C H A P T E R   3

Using Cisco Wireless Manager

This chapter includes the following procedures for using Cisco Wireless Manager to manage Cisco uBR7200 series universal broadband routers:

Starting the Cisco Wireless Manager Server

You can start the Cisco Wireless Manager by following two different procedures— depending on whether or not you have installed Cisco IP Manager.

> **Note** The installation log files are stored in the /tmp directory and show a record of the installed components.

Step 1   To start Cisco Wireless Manager server for the first time, log in as root.

Step 2   Enter the following commands:

cd /opt/cemf/bin

./cemf start

Starting CEMF and the Cisco Wireless Manager Client

Step 1   Ensure that you start the Cisco Wireless Manager server.

Step 2   From the Cisco Wireless Manager server console, go to the /opt/cemf/bin directory and enter ./**cemf session**.

or

From a UNIX workstation or PC

a. Open a display session (rlogin, Telnet, rsh) to the Cisco Wireless Manager server or Cisco Wireless Manager client.

b. Go to the /opt/cemf/bin directory.

c. Enter ./**cemf session**.

Note   If you are using a display session, be sure the DISPLAY environment variable is set correctly.

Step 3   Enter **admin** for both the username and for the password. Admin or root users can add additional users and passwords.

About Deploying uBR

The first step in managing a device is to *deploy* Cisco EMF management containment levels and objects.

The Cisco EMF management levels are:

- Region
- Site
- Network
- Bay

Cisco Wireless Manager includes Cisco uBR7200 series universal broadband routers, RF line cards, and upstream and downstream channels.

Wireless subscriber unit objects appear under the upstream channels, and the customer premises equipments appear under the Wireless subscriber unit objects.

By default, performance polling is disabled for the deployed or discovered objects. You can activate performance polling per Cisco uBR7200 series universal broadband router.

See the "Enabling/Disabling Performance Polling" section on page 3-5.

> **Note**   Do not rename the parent node objects.

In Cisco EMF, you can deploy actual or soon-to-be installed hardware devices by using the following procedures. Cisco recommends that you discover each Cisco uBR7200 series universal broadband router individually.

> **Note**   When you insert a new card in a previously discovered Cisco uBR7200 series universal broadband router, Cisco Wireless Manager automatically discovers and commissions the card as a Cisco uBR7200 series universal broadband router object.

Deploying uBR

Step 1   To deploy containment levels and objects, click **Map**.

The Object tree appears with the default Manager level as the top level.

Step 2   To assign additional levels and objects from the right-click menu, select **Deploy Wireless uBR.**

Step 3   Select the level that you want.

Using Autodiscovery

Use the Cisco EMF Autodiscovery function to automatically discover and get a CEMF tree view of existing Cisco uBR7200 series universal broadband routers and their objects that are already physically installed on your network.

> **Note**   During the discovery process, when you enter the IP addresses, SNMP read-only string, and physical path, make sure that the read-only string matches the Cisco uBR7200 string setting. If the strings do not match, Cisco Wireless Manager cannot discover the Cisco uBR7200 series universal

broadband routers.

To set the Cisco uBR7200 series universal broadband router community strings individually, use the CEMF Open Configuration menu command.

Tips Before running the autodiscovery process, ensure that sufficient system resources are available. For large networks, the autodiscovery process may require a significant amount of time and resource to complete.

Step 1 In the Cisco EMF tree view, right-click the level under which you want to deploy devices.

The Options menu appears.

Step 2 Select **Autodiscovery**.

The Discover Network Devices dialog box appears.

Step 3 Run the Discovery process as described in your Cisco EMF documentation.

Note Do not select "IP only" autodiscovery because it does not use the SNMP capabilities of the devices and marks all devices as generic IP devices. Use the SNMP or IP and SNMP autodiscovery options.

Step 4 To check the status of the autodiscovery process, select a Cisco uBR7200 series universal broadband router.

Step 5 From the right-click menu, choose **Commission/Decommission Object**.

The status of the object appears. A "normal" status indicates that the Cisco uBR7200 series universal broadband router and its components have been discovered.

Enabling/Disabling Performance Polling

By default, performance polling is disabled for the deployed or discovered objects. You can activate performance polling for subscriber units, uBRs, radio line card, and upstream, and downstream objects per Cisco uBR7200 series universal broadband router and use it to collect data for the subscriber unit customized report.

To enable performance polling for a Cisco uBR7200 series universal broadband router:

Step 1   Select the Cisco uBR7200 series universal broadband router in the Object or Map View.

Step 2   From the right-click menu, select **Start/Stop Performance Polling**.

A performance polling dialog box appears.

Step 3   Click **Start** to start performance polling or **Stop** to stop performance polling.

If performance polling has already been started on the object, an error message appears.

Commissioning/Decommissioning Devices

After a device is discovered and deployed, you can add devices to be managed (commission) and remove devices from being managed (decommission).

You can commission or decommission a single:

- Cisco uBR7200 series universal broadband router
- Radio line card
- Upstream channel
- Downstream channel
- Subscriber unit

You can also commission all the objects under a Cisco uBR7200 series universal broadband router by decommissioning the router; then, by re-commissioning it.

Step 1   To commission or decommission an object, select the object.

Step 2   From the right-click menu, select **Open commission/decommision**.

The Commission/Decommision dialog box appears.

Using the Events Browser

This is a feature of the Cisco uBR7200 series router Fault Management.

For more information, see the "About Fault Management" section on page 1-4.

✎ **Note**   By default, event messages are stored for seven days. This setting is controlled by the alarmDirServer.ini file located in the /{CEMFROOT}/cemf/config/init directory.

To view event messages:

Step 1   For all active objects, click **Browser** in the Cisco EMF Launch Pad.

The Cisco EMF Event Manager window appears displaying the received event messages.

Step 2   For a specific object level or device, select the containment level or object in a Map View or Object Tree.

Step 3   From the right-click menu, select **Event Browser**.

The received event messages for the selected object level appears.

Forwarding Traps

Make sure that the Cisco uBR7200 series universal broadband routers are configured to send traps to the Cisco Wireless Manager. This configuration involves:

   • Enabling traps

- Specifying a source interface for SNMP traps
- Setting destination host IP addresses
- Ensuring the subscriber unit MIB is set

Tips You can enter multiple host IP addresses to forward traps to multiple SNMP management stations.

For a detailed description of the traps supported by the Cisco uBR7200 series universal broadband router, go to the Cisco Wireless Manager online help.

To enable the cable-specific SNMP traps, configure the Cisco uBR7200 series universal broadband router by entering the following commands:

snmp-server enable traps

snmp-server trap-source [*interface port/slot*]

snmp-server host [*IP address*] [*community string*]

Overview of Sending Trap Notifications

Follow these tasks to send Trap notifications:

Task 1: Adding e-mail addresses

Task 2: Creating a Notification Profile

Task 3: Creating an Event Group

Note Refer to *Cisco EMF 3.1 Users' Guide* for detailed information on these tasks or see the online help associated with each dialog box.

Task 1: Adding e-mail Addresses

Step 1   Go to the directory cd/<CEMF DIRECTORY>/config/scripts.

Step 2   Open TrapNotificationMail file in an editor.

Step 3   Change the default address (address@cisco.com) to the valid addresses you want to send the trap notifications to. For mutiple addresses, use double quotation marks separated by a space.

For example: mailUser = "username1@cisco.com username2@cisco.com"

Step 4   Save your changes and exit from the editor.

Step 5   Give executable permission to the file by entering the following CLI command: **chmod 755 TrapNotificationMail**

Task 2: Creating a Notification Profile

You can start the Notification Profile Application by using the Notify icon in the Cisco EMF launchpad.

By entering a notification profile, you can send an e-mail and e-page to the addresses you have specified on the file with the following information:

- WEM Server: The hostname of the management workstation.

- The object on which an event has occurred.

- A brief message describing the event type.

- The time when the event occurred.

For more information on creating a notification profile, see the online help under the Notification Profiles dialog box.

You can create notification profiles to specify your preferred notification type, for example Beep, Pop Up Dialog, Run Script, etc.

Select Run script type notification and enter the file path:

/opt/cemf/config/scripts/TrapNotificationMail

Task 3: Creating an Event Group

With the Event Group application, you can organize the network elements into event groups, and also view the status of these groups as scoreboards.

The Event Group Application opens from the Cisco EMF launchpad. For detailed steps on how to create event groups and scoreboards, see the online help in the Event Group dialog box, or refer to the *CEMF 3.1 Users' Guide*.

Viewing a Cisco uBR7200 Inventory Report

You can view inventory reports to manage the currently deployed Cisco uBR7200 series universal broadband routers. Inventory reports include:

- The number and IOS releases of Cisco uBR7200 series routers
- The following data about uBR chassis:
  - Power supply
  - Temperature
  - Voltage
  - Memory pool
  - Flash device
  - Flash files

This data is available for the installed radio line cards, port adapters, and upstream and downstream channels.

To view an inventory report:

Step 1   Select the Cisco uBR7200 series router in a Map View or Object Tree.

Step 2   From the right-click menu, select **uBR Inventory Reports**.

The inventory report window appears with tabs for card information and environment data.

About Downloading and Upgrading a Software Image

You can download Cisco IOS software images to a single subscriber unit or multiple registered subscriber units of the same type associated with a specific upstream channel.

Tips   No reports are generated to summarize how many downloads failed or succeeded.

You can use the Software Download Summary Report to verify the current image on specified subscriber units.

The download subscriber unit feature is supported for:

- Cisco uBR3640
- Cisco uBR3620
- Cisco uBR 2600
- Select Cisco partner subscriber units

Note   When selecting more than one subscriber unit, ensure that all subscriber units are the same type and all selected subscriber units can use the specified TFTP server.

Downloading Software to One Subscriber Unit

Step 1   Select the Cisco uBR7200 that contains the subscriber unit.

Step 2   Select the subscriber unit for which you want to upgrade the software image.

Step 3   From the right-click menu, select **Software Download**.

The Software Download dialog box appears.

Step 4   Configure the following software download parameters:

– TFTP server IP address that contains the software image

– Software image filename. The filename format is
<ios-image|ucode-image>

Note   Ucode-image filename is optional. It is required if you want to upgrade the ODU image.

Step 5   Click the Initiate Download button.

Step 6   Specify the scheduled time for the download.

Downloading Software to Multiple Subscriber Units of the Same Type

Step 1   Select the Cisco uBR7200 that contains the subscriber unit.

Step 2   Select the upstream on which multiple subscriber units are connected.

Step 3   From the right-click menu, select **Software Download**.

The Software Download dialog box appears.

Step 4   Select the subscriber units in the object list of the software download dialog box.

Step 5   Configure the following software download parameters:

– TFTP server IP address that contains the software image

         –   Software image filename. The filename format is
             <ios-image|ucode-image>Ucode-image filename is optional. It is
             required if you want to upgrade the ODU image.

Step 6   Click the Initiate Download button.

Step 7   Specify the scheduled time for the download.

About CiscoView

CiscoView provides a graphical view of the Cisco uBR7200 devices and subscriber units, so that you can perform real-time fault and performance monitoring of the devices, cards, interfaces, and ports.

CiscoView currently supports the following real-time status data:

- uBR Mac status including capacities, sync interval, Universal Channel Descriptor (UCD) interval, maximum service identifiers (SIDs), insertion interval, and invited-ranging attempts.

- uBR upstream status including channel identifier, frequency, channel width, modulation profile, slot size, transmit timing offset, ranging back-off start window, ranging back-off end window, transmit back-off start window, and transmit back-off end window.

- uBR downstream status including channel ID, frequency, channel width, modulation, interleave, and power.

- uBR upstream modulation profiles.

- uBR QoS profiles including index, priority, maximum upstream bandwidth, minimum guaranteed upstream bandwidth, maximum downstream bandwidth, and maximum number of mini-slots that can be requested for a single upstream transmission—whether or not baseline privacy is enabled.

- MAC status, including the MAC address of the CMTS that controls this CM, capabilities, and ranging response time-out.

Monitoring Devices with CiscoView

CiscoView displays the snapshot and graph data of device-specific performance statistics and status.

Step 1   To start CiscoView, select the device in a Map View or Object Tree.

Step 2   From the right-click menu, choose **Launch CiscoView**.

The CiscoView application window appears.

Specifying Configuration Settings

You can specify and view the Cisco uBR7200 series router configuration parameters by using Cisco Wireless Manager. These settings are required to use the Find/Ping Subscriber Unit feature.

Step 1   To specify configuration parameters for reference, select the Cisco uBR7200 series router in an Object Map.

Step 2   From the right-click menu, select **uBR Management Screen**.

The uBR Management Screen dialog box appears.

Viewing Log Files

You can use CEMF to log information by using log files located under the /opt/cemf/logs.

Note   Of all the log files, the file named ciscop2mpCtlr.log and ciscop2mpCtlr.old are most important. These ASCII files contain all Cisco Wireless Manager application specific log messages.

By default, the log files do not include DEBUG entries. To view log messages of DEBUG severity (this includes all other severities):

Step 1   Go to the loggercommon.include file located in the /opt/cemf/config/init directory.

Step 2   To log all DEBUG level messages, change the setting to 15. By default the loggingLevelMask is set to 10.

✎
Note   Changing the level to 15 affects how quickly the log files are archived as .old files.

Step 3   Stop CEMF.

Step 4   For the changes to take effect, reboot the system.

Controlling the Size of Log Files

You can also control the size of the ciscop2mpCtlr.log file by using the ciscop2mpCtlr.ini file located in the /opt/CEMF/config/init directory.

Whenever the ciscop2mpCtlr.log file reaches its maximum size as specified in the control file, it is archived to a ciscop2mpCtlr.old file and a new ciscop2mpCtlr.log file is created.

Numerous other log files are also available for troubleshooting.

Log files are stored in the /opt/cemf/logs directory.

Step 1   Go to the /opt/cemf/config/init directory.

Step 2   Specify, in KB, the size of the log file in the logger section of ciscop2mpCtlr.ini.

Step 3   Stop and re-start CEMF.

Example: Controlling the Size of a Log File

See the following example of a section of the ciscop2mpCtlr.ini for the logger section in order to specify a 5 MB ciscop2mpCtlr.log file:

```
[logger]
#include "loggercommon.include"
loggingName = ciscop2mpCtlr
maxLogfileSize = 5000=
```

Backing Up and Restoring Databases (System Maintenance)

With Cisco EMF, you can back up and restore databases (typically found under /opt/cemf/db). Backups and restores are performed by using the Cisco EMF script cemf located under /opt/cemf/bin.

Table 3-1   CEMF Commands

Enter	In Order to
./cemf start	Start the system.
./cemf stop	Stop the system.
./cemf session	Start a GUI session.
./cemf query	Display a list of running system processes.
./cemf reset	Reset all system databases.
./cemf shell	Setup the system shell environment.
./cemf load [-h]	Load an EM by using self-management (-h for help).
./cemf install [-h]	Install optional system components (-h for help).
./cemf backup [-h]	Backup system databases (-h for help).
./cemf restore	Restore system databases (-h for help).
./cemf license	Configure the system license (-h for help).

Step 1   Go to the Command line prompt in the terminal window.

Step 2   Change to the directory /opt/cemf/bin and enter **./cemf shell**.

Step 3   For available commands, enter **./cemf**.

Step 4   To do a specific task, enter the command name for that task as shown in Table 3-1.

Testing Connectivity

For quick fault isolation, Cisco Wireless Manager provides IP- and MAC-layer ping connectivity tests between the Cisco uBR7200 series routers and the subscriber units.

When you use the Find feature, Cisco Wireless Manager sends the command to the specified Cisco uBR7200 series router, which finds the subscriber unit containment path and object location, and returns them to the Cisco Wireless Manager.

The IP Ping command pings the Cisco uBR7200 series router and the subscriber unit and forwards the results back to Cisco Wireless Manager to verify the IP network connectivity.

Step 1   To ping a subscriber unit, select the group of Cisco uBR7200 series routers.

Step 2   From the right-click menu, select **uBR Management Screen**.

Step 3   Click the **Ping** tab.

The Find/Ping page appears.

Step 4   Enter the enable password and password parameters for the related Cisco uBR7200 series routers in the Config frame of this dialog box for the Find/Ping feature to be available.

For detailed information on these procedures and for dialog box help, go to the online help integrated with the software.