information that is displayed in the MWTM Main Window, see the following sections:

- Using the MWTM Main Menu, page 3-7
- Viewing Alarms, page 3-15
- Viewing Events, page 3-18
- Viewing a Summary of Network Objects, page 3-19
- Viewing Views, page 3-22
- Viewing Nodes, page 3-22
- Viewing Interfaces, page 3-23

Using the MWTM Main Menu

The MWTM Main Menu appears in the menu bar of most MWTM windows.

Some menu items do not appear on some windows. In addition, menu items that are grayed-out are not available on that window.

For detailed information about the menu options provided by other windows, see the descriptions of those windows.

The MWTM Main Menu provides the following menu options:

Menu Command	Description
File > Load DEFAULT View (Ctrl-D)	Loads the DEFAULT view, which is the view into which MWTM places all discovered objects when discovering the network. The DEFAULT view is stored on the MWTM server and shared by all MWTM clients, but it cannot be modified by the clients.
File > Load View (Ctrl-L)	Loads an already existing view. MWTM prompts you for the name of the view you want to load: • Select the name of the view, or accept the default view name, then click **OK** to load the view. • Click **Cancel** to close the prompt window without loading a view.

Menu Command	Description
File > Save View (Ctrl-S)	Saves the current view: • If you have not already saved the current view, opens the Save File Dialog: View List, which enables you to enter or select a file name under which to save the current view. • If you have already saved the current view, saves the view to that file name. If you have implemented MWTM User-Based Access, this option is available to users with authentication level Power User (Level 2) and higher.
File > Save View As	Opens the Save File Dialog: View List, which enables you to enter or select a file name under which to save the current view. If you have implemented MWTM User-Based Access, this option is available to users with authentication level Power User (Level 2) and higher.
File > Connect to New Server (Ctrl-O)	Connects to a new server. MWTM prompts you for the new server's name or IP address, and UDP port number. MWTM stops the MWTM client, then restarts the client connected to the new server.
File > Print (Ctrl-P)	Enables you to: • Specify options for printing • Print the current window • Save the current window to a file The MWTM printing options require that you define a printer on your system. If you select **File > Print** and the Print window does not appear, make sure you have defined a printer on your system.
File > Exit (Ctrl-Q)	Exits the MWTM application, after prompting you for confirmation. If you are working in a custom view (that is, not the DEFAULT view), MWTM automatically saves any changes you made to the view.
Edit > Views (Ctrl-M)	Opens the View Editor Window.
Edit > Find (Ctrl-F)	Opens the Find dialog, which enables you to find a specific object, event, or text in the window. If you select an object in the left pane of the MWTM Main Window, this option is grayed-out and cannot be selected.

Menu Command	Description
Edit > Clear All Events (Ctrl-E)	Deletes the event icon (orange triangle) from MWTM displays for all known objects. The actual events are not deleted from MWTM, only the event icon for all known objects.
	Note During Discovery, MWTM might flag most objects with an event icon. If the event icons are too distracting, use the **Edit > Clear All Events** menu option to remove them.
Edit > Delete (Delete)	Deletes the currently selected element or elements from the MWTM database. MWTM displays the Confirm Deletion dialog:
	• To delete the selected elements, click **Yes**. The items are deleted from the MWTM database and the Confirm Deletion dialog is closed.
	• To retain the selected elements, click **No**. The items are kept in the MWTM database and the Confirm Deletion dialog is closed.
	• To prevent MWTM from displaying the Confirm Deletion dialog, select the **Do not show this again** checkbox.
	Note If you select the **Do not show this again** checkbox, and you later decide you want MWTM to begin displaying the Confirm Deletion dialog again, you must select the **Confirm Deletions** checkbox in the General GUI settings in the Preferences window. For more information, see the description of the **Confirm Deletions** checkbox in the "Startup/Exit Settings" section on page 11-6.
	If you have implemented MWTM User-Based Access, this option is available to users with authentication level Network Administrator (Level 4) and higher.
Edit > Preferences (Ctrl-H)	Opens the Preferences window.
Network > SNMP Configuration (Ctrl-B)	Opens the SNMP Configuration Dialog. If you have implemented MWTM User-Based Access, this option is available to users with authentication level Network Administrator (Level 4) and higher.
Network > Network Discovery (Ctrl-Y)	Opens the Discovery Dialog. If you have implemented MWTM User-Based Access, this option is available to users with authentication level Network Administrator (Level 4) and higher.

Menu Command	Description
Network > Poll Nodes > Normal Poll (Alt-N)	Polls all selected RAN-O nodes.
	If you have implemented MWTM User-Based Access, this option is available to users with authentication level Network Operator (Level 3) and higher.
Network > Poll Nodes > Clean Poll (Alt-C)	Polls all selected RAN-O nodes and removes any **Unknown** objects after the completion of the poll.
	If you have implemented MWTM User-Based Access, this option is available to users with authentication level Network Operator (Level 3) and higher.
View > Show Topology (Ctrl-T)	Opens the Topology Window.
View > MWTM Server > Home Page	Displays the MWTM Server Home Page in a Web browser.
View > MWTM Server > Telnet To (Ctrl-N)	Opens a Telnet window to the server.
View > MWTM Server > Status Information	Opens the Server Status Information Window.
View > Network Status Dashboard	Displays the MWTM Node Dashboard in a Web browser.
View > Event History > Status Changes	Displays the MWTM Network Status Log for Status Change Messages in a Web browser, with messages displayed for all known objects.
View > Event History > SNMP Trap Messages	Displays the MWTM Network Status Log for SNMP Trap Messages in a Web browser, with messages displayed for all known objects.
View > Event History > Status and Trap Messages	Displays the MWTM Network Status Log for Status Change Messages and SNMP Trap Messages in a Web browser, with messages displayed for all known objects.
View > Event History > Network Status Metrics	Displays the MWTM Network Status Log for Metrics in a Web browser, with metrics displayed for all known objects.
View > Event History > Network Status Archives	Displays all archived Status Change Messages and SNMP Trap Messages in a Web browser.
View > User Audit > User Actions	Displays action messages in the system log, in a Web browser.
View > User Audit > User Accounts	Displays information about all user accounts that have been defined for the MWTM server, in a Web browser.
View > User Audit > Security Log	Displays the contents of the MWTM system security log file for the server to which you are connected, and which is currently running the MWTM server, in a Web browser.

Menu Command	Description
View > User Audit > Command Log	Displays the contents of the MWTM command log file for the server to which you are connected, and which is currently running the MWTM server, in a Web browser. The command log lists all **mwtm** commands that have been entered for the MWTM server, the time each command was entered, and the user who entered the command.
View > User Audit > Connected Clients	Lists all MWTM clients that are currently connected to the MWTM server, in a Web browser. It also lists all Solaris/Linux users that are logged in to the MWTM server.
View > Message of the Day	Opens the Message of the Day dialog.
View > Cisco.com	Displays the Cisco.com Home Page in a Web browser.
Reports > Router Node IOS Versions	Displays the RAN-O Node IOS Versions for the server to which you are connected, and which is currently running the MWTM server, in a Web browser.
Go > Back (Alt-Left)	Navigates back to the last window viewed in this session.
Go > Forward (Alt-Right)	Navigates forward to the last window viewed in this session.
Go > Back > *List of Windows*	Navigates back to a window viewed in this session. MWTM maintains a list of up to 10 **Back** windows.
Go > Forward > *List of Windows*	Navigates forward to a window viewed in this session. MWTM maintains a list of up to 10 **Forward** windows.
Tools > Event Configurator (Alt-E)	Launches the Event Configurator, which enables you to customize the displayed category, severity, color, and message associated with events; configure sounds for MWTM to play for different types of events; and load, save, and deploy customized event configurations. If you have implemented MWTM User-Based Access, this option is available to users with authentication level Network Operator (Level 3) and higher.
Tools > Event Sounds (Alt-U)	Opens the Event Sound Filters dialog, which enables you to define sounds that the MWTM client is to play when specific events are logged.

Menu Command	Description
Products > CiscoWorks > Device Center (Ctrl-2)	Links to the CiscoWorks Device Center, which provides a number of Web-based functions, including reachability trends, response time trends, interface status, Syslog browsing, and detailed inventory. MWTM prompts you for a CiscoWorks user ID and password before linking to CiscoWorks.
	The link to CiscoWorks has the following prerequisites:
	• CiscoWorks must be installed somewhere in the network.
	• The specific Cisco device must to be monitored by CiscoWorks.
	This option is grayed-out if the selected node is not a RAN-O node, or if the selected node is in **Unmanaged** status or has a **Device Type** of **Unknown**. (CiscoWorks cannot monitor a non-RAN-O, **Unmanaged**, or **Unknown** node.)
	This option is not displayed if you did not specify a CiscoWorks server during installation. See the "Installing MWTM on Solaris" and "Installing MWTM on Windows" chapters of the *Cisco Mobile Wireless Transport Manager Installation Guide* for more information.
Products > CiscoWorks > CiscoView (Ctrl-3)	Links to CiscoView, which provides a real-time, color-coded, graphical representation of Cisco devices. You can use CiscoView to quickly identify an incorrect status on a port or interface.
	This option is grayed-out if the selected node is a non-RAN-O node, or if the selected node is in **Unmanaged** status or has a **Device Type** of **Unknown**. (CiscoWorks cannot monitor a non-RAN-O, **Unmanaged**, or **Unknown** node.)
	This option is not displayed if you did not specify a CiscoWorks server during installation. See the "Installing MWTM on Solaris" and "Installing MWTM on Windows" chapters of the *Cisco Mobile Wireless Transport Manager Installation Guide* for more information.
Help > Topics (F1)	Displays the table of contents for the MWTM online help.
Help > Window (Shift-F1)	Displays online help for the current window.
Help > About (F3)	Displays build date, version, SSL support, and copyright information about the MWTM application.

Menu Command	Description
Topology Tools > Zoom In (Ctrl-=)	Makes the map twice as large. **Note** This option is displayed only in the Topology Window (**View > Show Topology**).
Topology Tools > Zoom Out (Ctrl-- or Ctrl-Minus)	Makes the map half as large. **Note** This option is displayed only in the Topology Window (**View > Show Topology**).
Topology Tools > Zoom Area	Zooms in on the selected area of the map. **Note** This option is displayed only in the Topology Window (**View > Show Topology**).
Topology Tools > Zoom Fit	Adjusts the size of the map to fit in the window. This is the default setting the first time the map is displayed. **Note** This option is displayed only in the Topology Window (**View > Show Topology**).
Topology Tools > Layout > Circular	Displays the map in a circular layout. **Note** This option is displayed only in the Topology Window (**View > Show Topology**).
Topology Tools > Layout > Spring	Displays the map in a spring layout. That is, nodes with the most links are drawn closer to the center of the map, while nodes with fewer links are drawn farther away. This is the default setting the first time the map is displayed. **Note** This option is displayed only in the Topology Window (**View > Show Topology**).
Topology Tools > Restore Positions	Restores the view to the last saved view. **Note** This option is displayed only in the Topology Window (**View > Show Topology**).
Topology Tools > Save As JPEG (Ctrl-J)	Opens the Save as JPEG dialog, enabling you to save the topology map to a JPEG file. **Note** This option is displayed only in the Topology Window (**View > Show Topology**).
Topology Tools > Magnetic Grid	Opens the Magnetic Grid Settings dialog. **Note** This option is displayed only in the Topology Window (**View > Show Topology**).
Topology Tools > Align	Opens the Align Objects dialog, which enables you to align two or more objects on the topology map. **Note** This option is displayed only in the Topology Window (**View > Show Topology**).

Menu Command	Description
Topology Tools > Exclude from View	Excludes the selected node from the current view. See the "Creating a New View" section on page 4-31 for more information about excluding nodes. **Note** This option is displayed only in the Topology Window (**View > Show Topology**). This option is grayed-out if the selected node is not a RAN-O node.
Topology Tools > Open Parent View	Opens the parent view of the currently displayed view in the Topology Window. **Note** This option is displayed only in the Topology Window (**View > Show Topology**). This option is grayed-out if the currently displayed view is the highest level parent view.
Topology Tools > Close View	Closes the currently displayed view in the Topology Window. **Note** This option is displayed only in the Topology Window (**View > Show Topology**). This option is grayed-out if the currently displayed view is the highest level parent view.

Viewing Alarms

MWTM enables you to view a summary of all currently active alarms in your network, including the current status of the associated network object. An active alarm is a network object with the following status:

- A node or interface that is **Warning** or worse and is not **Ignored**.

- A node or interface that is **Pending** or worse and is not **Ignored**.

To see a summary of all currently active alarms, click **Alarms** in the left pane. MWTM displays the Active Alarms Window in the right pane. For more information, see the "Viewing Alarms" section on page 3-15.

Right-click **Alarms** in the left pane to display the right-click menu for all alarms. For more information, see the "Right-Click Menu for All Alarms" section on page 3-18.

Right-click an alarm in the right pane to display the right-click menu for a specific alarm. For more information, see the "Right-Click Menu for a Specific Alarm" section on page 3-18.

Viewing Alarms

To view alarms, select **Alarms** in the left pane of the MWTM Main Window. MWTM displays the Active Alarms Window.

The Active Alarms Window provides basic information about all currently active alarms in your network, that are not excluded from your current view. MWTM updates the information in the window at least once every minute.

To see mouse over help popup for each column in the table, place the cursor over a column header.

If a cell is too small to show all of its data, place the cursor over the cell to see the full data in a mouse over help popup.

You can resize each column, or sort the table based on the information in one of the columns. By default, this table is sorted by **Age**, with the most recent alarms at the top, and MWTM displays all of the columns in the table except **Last Status Change**.

- To display hidden columns, right-click in the table header and select the checkboxes for the columns you want to display.

- To hide columns, right-click in the table header and clear the checkboxes for the columns you want to hide.

See the "Resizing, Sorting, and Hiding Table Columns" section on page 3-30 for more information about resizing, sorting, displaying, or hiding columns.

The active alarms table contains the following columns:

Column	Description
Type	Type of network object associated with the selected alarm.
	To see all higher-level alarms associated with the network object, select the turner beside the object. MWTM displays the higher-level alarms below the selected alarm.
Name	Name of the network object associated with the selected alarm.

Column	Description
Status	Current status of the network object associated with the selected alarm. Possible values are: **Unknown** **Unavailable** **Inactive** **Failed** **Down** **Pending** **Warning** **Shutdown** **Discovering** **Polling** **Waiting** **Unmanaged** **Active** For detailed definitions of each status for each type of network object, see the "MWTM Status Definitions" section on page A-1.
Status Reason	Reason for the current status of the network object associated with the selected alarm. For a full list of possible reasons, see the *stateReasons.html* file: • If you installed MWTM in the default directory, */opt*, then the file is located at */opt/CSCOsgm/apache/share/htdocs/eventHelp* directory. • If you installed MWTM in 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 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 is displayed. 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 clean discovery of the RAN-O network. If the status reason is still **Unsupported Configuration**, enter the **mwtm clean** command to restore the MWTM server to a "clean" state, such as would exist after a new installation of MWTM. For more information on the use of these commands, see the "MWTM Command Reference" section on page C-1.

Column	Description
Last Status Change	Date and time that the status of the network object associated with the selected alarm last changed.
Age	Age of the selected alarm, in days, hours, and minutes.
	Note For the most accurate age data, ensure that the client and server clocks are in sync by using Network Time Protocol (NTP) or a similar service. For more details, see "Why are the age of my alarms always 0 minutes?" section on page B-14.

Right-Click Menu for All Alarms

To see the right-click menu for all active alarms, select **Alarms** in the left pane and click the right mouse button. The active alarms right-click menu provides the following options:

Menu Command	Description
Show In New Window	Opens the Active Alarms Window in a new window.
Sort Tree By Status	Sorts the entire tree in the left pane by the status of each object.
Sort Tree By Name	Sorts the entire tree in the left pane by the name of each object.
Back > List of Windows	Navigates back to a window viewed in this session. MWTM maintains a list of up to 10 **Back** windows.
Forward > List of Windows	Navigates forward to a window viewed in this session. MWTM maintains a list of up to 10 **Forward** windows.

Right-Click Menu for a Specific Alarm

The active alarms table provides a subset of the MWTM Main Menu as a right-click menu. To see this menu, select an alarm and click the right mouse button. The alarm right-click menu provides the same options as the right-click menu for the associated network object, plus the following additional options:

Menu Command	Description
Expand All	Displays all higher-level alarms associated with all network objects in the active alarms table.
Collapse All	Does not display higher-level alarms in the active alarms table.

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Caution The alarms displayed in the active alarms table are the actual network objects in MWTM. Options you select in the right-click menu affect the object in MWTM. For example, if you delete a node in the active alarms table, you delete that node from the MWTM database.

Viewing Events

To see all events discovered by MWTM, click **Events** in the left pane. MWTM displays the Event Window in the right pane. For more information, see the "Working with Events" section on page 5-1.

Right-click **Events** in the left pane to display the right-click menu for all events. For more information, see the "Right-Click Menu for All Events" section on page 5-3.

Right-click an event in the right pane to display the right-click menu for a specific event. For more information, see the "Right-Click Menu for a Specific Event" section on page 5-3.

Viewing a Summary of Network Objects

MWTM enables you to view basic summary information about all discovered network objects, including their status and the number of each object with that status.

To see a summary of all network objects discovered by MWTM, click **Summary Lists** in the left pane. MWTM displays the Summary Statistics Window in the right pane. For more information, see the "Viewing the Summary Lists" section on page 3-20.

Right-click **Summary Lists** in the left pane to display the right-click menu for the summary lists. For more information, see the "Right-Click Menu for the Summary Lists" section on page 3-22.

Note   If an object in the left pane is not associated with any objects of a given type, MWTM does not display that sub-folder.

Viewing the Summary Lists

To view the summary lists, select **Summary Lists** in the left pane of the MWTM Main Window. MWTM displays the Summary Statistics Window.

The Summary Statistics Window provides basic summary information about all discovered network objects that have been discovered by MWTM.

To see mouse over help popup for each column in the table, place the cursor over a column header.

If a cell is too small to show all of its data, place the cursor over the cell to see the full data in a mouse over help popup.

You can resize each column, or sort the table based on the information in one of the columns. By default, this table is sorted by **Status**, with failures (red statuses) at the top.

- To display hidden columns, right-click in the table header and select the checkboxes for the columns you want to display.

- To hide columns, right-click in the table header and clear the checkboxes for the columns you want to hide.

See the "Resizing, Sorting, and Hiding Table Columns" section on page 3-30 for more information about resizing, sorting, displaying, or hiding columns.

The summary list table contains the following columns:

Column	Description
Status	Current status of the network objects. Possible values are: **Unknown** **Unavailable** **Inactive** **Failed** **Down** **Blocked** **Pending** **Warning** **Shutdown** **Discovering** **Polling** **Waiting** **Unmanaged** **Active** For detailed definitions of each status for each type of network object, see the "MWTM Status Definitions" section on page A-1.
Total	Total number of network objects with the indicated status. Objects in hidden columns are not included in the totals.
Nodes	Total number of discovered nodes with the indicated status.

Right-Click Menu for the Summary Lists

To see the right-click menu for the summary lists, select **Summary Lists** in the left pane and click the right mouse button. The summary lists right-click menu provides the following options:

Menu Command	Description
Show In New Window	Opens the Summary Statistics Window in a new window.
Sort Tree By Status	Sorts the entire tree in the left pane by the status of each object.
Sort Tree By Name	Sorts the entire tree in the left pane by the name of each object.
Back > List of Windows	Navigates back to a window viewed in this session. MWTM maintains a list of up to 10 **Back** windows.
Forward > List of Windows	Navigates forward to a window viewed in this session. MWTM maintains a list of up to 10 **Forward** windows.

Viewing Views

To see all views currently configured on this MWTM client, select the turner beside **Summary Lists**, then click **Views** in the left pane. MWTM displays the View Window in the right pane. For more information, see the "Viewing Basic Information for Views" section on page 4-4.

To display all views currently configured on this MWTM client in the left pane, select the turner beside **Views**. Then, you can select one of the views to display the View Details Window for that view in the right pane. For more information, see the "Viewing Detailed Information for a View" section on page 4-9.

To display the DEFAULT view, select the turner beside **Views**, then select **DEFAULT** to display the View Details Window for the DEFAULT view in the right pane. For more information, see the "Viewing Detailed Information for a View" section on page 4-9.

Right-click **Views** in the left pane to display the right-click menu for all views. For more information, see the "Right-Click Menu for All Views" section on page 4-4.

Right-click a view in the right pane to display the right-click menu for a specific view. For more information, see the "Right-Click Menu for a Specific View" section on page 4-5.

Viewing Nodes

To see all nodes discovered by MWTM, select the turner beside **Summary Lists**, then click **Nodes** in the left pane. MWTM displays the Node Window in the right pane. For more information, see the "Viewing Basic Information for Nodes" section on page 6-1.

To display all nodes discovered by MWTM in the left pane, select the turner beside **Nodes**. Then, you can select one of the nodes to display the Node Details Window for that node in the right pane. For more information, see the "Viewing Detailed Information for a Node" section on page 6-10.

Right-click **Nodes** in the left pane to display the right-click menu for all nodes. For more information, see the "Right-Click Menu for All Nodes" section on page 6-3.

Right-click a node in the right pane to display the right-click menu for a specific node. For more information, see the "Right-Click Menu for a Specific Node" section on page 6-4.

Viewing Interfaces

To see all interfaces discovered by MWTM, select the turner beside a node in the left pane. To see detailed information about an interface, select the interface in the left pane. MWTM displays the Interface Window in the right pane. For more information, see "Viewing Detailed Information for an Interface" section on page 7-1.

Right-click an interface in the left pane to display the right-click menu. For more information, see the "Interface Details: Right-Click Menu" section on page 7-2.

Viewing the Topology of the Network

To see a topology (graphical) view of the objects in your network select **View > Show Topology** in the MWTM Main Menu. MWTM displays the Topology Window in a new window. For more information, see the "Viewing the Topology of the Network" section on page 8-1.

Viewing MWTM Data on the Web

MWTM enables you to access MWTM data from the MWTM Server Home Page, using a Web browser. To do so, select **View > MWTM Server > Home Page** in the MWTM Main Menu. MWTM displays the MWTM Server Home Page in a Web browser. For more information, see the "Accessing MWTM Data from a Web Browser" section on page 13-1.

Viewing Server Status Information

MWTM enables you to view detailed information about the processes, pollers, tasks, and clients for the server to which you are connected, and which is currently running the MWTM server.

To display server status information, select **View > MWTM Server > Status Information** in the MWTM Main Menu. MWTM displays the Server Status Information window.

The Server Status Information window is composed of the following sections:

Server Status Information: Fields and Buttons

The Server Status Information window contains the following fields and buttons:

Menu Command	Description
Poll Interval	Poll interval used to collect data for the table.
Last Poll	Time the last poll was run. This field initially displays the phrase **Polling device**. After the first polling cycle, MWTM populates this field with the actual time of the last poll.
Update	Forces an immediate poll, and refreshes the Server Status Information window with the latest data.
Close	Closes the Server Status Information window.
Help	Displays online help for the Server Status Information Dialog.

Server Status Information: Processes

The Server Status Information: Processes section lists the processes that make up the MWTM server.

The Processes table contains the following columns:

Field	Description
Name	Name of the process, such as **AppServer**.
Process ID	Number to uniquely identify the process.
Is Running	Indicates whether the process is running (**true**) or not (**false**).

Server Status Information: Pollers

The Server Status Information: Pollers table lists the detail and demand pollers that are currently being processed by the MWTM server.

The Server Status Information: Pollers table contains the following columns:

Field	Description
Poller ID	Number to uniquely identify each MWTM detail poller that is currently active.
	MWTM detail pollers collect detailed data (such as real-time data, statistics, route detail, and so on) that is not collected by the regular MWTM poller.
Client Host	Name of the MWTM client that started the detail poller.
Interval	Poll interval for the detail poller, in hours, minutes, and seconds.
Iteration	Number of times the detail poller is to poll. If this field displays **Forever**, the detail poller will never stop polling, until requested to stop by the MWTM client.
Next Poll	Time until the next poll, in hours, minutes, and seconds.
Time Limit	Time remaining, in hours, minutes, and seconds, until the poller times out. When the poller times out, MWTM automatically stops the poller to prevent unnecessary traffic on the network and sends an appropriate error message to the client.
	By default, MWTM allows pollers to run up to 8 hours. To change that setting, see the description of the **mwtm pollertimeout** command in the "mwtm pollertimeout" section on page C-36.
Description	Description of the detail poller.

Server Status Information: Tasks

The Server Status Information: Tasks table lists long-running services being performed by the MWTM server.

The Server Status Information: Tasks table contains the following columns:

Field	Description
Task ID	Number to uniquely identify the task.
Interval	Time between runs for the task, in hours, minutes, and seconds.
Iteration	Number of times the task is to run. If this field displays **Forever**, the task will never stop polling.
Next Execution	Time until the next run for the task, in hours, minutes, and seconds.
State	Current state of the task. Valid values are: • **None**—Task is stopped. • **Waiting**—Task is waiting to transition to **Ready** or **Running** state. • **Ready**—Task is ready to execute but is not yet in **Running** state. • **Running**—Task has been started and is currently executing. • **Pending**—Task was in **Ready** state when it was canceled by a user. The task is pending final removal from the scheduler. • **Error**—Task encountered an error. • **Dying**—Task was in **Running** state when it was canceled by a user. The task continues to run in **Dying** state until it completes, then it is removed from the scheduler.
Description	Description of the task.

Server Status Information: Clients

The Server Status Information: Clients table contains the following columns:

Field	Description
Process Name	Name of an MWTM client that is currently connected to the server.
User Name	If you have implemented MWTM User-Based Access, this field displays the name of an MWTM client user who is currently logged in and connected to the server.
	If you have not implemented MWTM User-Based Access, this field displays the name of the device being used by the user.
Message Mask	Mask that indicates which messages **[1-81]** are allowed to be sent to the client:
	• For the MWTM client, this field displays **[1-81]**. That is, all messages are allowed to be sent to the MWTM client.
	• For the Event Configurator, this field displays **[14, 56, 67]**. That is, only messages 14, 56, and 67 are allowed to be sent to the Event Configurator.
Sleeping?	Indicates whether the thread that is responsible for delivering messages is sleeping (**yes**) or not (**no**). The normal setting for this field is **no**.
Sleep Time	Time in seconds the thread that is responsible for delivering messages has been sleeping. The normal setting for this field is **0**.
Queue Size	Number of messages waiting to be sent to the MWTM client. The normal setting for this field is **0**, but it could be higher if the MWTM server or client is very busy, as during Discovery.

Viewing Online Help

MWTM provides the following online help options in the MWTM Main Menu:

- To display the table of contents for the MWTM online help in a Web browser, select **Help > Topics**.

- To display online help for the current window in a Web browser, click **Help > Window**.

- To display build date, version, SSL support, and copyright information about the MWTM application in a Web browser, click **Help > About**.

Related Topics:

- Viewing the MWTM Technical Documentation, page 13-49

Finding Information in a Window

Sometimes it can be difficult to find a specific piece of information, such as a node name or event text, in a window. MWTM enables you to search for a character string in a window.

To find and highlight a character string in a window, select **Edit > Find** from the MWTM Main Menu. MWTM displays the Find dialog.

The Find dialog contains the following fields and buttons:

Field or Button	Description
What	Character string for which MWTM is to search in the window. This can be any character string: all or part of a node name, event text, status, and so on.
Match Case	Checkbox used to indicate whether MWTM is to search for only character strings that match the case of the text in the **What** field: - To search with case-matching on, select this check box. - To search with case-matching off, clear this check box. This is the default setting.
Search Forward	Specifies whether MWTM is to search forward (down and to the right) in the window. This radio button is mutually exclusive with the **Search Backward** button. The default setting for this checkbox is selected.
Search Backward	Specifies whether MWTM is to search backward (up and to the left) in the window. This radio button is mutually exclusive with the **Search Forward** button. The default setting for this checkbox is cleared.

Find	Launches the search:
	
	- If a matching character string is found in the window, MWTM highlights the first line that contains the string.
	
	    To find the next occurrence of the string, click **Find** again.
	
	    You can continue to click **Find** until there are no more matches in the window. At that time, MWTM displays an appropriate message in the dialog, such as **Bottom of table reached**.
	
	- If no matching character string is found, MWTM displays an appropriate message in the dialog, such as **Bottom of table reached**.

Close	Closes the Find dialog when you are done searching.

Resizing, Sorting, and Hiding Table Columns

The columns in some tables in MWTM can be resized, sorted, or hidden to meet your specific needs. MWTM automatically saves your new settings and, thereafter, launches the client with the new settings.

- To make a column wider or narrower, click the column divider in the header and move the divider to the right or left while holding down the left or right mouse button.

  Changes you make to an object's Components or Recent Events table in the MWTM Main Window are reflected in all Components or Recent Events tables in the MWTM Main Window for all other objects. The changes are not reflected in Show In New Window windows or Real-Time Data and Charts windows.

  Depending on your system, as well as other factors, MWTM windows can sometimes display so small that text is illegible, and columns and text entry fields are very narrow and unusable. If this happens, resize the window and widen the individual columns until the information is again legible and the columns and text entry fields are usable.

- By default, MWTM displays most of the columns in tables, but some columns may be hidden.

  - To display hidden columns, right-click in the table header and select the checkboxes for the columns you want to display.

  - To hide columns, right-click in the table header and clear the checkboxes for the columns you want to hide.

  Changes you make to an object's Components or Recent Events table in the MWTM Main Window are reflected in all Components or Recent Events tables in the MWTM Main Window for all other objects. The changes are not reflected in Show In New Window windows or Real-Time Data and Charts windows.

- To sort a table based on the data in a column, left-click in the column header. The table is sorted alphanumerically from top to bottom, based on the data in the selected column. To sort the table in reverse order, left-click in the column header a second time. If two entries in the selected column are identical, MWTM sorts those rows based on the data in the remaining table columns, moving left to right.

- Many of the tables in MWTM Web pages display an icon in the column header to indicate the column on which the table is sorted, and the direction of the sort. The icon displays an upward-pointing arrow if the table is sorted in ascending order (1-9, A-Z), and a downward-pointing arrow if the table is sorted in descending order (Z-A, 9-1).

- If you sort a table in an MWTM Web page based on the **Nodes** column, by default the table is sorted based on the DNS names of the nodes, as discovered by MWTM. However, if you modified your preferences to identify nodes by their user-defined names, then the table is sorted based on the user-defined names of the nodes. For more information, see the "Node Name Settings" section on page 11-8.

- To customize the order in which status settings are sorted in the **Status** column of tables, use the Status settings section of the Preferences window. For more information, see the "Status Settings" section on page 11-15.

Editing Object Properties

MWTM enables you to quickly and easily edit some properties of nodes and views. For more information, see the following sections:

- Editing Node Properties, page 6-43

-

Attaching Notes to Objects

MWTM enables you to quickly and easily attach notes to objects in the MWTM database. For more information, see the following sections:

-
-
-

Printing MWTM Windows

You can print most MWTM windows, as well as the topology map, for those times when you need hardcopy.

To print an MWTM window, select **File > Print** from most MWTM windows (for example, the MWTM Main Window or Topology Window).

MWTM displays the Print dialog.

The Print dialog enables you to specify print settings, such as which printer to print to, whether to send output to a file (the default location for the print file is your home directory), and whether to print duplex.

Note   You can send output to a file only in the file formats supported by your printer drivers. Sending output to a file can also result in very large files.

When you are satisfied with your print settings, click **Print**. MWTM prints the map.

To exit the Print dialog at any time without printing, click **Cancel**.

Loading and Saving MWTM Files

MWTM enables you to quickly and easily load and save MWTM files. The files are stored on the MWTM server and can be loaded on any connected MWTM client.

To display a Load File Dialog, use one of the following procedures:

- To display the Load File Dialog: Load Filter, click **Load** in the Event Filter dialog. For more information, see the .
- To display the Load File Dialog: Preferences File List, select **File > Load** from the Preferences window. For more information, see the .
- To display the Load File Dialog: Seed File List, select **File > Load Seeds** from the Discovery Dialog. For more information, see the .
- To display the Load File Dialog: View List, select **File > Load** from the View Editor Window. For more information, see the .

- To load the DEFAULT network view, select **File > Load DEFAULT View** from the MWTM Main Menu. MWTM loads the DEFAULT view.

To display a Save File Dialog, use one of the following procedures:

- To display the Save File Dialog: Save Filter, click **Save** in the Event Filter dialog. For more information, see the "Saving an Event Filter File" section on page 5-13.

- To display the Save File Dialog: Preferences File List, select **File > Save As** from the Preferences window. For more information, see the "Saving the Preference Settings File" section on page 11-23.

- To display the Save File Dialog: Seed File List, select **File > Save As** from the Discovery Dialog. For more information, see the "Saving a Seed File" section on page 2-13.

- To display the Save File Dialog: View List, select **File > Save As** from the View Editor window. For more information, see the "Closing the View Editor Window" section on page 4-39.

Viewing Real-Time Data for a Node

MWTM enables you to view detailed statistics for a selected node.

To display detailed statistics for one of these nodes, select the Shorthaul Performance or Backhaul Performance tab in the Node Details window.

For more information, see the following sections:

- "Node Details: Shorthaul Performance" section on page 6-18

- "Node Details: Backhaul Performance" section on page 6-24

Changing Real-Time Poller and Counter Settings

MWTM provides three pollers for use in the MWTM client GUI and Web pages: a fast poller, a slow poller, and a status refresh poller. MWTM enables you to change settings for those pollers, and also enables you to specify how you want MWTM to aggregate displayed counter values.

To change MWTM poller refresh and counter display settings, use one of the following methods:

- The fast poller, slow poller, and status refresh poller have default minimum, maximum, and default settings specified in the MWTM *System.properties* file. To change those settings, see the "Changing MWTM System Poller Settings" section on page 11-24.

- To change MWTM poller refresh and counter display settings for the MWTM GUI using the MWTM Preferences window, see the "Poller Settings" section on page 11-8.

Connecting to a New Server

MWTM enables you to connect the client to a new MWTM server. For example, you can monitor two or more networks from the same MWTM client, simply by switching servers. Or, if you have two MWTM servers monitoring the same network, and one server fails, the MWTM client automatically switches to the secondary server.

If you want to determine the default host name before you connect to the new server, it is contained in the SERVER_NAME entry in the *System.properties* file:

- If you installed MWTM in the default directory, */opt*, then the location of the *System.properties* file is */opt/CSCOsgm/properties/System.properties*.

- If you installed MWTM in a different directory, then the *System.properties* file is located in that directory.

To connect the client to a new server, select **File > Connect to New Server** from the MWTM Main Menu. MWTM displays the Connect to New Server Dialog.

The Connect to New Server Dialog contains the following fields and buttons:

Field or Button	Description
Server Name or IP Address	Name or IP address of the new server. Enter the name of the new server, or its IP address, in the **Server Name or IP Address** field.
Name Server Port	UDP port number for the new server. Enter the MWTM Naming Server UDP port number for the new server in the **Name Server Port** field. The default value is 44742.
OK	Stops the MWTM client, then restarts the client connected to the specified server. When you have entered the name of the new server, or its IP address, and its UDP port number, click **OK**. MWTM stops the MWTM client, then restarts the client connected to the new server.
Cancel	Closes the Connect to New Server Dialog without connecting to the new server.
Help	Displays online help for the Connect to New Server Dialog.

Integrating MWTM with Other Products

MWTM does not require either CiscoWorks or HP OpenView, but MWTM does integrate with those products to provide added value. See the following sections for more information:

- Integrating MWTM with HP OpenView, page 3-35
- Integrating MWTM with CiscoWorks, page 3-35
- Forwarding Traps to Other Hosts (Server Only), page 3-36

Integrating MWTM with HP OpenView

MWTM can integrate with HP OpenView during installation, registering to receive forwarded traps. See the "Installing MWTM on Solaris" chapter of the *Cisco Mobile Wireless Transport Manager Installation Guide* for more information.

You can also integrate MWTM with HP OpenView after installation, using the **mwtm trapsetup** command. See the "mwtm trapsetup" section on page C-69 for more information.

Integrating MWTM with CiscoWorks

MWTM can integrate with CiscoWorks during installation, registering with CiscoWorks as an installed application. See the "Installing MWTM on Solaris" and "Installing MWTM on Windows" chapters of the *Cisco Mobile Wireless Transport Manager Installation Guide* for more information.

You can also integrate MWTM with CiscoWorks after installation, using the **mwtm cwsetup** command. See the "mwtm cwsetup" section on page C-16 for more information.

When MWTM is integrated with CiscoWorks, you can launch the CiscoWorks Device Center and CiscoView from the MWTM Main Menu. See the following sections for more information:

- Launching the CiscoWorks Device Center, page 3-36
- Launching CiscoView, page 3-36

Launching the CiscoWorks Device Center

The CiscoWorks Device Center provides a number of useful Web-based device-monitoring functions, including reachability trends, response time trends, interface status, Syslog browsing, and a detailed inventory.

To link MWTM to the Device Center:

Step 1   Make sure CiscoWorks is installed in the network.

Step 2   Select a node that you know CiscoWorks is monitoring in a window. If you select a non-RAN-O node, or a node with a status of **Unmanaged** or a **Device Type** of **Unknown**, the **CiscoWorks** menu option is grayed-out.

Step 3   Select **Products > CiscoWorks > Device Center** from the MWTM Main Menu.

Step 4   At the prompt, enter a CiscoWorks user ID and password. MWTM links to CiscoWorks Device Center dashboard.

Launching CiscoView

CiscoView provides a real-time, color-coded, graphical representation of Cisco devices. You can use CiscoView to quickly identify an incorrect status on a port or interface. If you are running CiscoWorks on UNIX or Windows, you can access CiscoView through the link to the Web version of CiscoWorks.

To link MWTM to CiscoView:

Step 1   Select a node that you know CiscoWorks is monitoring in a window. If you select a non-RAN-O node, or a node with a status of **Unmanaged** or a **Device Type** of **Unknown**, the **CiscoWorks** menu option is grayed-out.

Step 2   Select **Products > CiscoWorks >CiscoView** from the MWTM Main Menu.

Step 3   At the prompt, enter a CiscoWorks user ID and password. MWTM links to CiscoView.

Forwarding Traps to Other Hosts (Server Only)

MWTM enables you to forward SNMP traps to other SNMP servers, or hosts. This enables MWTM to function as a trap multiplexer, integrating with high-level event- and alarm-monitoring systems such as the Cisco Info Center (CIC), HP OpenView, and Micromuse's Netcool suite of products. These systems can provide a single high-level view of all alarm monitoring in your network, making it easier to detect and resolve problems.

To enable MWTM to forward SNMP traps to other hosts, specify the list of hosts in the *TrapForwarder.properties* file. The default file is located in the MWTM *properties* directory:

- If you installed MWTM in the default directory, */opt*, then the default file is located at */opt/CSCOsgm/properties/TrapForwarder.properties*.

- If you installed MWTM in a different directory, then the default file is located in that directory.

In the *TrapForwarder.properties* file, begin all comment lines with a pound sign (#).

All other lines in the file are host definition lines, with the following format:

SERVER*xx***=***dest-address***[:***portno***]**

where:

- *xx* is the user-defined server number.
- *dest-address* is the host name, or the IP address in dotted decimal format.
- *portno* is the optional port number. The default port number is **162**.

For example, the following host definition line:

SERVER02=64.102.86.104:162

enables MWTM to forward traps to **Server 02**, with IP address **64.102.86.104**, on port **162**.

Any changes you make to the *TrapForwarder.properties* file take effect when you restart the MWTM server. Thereafter, MWTM forwards all traps from the listed hosts except:

- Traps that MWTM cannot parse.
- Traps from hosts listed in the *trapaccess.conf* file. For more information, see the "Limiting Traps by IP Address (Server Only)" section on page 11-29.

Version 2c traps that do not have the agent IP address already specified in the varbind list are modified to include the agent IP address in the varbind list.

You can also forward MWTM events to other hosts, in the form of SNMP traps. For more information, see the "Forwarding Events as Traps to Other Hosts" section on page 5-35.

Exporting MWTM Data

MWTM enables you to export its data for use by other products, such as CiscoWorks or Microsoft Excel. This section includes the following information:

- Exporting Current MWTM Data for Network Objects, page 3-39
- Exporting Current MWTM Node Names and SNMP Community Names, page 3-40
- Viewing RAN Data Export Files, page 3-40

Exporting Current MWTM Data for Network Objects

You can use the MWTM command line interface (CLI) to export all MWTM data, or to export only selected MWTM data.

To export all current MWTM data, with fields separated by vertical bars (|; this is the default setting), enter the **mwtm export all** command with the **-d bar** keywords:

> **mwtm export all -d bar**

To export all MWTM data with fields separated by commas (,), specify the **-d comma** keywords:

> **mwtm export all -d comma**

To export all MWTM data with fields separated by tabs, specify the **-d tab** keywords:

> **mwtm export all -d tab**

To export only node-specific MWTM data, specify the **node** keyword:

> **mwtm export nodes**

You can also specify the **-d comma** or **-d tab** keywords on any of these object-specific **mwtm export** commands.

Here is sample output for the **mwtm export nodes** command:

```
mwtm-sun24:2> ./mwtm export nodes
# v5.0.0.9
# t1122238712043|Sun Jul 24 16:58:32 EDT 2005
#
# Total 12 nodes
# name|displayname|sgmid|old_description|cllicode|ipaddress|
old_pointcode|old_secondary|old_capability|state|statetimestamp|
ioslevel|devicetype|usericonname|sysdescr|lastpolltimestamp|
lastpolltime|avgpolltime|old_lasterrormsg|
old_lasterrortime|notesexist|old_variant|sysuptime|rebootreason|
statereason|discoveredtime|eventRcvd|telnetTo|ignore|customDisplayname|processTraps|nsocon
fig|mtp3offload|rfpeerstate|trapPollingEnabled|
reportPollingEnabledRNC_to_ems1941kb|RNC_to_ems1941kb|1215|not_used|
not_used|null|not_used|not_used|not_used|Unmanaged|1121953480035|0|RNC|null|null|-1|-1|-1|
not_used|not_used|false|not_used|-1|null|0|
1121953480036|false|null|false|null|true|not_used|not_used|not_used|
false|false|BSC_to_ems1941kb|BSC_to_ems1941kb|1219|not_used|not_used|
null|not_used|not_used|not_used|Unmanaged|1121953480044|0|BSC|null|
null|-1|-1|-1|not_used|not_used|false|not_used|-1|null|0|1121953480045|false|null|false|nu
ll|true|not_used|not_used|not_used|false|false|
BSC_to_ems1941kb|BSC_to_ems1941kb|1223|not_used|not_used|null|not_used|not_used|not_used|U
nmanaged|1121953480050|0|BSC|null|null|-1|-1|-1|
not_used|not_used|false|not_used|-1|null|0|1121953480050|false|null|
false|null|true|not_used|not_used|not_used|false|false|
BSC_to_ems1941kb|BSC_to_ems1941kb|1227|not_used|not_used|null|not_used|not_used|not_used|U
nmanaged|1121953480055|0|BSC|null|null|-1|-1|-1|
not_used|not_used|false|not_used|-1|null|0|1121953480055|false|null|
false|null|true|not_used|not_used|not_used|false|false|
ems1941kb.cisco.com|ems1941kb.cisco.com|1182|not_used|not_used|
[172.18.156.21][20.1.1.254]|not_used|not_used|not_used|Unknown|
1122221399654|1|CiscoMWR-1941-DC|null|sysDescr|1122220550854|170|170|
not_used|not_used|false|not_used|22232166|reload|8|1121953480066|false|null|false|null|tru
e|not_used|not_used|not_used|false|false|
RNC_to_ems1941ka|RNC_to_ems1941ka|1291|not_used|not_used|null|not_used|not_used|not_used|U
```

```
nmanaged|1121953480230|0|RNC|null|null|-1|-1|-1|
not_used|not_used|false|not_used|-1|null|0|1121953480230|false|null|
false|null|true|not_used|not_used|not_used|false|false|
BSC_to_ems1941ka|BSC_to_ems1941ka|1294|not_used|not_used|null|not_used|not_used|not_used|U
nmanaged|1121953480231|0|BSC|null|null|-1|-1|-1|
not_used|not_used|false|not_used|-1|null|0|1121953480231|false|null|
false|null|true|not_used|not_used|not_used|false|false|
BSC_to_ems1941ka|BSC_to_ems1941ka|1297|not_used|not_used|null|not_used|not_used|not_used|U
nmanaged|1121953480233|0|BSC|null|null|-1|-1|-1|
not_used|not_used|false|not_used|-1|null|0|1121953480233|false|null|
false|null|true|not_used|not_used|not_used|false|false|
BSC_to_ems1941ka|BSC_to_ems1941ka|1300|not_used|not_used|null|not_used|not_used|not_used|U
nmanaged|1121953480234|0|BSC|null|null|-1|-1|-1|
not_used|not_used|false|not_used|-1|null|0|1121953480234|false|null|
false|null|true|not_used|not_used|not_used|false|false|
ems1941ka.cisco.com|ems1941ka.cisco.com|1233|not_used|not_used|
[172.18.156.20][20.1.1.253]|not_used|not_used|not_used|Warning|
1122221418932|1|CiscoMWR-1941-DC|null|sysDescr|1122238176675|312|314|
not_used|not_used|false|not_used|1752636|reload|60|1121953480235|false|null|false|null|tru
e|not_used|not_used|not_used|false|false|
JMX0710L3S9|JMX0710L3S9|1786|not_used|not_used|null|not_used|not_used|not_used|Waiting|112
1957445502|0|IPDevice|null|null|-1|-1|-1|not_used|not_used|false|not_used|-1|null|0|112195
7445502|false|null|false|null|true|not_used|not_used|not_used|false|false|JMX0710L2YY|JMX0
710L2YY|
3608|not_used|not_used|null|not_used|not_used|not_used|Waiting|
1121986548590|0|IPDevice|null|null|-1|-1|-1|not_used|not_used|false|
not_used|-1|null|0|1121986548590|false|null|false|null|true|not_used|
not_used|not_used|false|false|
#
```

For more information about the use of the **mwtm export** command, see the "mwtm export" section on page C-21.

Exporting Current MWTM Node Names and SNMP Community Names

To export current MWTM node names and read and write SNMP community names, in CiscoWorks import format, with fields separated by commas (,), specify the **cw** keyword:

mwtm export cw

You can export this data to a file, then use the file to import the devices into the CiscoWorks database.

For more information about the use of the **mwtm export cw** command, see the "mwtm export cw" section on page C-21.

Viewing RAN Data Export Files

MWTM provides yearly, monthly, daily, and hourly RAN data export files for all nodes and interfaces known to MWTM.

To view RAN data files, select **RAN Backhaul Utilization** from the MWTM Server Home Page. This action opens the MWTM - RAN Backhaul Utilization Statistics page. Then select a year, month, day, or hour for a specific node. This action displays capacity planning and backhaul utilization statistics for the selected node and interval.

To export the RAN data, click **RAN Data Export** from the menu bar of the MWTM - RAN Backhaul Utilization Statistics page. This action opens the File Download window. Click **Open** to view the export data or **Save** to download the export file to your computer.

Using the Windows Start Menu

This section includes the following information:

Launching the MWTM Client

To launch the MWTM Client, select **Start > Programs > Cisco MWTM Client > Launch MWTM Client** from the Windows Start menu, or double-click the MWTM icon on the desktop. MWTM launches the MWTM Client.

Launching the MWTM Event Configurator

To launch the MWTM Event Configurator, select **Start > Programs > Cisco MWTM Client > Launch MWTM Event Configurator** from the Windows Start menu.

Changing the Default MWTM Server Name

If there is a failure of the IP address or host name to which your MWTM client is bound, you can change the default MWTM server name from the Windows Start menu.

To change the default MWTM server name, use the following procedure:

Step 1   Close all open MWTM windows.

Step 2   Select **Start > Programs > Cisco MWTM Client > Modify Default MWTM Server Name**. MWTM opens a DOS window, and asks you to enter the name of the new default MWTM server.

Step 3   Type the name of the new default MWTM server, and press **Enter**. MWTM sets the default server to the new name you entered.

See the "Connecting to a New Server" section on page 3-33 for more information about changing the default MWTM server name.

Changing the Default MWTM Telnet Path

MWTM provides a default Telnet interface for Telnet sessions, but you can also specify a path to a different Telnet application, if you prefer.

To specify the path to the new Telnet application, use the following procedure:

Step 1   Select **Start > Programs > Cisco MWTM Client > Modify Default MWTM Telnet Path**. MWTM opens a DOS window, and asks you to enter the full Telnet executable pathname.

Step 2   Type the new pathname, and press **Enter**. If you do not enter a new pathname, MWTM uses the system default Telnet executable. MWTM asks you to enter any special parameters you want to pass to the new Telnet application. The default is **n**, for no special parameters.

Step 3 Type the special parameters you want to pass to the new Telnet application, and press **Enter**. MWTM uses the new Telnet application for all Telnet sessions on the MWTM client, such as when you select **View > MWTM Server > Telnet To**.

Step 4 Close the DOS window.

Launching the MWTM DOS Prompt

To launch a DOS prompt for MWTM from the Windows Start menu, select **Start > Programs > Cisco MWTM Client > MWTM DOS Prompt**. MWTM opens a DOS window, starting in the *bin* directory:

- If you installed the MWTM client in the default directory, *C:\Program Files*, then the DOS prompt starts at *C:\Program Files\SGMClient\bin*.

- If you installed the MWTM client in a different directory, then the *bin* directory is located in that directory.

Launching the MWTM SSL Certificate Tool

To launch the MWTM SSL Certificate Tool from the Windows Start menu, select **Start > Programs > Cisco MWTM Client > MWTM SSL Certificate Tool**.

Uninstalling MWTM

You can uninstall MWTM from the Windows Start menu. For details, see the "Uninstalling MWTM" section of the *Cisco Mobile Wireless Transport Manager Installation Guide*.

Viewing the MWTM README File

The MWTM README file contains late-breaking information about MWTM that might not be found in the other product documentation. To open the MWTM README file from the Windows Start menu, select **Start > Programs > Cisco MWTM Client > View README**.

Using the MWTM Command Line Interface

MWTM provides a command line interface that enables you to interact with the MWTM and with the Cisco IOS software operating system by entering commands and optional arguments. For more information, see the "MWTM Command Reference" section on page C-1.

Running Simultaneous MWTM Sessions

MWTM uses a client/server architecture that allows you to run multiple sessions of the MWTM client simultaneously. Central services and database functions are provided on an MWTM server that communicates with multiple MWTM clients. You can install the MWTM client software on the same system as the MWTM server, or on a different system on the same network as the MWTM server.

> **Note**   Running more than one MWTM client on the same workstation can degrade the workstation's performance.

MWTM recommends a maximum of 20 clients per MWTM server. If you connect more than 20 clients to a single server, the server requires additional memory and a more powerful CPU.

Exiting the MWTM Client

When you are finished monitoring network performance statistics, you can exit the MWTM client using the following procedure:

Step 1   From the MWTM Main Menu, select **File > Exit**. The Exit MWTM confirmation window is displayed.

Step 2   Click **Yes** to close the MWTM client application.