Configuring MAC Learning

This chapter describes MAC learning, MAC address limiting, and static MAC address. This chapter also describes the configuration procedures.

Understanding MAC Learning

The Carrier Packet Transport (CPT) system is a distributed system with fabric cards, line cards, and CPT 50 panels. The MAC addresses learned on one line card needs to be learned or distributed on the other line cards. The MAC learning feature enables the distribution of the MAC addresses learned on one line card to the other line cards.

A software MAC address table is maintained on the fabric cards. This MAC address table contains the MAC addresses learned on all the line cards. This MAC address table is used to distribute the MAC addresses when the line card reboots or goes through Online Insertion and Removal (OIR).

Note By default, MAC address learning is enabled only for point–to–multipoint bridge domains and can also be disabled. See NTP-J7 Enable or Disable MAC Learning on a Bridge Domain, on page 4.

MAC Address Aging

Dynamically learned MAC addresses are deleted after the MAC address age out value. This frees up unused addresses from the MAC address table for other active subscribers. In CPT, the default value for MAC address aging is 300 seconds and cannot be changed. The expected MAC address age out timer is between 300 to 600 seconds depending on the number of MAC addresses learned.

Dynamic MAC Address Learning

Dynamic MAC address learning occurs when the bridging data path encounters an ingress frame whose source address is not present in the MAC address table for the ingress service instance. The learned MAC addresses are distributed to the other cards with Ethernet Flow Points (EFPs) in the same bridge domain.

MAC Move

A MAC move occurs when the same MAC address is re-learned on a different port. When a MAC move is detected, a transient event is generated to inform the user about the MAC move.

MAC Learning on LAG

MAC learning is enabled on the LAG interface, if the Link Aggregation Group (LAG) interface is part of the point–to–multipoint bridge domain. The MAC addresses are learned on the LAG interface instead of the physical interface.

MAC Learning Actions

The following table describes the various scenarios and the actions taken on MAC addresses for each scenario.

Table 1: MAC Learning Actions

Scenario	Action
A bridge domain is created.	The MAC learning is enabled by default in point–to–multipoint bridge domains. The MAC learning is not supported in point–to–point bridge domains.
A bridge domain is deleted.	The MAC addresses learned on the bridge domain are removed from the software MAC address table that is maintained on the fabric cards. These MAC addresses are also removed from the line card hardware.
An EFP is added and is the first EFP on a bridge domain on a card.	All the MAC addresses learned on the bridge domain are sent to this new card.
An EFP is added and is not the first EFP on a bridge domain.	Nothing needs to be done as the MAC addresses learned on the bridge domain are already present.
An EFP is deleted.	All the MAC addresses learned on that EFP are deleted.
An EFP admin state is UP.	When the EFP is the first EFP on the bridge domain on the card, all the MAC addresses learned on the bridge domain are sent to this new card. When the EFP is not the first EFP on the bridge domain on the card, nothing needs to be done as the MAC addresses learned on the bridge domain are already present.

Scenario	Action
An EFP admin state is DOWN.	All the MAC addresses learned on that EFP are deleted.
The port goes down.	All the MAC addresses learned on the port on all the bridge domains are deleted.
The active fabric card is reset.	The standby fabric card becomes active and the software MAC address table on the new active card is used.
The standby fabric card is reset.	The standby fabric card is updated with the software MAC address table during the bulk synchronization process.
The line card comes up after the line card is reset (soft reset).	The active fabric card sends the MAC addresses learned on the bridge domains that are configured on the line card.
The line card goes through Online Insertion and Removal (OIR).	The active fabric card sends the MAC addresses learned on the bridge domains that are configured on the line card.

MAC Learning Configuration Procedures

The following procedures can be performed using Cisco IOS commands to configure MAC learning and MAC address limiting:

- DLP-J19 Re–enable or Disable MAC Learning on a Bridge Domain Using Cisco IOS Commands, on page 4
- DLP-J21 Configure MAC Address Limit on a Bridge Domain Using Cisco IOS Commands, on page 7
- DLP-J23 Configure a Static MAC Address on a Service Instance Using Cisco IOS Commands, on page 10
- DLP-J25 Remove a MAC Address Using Cisco IOS Commands, on page 13
- DLP-J27 Display Information About the MAC Address Table Using Cisco IOS Commands, on page 16

The following procedures can be performed using CTC to configure MAC learning and MAC address limiting:

- DLP-J20 Re-enable or Disable MAC Learning on a Bridge Domain Using CTC, on page 6
- DLP-J22 Configure the MAC Address Limit on a Bridge Domain Using CTC, on page 8
- DLP-J24 Configure a Static MAC Address on a Service Instance Using CTC, on page 12
- DLP-J26 Remove a MAC Address Using CTC, on page 15
- DLP-J28 Display Information About the MAC Address Table Using CTC, on page 18

NTP-J7 Enable or Disable MAC Learning on a Bridge Domain

Purpose	This procedure enables or disables MAC learning on a bridge domain.
Tools/Equipment	None
Prerequisite Procedures	None
Required/As Needed	As needed
Onsite/Remote	Onsite or remote
Security Level	Provisioning or higher

Procedure

Perform any of the following procedures as needed:

- DLP-J19 Re–enable or Disable MAC Learning on a Bridge Domain Using Cisco IOS Commands, on page 4
- DLP-J20 Re-enable or Disable MAC Learning on a Bridge Domain Using CTC, on page 6

Stop. You have completed this procedure.

DLP-J19 Re–enable or Disable MAC Learning on a Bridge Domain Using Cisco IOS Commands

Purpose	This procedure re-enables or disables MAC learning on the bridge domain using Cisco IOS commands.
Tools/Equipment	None
Prerequisite Procedures	None
Required/As Needed	As needed
Onsite/Remote	Onsite or remote
Security Level	Provisioning or higher

Note MAC learning is enabled on the point–to–multipoint bridge domains by default.

Procedure

	Command or Action	**Purpose**
Step 1	**enable** **Example:** Router> enable	Enables privileged EXEC mode. • Enter your password if prompted.
Step 2	**configure terminal** **Example:** Router# configure terminal	Enters global configuration mode.
Step 3	**bridge-domain** *bridge-id* **Example:** Router(config)# bridge-domain 100	Configures components on a bridge domain and enters bridge domain configuration mode.
Step 4	**mac learning** **Example:** Router(config-bdomain)# mac learning	Re-enables MAC learning on this bridge domain.
Step 5	**no mac learning** **Example:** Router(config-bdomain)# no mac learning	Disables MAC learning on this bridge domain.
Step 6	**end** **Example:** Router(config-bdomain)# end	Exits bridge domain configuration mode and returns to privileged EXEC mode.
Step 7	Return to your originating procedure (NTP).	—

Example: Re–enable or Disable MAC Learning on a Bridge Domain

The following example shows how to re-enable MAC learning on a bridge domain using Cisco IOS commands:

```
Router> enable
Router# configure terminal
Router(config)# bridge-domain 100
Router(config-bdomain)# mac learning
Router(config-bdomain)# end
```

The following example shows how to disable MAC learning on a bridge domain using Cisco IOS commands:

```
Router> enable
Router# configure terminal
Router(config)# bridge-domain 100
Router(config-bdomain)# no mac learning
Router(config-bdomain)# end
```

DLP-J20 Re-enable or Disable MAC Learning on a Bridge Domain Using CTC

Purpose	This procedure re-enables or disables MAC learning on the bridge domain using CTC.
Tools/Equipment	None
Prerequisite Procedures	DLP-J2 Create an EVC Circuit Using CTC of EVC type Ethernet Private LAN or Ethernet Virtual Private LAN.
Required/As Needed	As needed
Onsite/Remote	Onsite or remote
Security Level	Provisioning or higher

Note MAC learning is enabled on the point–to–multipoint bridge domains by default.

Procedure

Step 1 Complete the NTP-J22 Log into CTC procedure at a node where you want to re-enable or disable MAC learning.

Step 2 From the View menu, choose **Go to Home View**.

Step 3 Click the **Layer2+** tab.

Step 4 Click **Carrier Ethernet**.

Step 5 From the list of EVC circuits, choose an EVC circuit to edit.

Step 6 Click **Edit**. The Edit Circuit dialog box appears.

Step 7 Click the **MAC Learning** tab.

Step 8 Re-enable or disable MAC learning on the Network Element. Complete one of the following steps:

a) Check the **MAC Learning** check box to re-enable MAC learning on this Network Element.

b) Uncheck the **MAC Learning** check box to disable MAC learning on this Network Element.

Step 9 Click **Apply**.

Step 10 Return to your originating procedure (NTP).

Understanding MAC Address Limiting

The MAC Address Limiting for bridge domains provides the capability to control the MAC addresses learnt on the bridge domain. You can configure an upper limit on the number of MAC addresses that can be learnt in a bridge domain. If an Ethernet frame with an unknown MAC address is received, it is flooded in the bridge domain. The MAC address limiting commands are configured under the bridge domain.

> **Note** The maximum MAC address limit on a bridge domain is 128000.

NTP-J8 Configure MAC Address Limit on a Bridge Domain

Purpose	This procedure configures MAC address limit on a bridge domain.
Tools/Equipment	None
Prerequisite Procedures	None
Required/As Needed	As needed
Onsite/Remote	Onsite or remote
Security Level	Provisioning or higher

Procedure

Perform any of the following procedures as needed:

- DLP-J21 Configure MAC Address Limit on a Bridge Domain Using Cisco IOS Commands, on page 7
- DLP-J22 Configure the MAC Address Limit on a Bridge Domain Using CTC, on page 8

Stop. You have completed this procedure.

DLP-J21 Configure MAC Address Limit on a Bridge Domain Using Cisco IOS Commands

Purpose	This procedure configures an upper limit on the number of MAC addresses that reside in a bridge domain using Cisco IOS commands.
Tools/Equipment	None
Prerequisite Procedures	None
Required/As Needed	As needed
Onsite/Remote	Onsite or remote
Security Level	Provisioning or higher

Procedure

	Command or Action	**Purpose**
Step 1	**enable** **Example:** Router> enable	Enables privileged EXEC mode. • Enter your password if prompted.
Step 2	**configure terminal** **Example:** Router# configure terminal	Enters global configuration mode.
Step 3	**bridge-domain** *bridge-id* **Example:** Router(config)# bridge-domain 100	Configures components on a bridge domain and enters bridge domain configuration mode.
Step 4	**mac limit maximum addresses** *maximum-addresses* **Example:** Router(config-bdomain)# mac limit maximum addresses 200	Sets an upper limit on the number of MAC addresses that reside in a bridge domain. **Note** Enter the **no mac limit** command to restore the default MAC address limit.
Step 5	**end** **Example:** Router(config-bdomain)# end	Exits bridge domain configuration mode and returns to privileged EXEC mode.
Step 6	Return to your originating procedure (NTP).	—

Example: Configure MAC Address Limit on a Bridge Domain

The following example shows how to configure MAC address limiting on a bridge domain using Cisco IOS commands:

```
Router> enable
Router# configure terminal
Router(config)# bridge-domain 100
Router(config-bdomain)# mac limit maximum addresses 1000
Router(config-bdomain)# end
```

DLP-J22 Configure the MAC Address Limit on a Bridge Domain Using CTC

Purpose	This procedure configures the MAC address limit on a bridge domain using CTC.
Tools/Equipment	None

Prerequisite Procedures	DLP-J2 Create an EVC Circuit Using CTC of EVC type Ethernet Private LAN or Ethernet Virtual Private LAN.
Required/As Needed	As needed
Onsite/Remote	Onsite or remote
Security Level	Provisioning or higher

Procedure

Step 1 Complete the NTP-J22 Log into CTC procedure at a node where you want to configure the MAC address limit.

Step 2 From the View menu, choose **Go to Home View**.

Step 3 Click the **Layer2+** tab.

Step 4 Click **Carrier Ethernet**.

Step 5 From the list of EVC circuits, select an EVC circuit to edit.

Step 6 Click **Edit**. The Edit Circuit dialog box appears.

Step 7 Click the **MAC Learning** tab.

Step 8 Enter the upper limit on the number of MAC addresses that reside in a bridge domain in the Limit field. You need to change the MAC address limit value on each node where the bridge domain is configured.

Step 9 Click **Apply**.

Step 10 Return to your originating procedure (NTP).

Understanding the Static MAC Address

You can configure static MAC addresses on a service instance. Static MAC address configuration on service instances eliminates the need for MAC address learning, which is required for traffic forwarding. Without MAC address learning, MAC address table resources can be conserved and network resources can be optimized.

Note Static MAC address configuration does not apply to the MVR bridge domain.

Benefits

Static MAC address support on service instances provides the following benefits:

• Facilitates optimization of network resources.

• Conserves MAC table resources when used for upstream traffic.

Restrictions

- Multicast static MAC addresses are not allowed in MAC address configurations. Unicast MAC addresses can be statically configured.

NTP-J9 Configure a Static MAC Address on a Service Instance

Purpose	This procedure configures a static MAC address on a service instance.
Tools/Equipment	None
Prerequisite Procedures	None
Required/As Needed	As needed
Onsite/Remote	Onsite or remote
Security Level	Provisioning or higher

Procedure

Perform any of the following procedures as needed:

- DLP-J23 Configure a Static MAC Address on a Service Instance Using Cisco IOS Commands, on page 10
- DLP-J24 Configure a Static MAC Address on a Service Instance Using CTC, on page 12

Stop. You have completed this procedure.

DLP-J23 Configure a Static MAC Address on a Service Instance Using Cisco IOS Commands

Purpose	This procedure configures a static MAC address on a service instance using Cisco IOS commands.
Tools/Equipment	None
Prerequisite Procedures	DLP-J1 Configure an Ethernet Service Instance Using Cisco IOS Commands
Required/As Needed	As needed
Onsite/Remote	Onsite or remote
Security Level	Provisioning or higher

Note   Enter the **no mac static address mac-addr** command to remove the statically added unicast MAC address.

Procedure

	Command or Action	Purpose
Step 1	**enable** **Example:** Router> enable	Enables privileged EXEC mode. • Enter your password if prompted.
Step 2	**configure terminal** **Example:** Router# configure terminal	Enters global configuration mode.
Step 3	**interface** *type number* **Example:** Router(config)# interface TenGigabitEthernet 4/1	Configures a Ten Gigabit Ethernet interface and enters interface configuration mode.
Step 4	**service instance** *id* **ethernet** *[evc-id]* **Example:** Router(config-if)# service instance 1 ethernet	Configures an Ethernet service instance on an interface and enters service instance configuration mode.
Step 5	**mac static address** *mac-address* **Example:** Router(config-if-srv)# mac static address 0000.bbbb.cccc	Configures a static MAC address on a service instance.
Step 6	**exit** **Example:** Router(config-if-srv)# exit	Returns to interface configuration mode.
Step 7	**end** **Example:** Router(config-if)# end	Returns to privileged EXEC mode.
Step 8	Return to your originating procedure (NTP).	—

Example: Configure a Static MAC Address on a Service Instance

The following example shows how to configure a static MAC address on a service instance using Cisco IOS commands:

```
Router> enable
Router# configure terminal
Router(config)# interface TenGigabitEthernet 4/1
Router(config-if)# service instance 1 ethernet
Router(config-if-srv)# encapsulation dot1q 100
Router(config-if-srv)# bridge-domain 100
Router(config-if-srv)# mac static address 0000.bbbb.cccc
Router(config-if-srv)# exit
Router(config-if)# end
```

DLP-J24 Configure a Static MAC Address on a Service Instance Using CTC

Purpose	This procedure configures a static MAC address on a service instance using CTC.
Tools/Equipment	None
Prerequisite Procedures	DLP-J2 Create an EVC Circuit Using CTC of EVC type Ethernet Private LAN or Ethernet Virtual Private LAN.
Required/As Needed	As needed
Onsite/Remote	Onsite or remote
Security Level	Provisioning or higher

Procedure

Step 1 Complete the NTP-J22 Log into CTC procedure at a node where you want to configure a static MAC address.

Step 2 From the View menu, choose **Go to Home View**.

Step 3 Click the **Layer2+** tab.

Step 4 Click **Carrier Ethernet**.

Step 5 From the list of EVC circuits, select an EVC circuit to edit.

Step 6 Click **Edit**. The Edit Circuit dialog box appears.

Step 7 Click the **MAC Learning** tab.

Step 8 Click **EFP Static MAC Address Configuration** to enter static MAC addresses for each EFP. The EFP Static MAC Address Configuration dialog box appears.

Step 9 From the EFP drop-down list, choose an EFP.

Step 10 Enter one or more static MAC addresses for this EFP in the MAC Address field and click **Add**. The added MAC addresses appear in the Entered MAC Addresses area.

Step 11 Click **Apply** and close the EFP Static MAC Address Configuration dialog box.

Step 12 Return to your originating procedure (NTP).

NTP-J10 Remove a MAC address

Purpose	This procedure removes a MAC address from the MAC address table.
Tools/Equipment	None
Prerequisite Procedures	None
Required/As Needed	As needed
Onsite/Remote	Onsite or remote
Security Level	Provisioning or higher

Procedure

Perform any of the following procedures as needed:

Stop. You have completed this procedure.

DLP-J25 Remove a MAC Address Using Cisco IOS Commands

Purpose	This procedure removes a dynamic MAC address from the MAC address table using Cisco IOS commands.
Tools/Equipment	None
Prerequisite Procedures	None
Required/As Needed	As needed
Onsite/Remote	Onsite or remote
Security Level	Provisioning or higher

Note   This procedure removes only dynamically added MAC addresses. To remove the statically added MAC addresses, enter the **no mac static address mac-addr** command.

Procedure

	Command or Action	Purpose
Step 1	**enable** **Example:** Router> enable	Enables privileged EXEC mode. • Enter your password if prompted.
Step 2	**configure terminal** **Example:** Router# configure terminal	Enters global configuration mode.
Step 3	**clear mac-address-table** [**address** *mac-address*] [**interface** *type number*] [**bridge-domain** *bridgedomain-id*] **Example:** Router# clear mac-address-table address 0000.bbbb.cccc interface TenGigabitEthernet 4/1 bridge-domain 100	Removes the dynamic MAC address from the MAC address table on a bridge domain. The *bridgedomain-id* is the bridge domain number.
Step 4	**exit** **Example:** Router# exit	Exits global configuration mode.
Step 5	Return to your originating procedure (NTP).	—

Example: Remove a MAC Address

The following example shows how to remove a MAC address from the MAC address table on a bridge domain using Cisco IOS commands:

```
Router> enable
Router# configure terminal
Router# clear mac-address-table address
0000.bbbb.cccc interface TenGigabitEthernet 4/1 bridge-domain 100
Router# exit
```

The following example shows how to remove a MAC address from the MAC address table on all the bridge domains using Cisco IOS commands:

```
Router> enable
Router# configure terminal
Router# clear mac-address-table address 0000.bbbb.cccc
Router# exit
```

DLP-J26 Remove a MAC Address Using CTC

Purpose	This procedure removes a specific MAC address from the MAC address table using CTC.
Tools/Equipment	None
Prerequisite Procedures	DLP-J2 Create an EVC Circuit Using CTC of EVC type Ethernet Private LAN or Ethernet Virtual Private LAN.
Required/As Needed	As needed
Onsite/Remote	Onsite or remote
Security Level	Provisioning or higher

Procedure

Step 1 Complete the NTP-J22 Log into CTC procedure at a node where you want to remove specific MAC addresses from the MAC address table.

Step 2 From the View menu, choose **Go to Home View**.

Step 3 Click the **Layer2+** tab.

Step 4 Click **Carrier Ethernet**.

Step 5 From the list of EVC circuits, select an EVC circuit to edit.

Step 6 Click **Edit**. The Edit Circuit dialog box appears.

Step 7 Click the **MAC Learning** tab.

Step 8 Click **Clear MAC Addresses**. The Clear MAC Addresses dialog box appears.

Step 9 To remove a specific MAC address from the MAC address table, select that MAC address in the MAC Addresses to clear area and click **Clear**.

Step 10 Close the Clear MAC Addresses dialog box.

Step 11 Return to your originating procedure (NTP).

NTP-J11 Display Information About the MAC Address Table

Purpose	This procedure displays information about the MAC address table.
Tools/Equipment	None
Prerequisite Procedures	None
Required/As Needed	As needed

Onsite/Remote	Onsite or remote
Security Level	Provisioning or higher

Procedure

Perform any of the following procedures as needed:

Stop. You have completed this procedure.

DLP-J27 Display Information About the MAC Address Table Using Cisco IOS Commands

Purpose	This procedure displays information about the MAC address table using Cisco IOS commands.
Tools/Equipment	None
Prerequisite Procedures	None
Required/As Needed	As needed
Onsite/Remote	Onsite or remote
Security Level	Provisioning or higher

Procedure

	Command or Action	Purpose
Step 1	**enable** **Example:** Router> enable	Enables privileged EXEC mode. • Enter your password if prompted.
Step 2	**show mac-address-table address** *mac-addr* **Example:** Router# show mac-address-table address 0050.3e8d.6400	Displays information about the MAC address table for a specific MAC address. The *mac-addr* is a 48–bit MAC address and the valid format is H.H.H.

	Command or Action	**Purpose**
Step 3	**show mac-address-table bridge-domain** *bridgedomain-id* **Example:** Router# show mac-address-table bridge-domain 100	Displays information about the MAC address table for a specific bridge domain. The *bridgedomain-id* is the bridge domain number.
Step 4	**show mac-address-table interface** *type number* **Example:** Router# show mac-address-table interface TenGigabitEthernet 4/1	Displays information about the MAC address table for a specific interface.
Step 5	Return to your originating procedure (NTP).	—

Example: Display Information About the MAC Address Table

The following example shows how to display the MAC address table information:

```
Router# show mac-address-table


BD Index    MAC Address     Type     Ports
---------------------------------------------
2           0000.1000.001e   dynamic   Te4/2
2           0000.1000.001d   dynamic   Te4/2
2           0000.1000.001c   dynamic   Te4/2
200         0050.3e8d.6400   static    Te4/1
100         0050.3e8d.6400   static    Te4/1
5           0050.3e8d.6400   static    Te4/1
4           0050.3e8d.6400   static    Te4/1
1           0050.3e8d.6400   static    Te4/1
```

The following example shows how to display the MAC address table information for a specific MAC address:

```
Router# show mac-address-table address 0000.1000.0001


BD Index    MAC Address     Type     Ports
---------------------------------------------
 2          0000.1000.0001   dynamic   Te4/2
```

The following example shows how to display the MAC address table information for a specific bridge domain:

```
Router# show mac-address-table bridge-domain 2


BD Index    MAC Address     Type     Ports
---------------------------------------------
2           0000.1000.001e   dynamic   Te4/2
2           0000.1000.001d   dynamic   Te4/2
2           0000.1000.001c   dynamic   Te4/2
```

```
2          0000.1000.001b   dynamic   Te4/2
2          0000.1000.001a   dynamic   Te4/2
2          0000.1000.0019   dynamic   Te4/2
```

The following example shows how to display the MAC address table information for a specific interface:

```
Router# show mac-address-table interface tenGigabitEthernet4/2


BD Index    MAC Address     Type     Ports
-------------------------------------------
2          0000.1000.001e  dynamic    Te4/2
2          0000.1000.001d  dynamic    Te4/2
2          0000.1000.001c  dynamic    Te4/2
2          0000.1000.001b  dynamic    Te4/2
2          0000.1000.001a  dynamic    Te4/2
2          0000.1000.0019  dynamic    Te4/2
```

The following example shows how to display the MAC address table information for a LAG interface (Po9):

```
Router# show mac-address-table


BD index    MAC Address     Type     Ports
-------------------------------------------
2          0000.0300.0900  dynamic  Te4/1
2          0000.0300.1000  dynamic  Po9
```

DLP-J28 Display Information About the MAC Address Table Using CTC

Purpose	This procedure displays information about the MAC address table using CTC.
Tools/Equipment	None
Prerequisite Procedures	None
Required/As Needed	As needed
Onsite/Remote	Onsite or remote
Security Level	Provisioning or higher

Procedure

Step 1 Complete the NTP-J22 Log into CTC procedure at a node where you want to display information about the MAC address table.

Step 2 From the View menu, choose **Go to Home View**.

Step 3 Right-click the fabric or line card and choose **Open Packet Transport System View**. The Packet Transport System View dialog box appears.

Step 4 Click the **Maintenance** tab.

Step 5 From the left pane, click **MAC Learning**.

Step 6 To display information about the MAC address table for a specific MAC address:

a) Click the **MAC Addresses** subtab.

b) Enter the MAC address in the MAC address field.

c) Click **Show** to display information about the MAC address table for this MAC address.

Step 7 To display information about the MAC address table for a specific interface:

a) Click the **Interface** subtab.

b) From the Interface type drop-down list, choose **ONE_GE**, **TEN_GE**, or **PORT_CHANNEL**.

c) Enter the interface number in the Interface Number field.

d) Click **Show** to display information about the MAC address table for this interface.

Step 8 To display information about the MAC address table for a specific EFP:

a) From the View menu, choose **Go to Home View**

b) Click the **Layer2+** tab.

c) Click **Carrier Ethernet**.

d) From the list of EVC circuits, select an EVC circuit to edit.

e) Click **Edit**. The Edit Circuit dialog box appears.

f) Click the **MAC Learning** tab.

g) Click **Display MAC Address(es)** to display the configured static MAC addresses for each EFP. The Configured EFP Static MAC Addresses dialog box appears.

h) From the EFP drop-down list, choose an EFP.

i) The MAC addresses configured on the EFP appear in the Configured MAC Addresses area.

j) Close the Configured EFP Static MAC Addresses dialog box.

Step 9 Return to your originating procedure (NTP).