CHAPTER 23

Using Ethernet Local Management Interface Commands

Ethernet Operations, Administration, and Maintenance (E-OAM) consists of three main feature sets:

- IEEE 802.1ag and ITU-T Y.1731 Connectivity Fault Management (CFM).
- IEEE 802.3ah Ethernet OAM discovery, link monitoring, remote fault detection, and remote loopback.
- Ethernet Local Management Interface (Ethernet LMI), which allows a customer edge (CE) network element to obtain user network interface (UNI) and Ethernet virtual circuit (EVC) status and service attribute information from the service provider edge.

Ethernet LMI is a protocol between the CE network element and the provider edge (PE) network element. It runs only on the PE-CE UNI link and notifies the CE of connectivity status and configuration parameters of Ethernet services available on the CE port. Ethernet LMI interoperates with an OAM protocol, such as CFM, that runs within the provider network to collect OAM status. CFM runs at the provider maintenance level. Ethernet LMI relies on the OAM Ethernet Infrastructure (EI) to work with CFM for end-to-end status of EVCs across CFM domains.

The IOS OAM manager streamlines interaction between OAM protocols, and handles the interaction between CFM and Ethernet LMI. Ethernet LMI interaction with the OAM manager is unidirectional, running only from the OAM manager to Ethernet LMI on the U-PE side of the switch. Information is exchanged either as a result of a request from Ethernet LMI or triggered by the OAM manager when it receives notification of a change from the OAM protocol. The following type of information is relayed:

- EVC name and availability status
- Remote UNI name and status
- Remote UNI counts

Ethernet LMI is typically disabled by default.

Supported Network Elements

You can run the Ethernet LMI commands on the following network elements:

- Cisco 7600 Series Routers
- Cisco Catalyst 3750 Metro Series Switches
- Cisco Catalyst 6500 Series (IOS) Switches
- Cisco ME3600X and Cisco ME3800X Carrier Ethernet Switches

- Cisco ME 3400 Series Ethernet Access Switches
- Cisco MWR 2941 Mobile Wireless Routers
- Cisco ASR9000 Series Routers

See Part 1—Cisco VNEs for details on the software versions Prime Network supports for these network elements. To run the Ethernet LMI commands, the software on the network element must support the Ethernet LMI technology.

Configuring Ethernet LMI Components

The following sections explain how to configure Ethernet LMI components:

- Enabling Ethernet LMI Globally, page 23-2
- Configuring Multipoint-to-Multipoint or Point-to-Point Ethernet Virtual Connection, page 23-3
- Configuring UNI on an Interface, page 23-3
- Enabling Ethernet LMI on an Interface, page 23-4
- Configuring the Service Instance VLAN ID on an Interface, page 23-5

Note In the GUI, parameters that are displayed in bold text are mandatory.

Enabling Ethernet LMI Globally

Use the **Enable E-LMI Global** command to globally enable Ethernet LMI on all interfaces.

Note You can not execute the **Enable E-LMI Global** command on network elements that run on Cisco IOS XR software.

Step 1 In the inventory window, expand the Logical Inventory tree.

Step 2 Right-click the Ethernet LMI node and choose **Commands > Enable > Global E-LMI**. The Global Ethernet LMI dialog box opens.

The command enables Ethernet LMI on all interfaces and does not require any input parameters.

Step 3 To schedule the command, click the Scheduling tab. For more details on scheduling, see Scheduling a Command.

Step 4 To run the command, click **Execute Now**.

Any errors are displayed in the Result tab.

Step 5 To close the dialog box, click **Close**.

Configuring Multipoint-to-Multipoint or Point-to-Point Ethernet Virtual Connection

Use the **Configure MultiPoint To MultiPoint or Point To Point EVC** command to configure multipoint-to-multipoint or point-to-point Ethernet virtual connection (EVC).

Step 1 In the inventory window, expand the Logical Inventory tree.

Step 2 Right-click the Ethernet LMI node and choose **Commands > Configure MultiPoint To MultiPoint or Point To Point EVC**. The Configure MultiPoint To MultiPoint or Point To Point EVC dialog box opens.

Step 3 By default, the General tab is selected. Enter values for the following parameters.

Input Parameter	Description
Evc Name	Name of the Ethernet virtual connection.
Uni Count No	The range of the Unified network interface(UNI) is 2 to 1024; the default is 2. If you enter a value of 2, you have the option to select point-to-multipoint service. If you configure a value of 3 or greater, the service is point-to-multipoint.
Vlans to apply cross check to ([1-4094])	VLAN ID range from 1 to 4094.
Domain Name	Name of the domain.

Step 4 To see the commands that will be applied on the device, click **Preview**.

You can view the commands in the Result tab. You can go back and make any required changes to the input parameters.

Step 5 To schedule the command, click the Scheduling tab. For more details on scheduling, see Scheduling a Command.

Step 6 To run the commands, click **Execute Now**.

Any errors are displayed in the Result tab.

Step 7 To close the dialog box, click **Close**.

Configuring UNI on an Interface

Use the **Configure UNI in an Interface** command to configure UNI on an interface.

Step 1 In the inventory window, expand the Logical Inventory tree.

Step 2 Right-click the Ethernet LMI node and choose **Commands > Configure UNI in an Interface**. The Configure UNI in an Interface dialog box opens.

Step 3 By default, the General tab is selected. Enter values for the following parameters.

Input Parameter	Description
Interface Name	Name of the interface.
Uni Id	Unified network interface identifier.

Step 4 To see the commands that will be applied on the device, click **Preview**.

You can view the commands in the Result tab. You can go back and make any required changes to the input parameters.

Step 5 To schedule the command, click the Scheduling tab. For more details on scheduling, see Scheduling a Command.

Step 6 To run the commands, click **Execute Now**.

Any errors are displayed in the Result tab.

Step 7 To close the dialog box, click **Close**.

Enabling Ethernet LMI on an Interface

Use the **Enable On Interface** command to configure Ethernet LMI on the interface. If Ethernet LMI is disabled globally, you can use this command to enable it on specific interfaces.

Step 1 In the inventory window, expand the Logical Inventory tree.

Step 2 Right-click the Ethernet LMI node and choose **Commands > Enable On Interface**. The Enable On Interface dialog box opens.

Step 3 By default, the General tab is selected. Enter a value for the following parameter.

Input Parameter	Description
Interface Name	Name of the interface.

Step 4 To see the commands that will be applied on the device, click **Preview**.

You can view the commands in the Result tab. You can go back and make any required changes to the input parameters.

Step 5 To schedule the command, click the Scheduling tab. For more details on scheduling, see Scheduling a Command.

Step 6 To run the commands, click **Execute Now**.

Any errors are displayed in the Result tab.

Step 7 To close the dialog box, click **Close**.

Configuring the Service Instance VLAN ID on an Interface

Use the **Configure Service Instance Vlan Id on Interface** command to configure an Ethernet service instance on the interface.

Step 1 In the inventory window, expand the Logical Inventory tree.

Step 2 Right-click the Ethernet LMI node and choose **Commands > Configure Service Instance Vlan Id on Interface**. The Configure Service Instance Vlan Id on Interface dialog box opens.

Step 3 By default, the General tab is selected. Enter values for the following parameters.

Input Parameter	Description
Interface Name	Name of the interface.
Service Instance Id	Per-interface Ethernet service instance identifier that does not map to a VLAN. The identifier is from 1 to 8000.
Evc Name	Name of the Ethernet virtual connection.
VLAN to EVC Map	The VLAN EVC map value. Values include: • Value in the range1 to 4094 • Any • Default • Untagged

Step 4 To see the commands that will be applied on the device, click **Preview**.

You can view the commands in the Result tab. You can go back and make any required changes to the input parameters.

Step 5 To schedule the command, click the Scheduling tab. For more details on scheduling, see Scheduling a Command.

Step 6 To run the commands, click **Execute Now**.

Any errors are displayed in the Result tab.

Step 7 To close the dialog box, click **Close**.