



CHAPTER 8

Provisioning Multi-VRFCE PE-CE Links

This chapter describes how to configure MPLS VPN Multi-VRFCE PE-CE links in the IP Solution Center (ISC) provisioning process. It contains the following major sections:

- [MPLS VPN MVRFCE PE-CE Link Overview, page 8-1](#)
- [Creating MPLS VPN MVRFCE PE-CE Service Policies, page 8-5](#)
- [Creating MPLS VPN MVRFCE PE-CE Service Requests, page 8-9](#)
- [Creating an Unmanaged MVRFCE, page 8-20](#)

MPLS VPN MVRFCE PE-CE Link Overview

This section contains the following sections:

- [Network Topology, page 8-2](#)
- [Prerequisite Tasks, page 8-3](#)

To provision an MPLS VPN service in ISC, you must first create an MPLS VPN Service Policy. In ISC, a Service Policy is a set of default configurations for creating and deploying a service request.

ISC supports two MPLS VPN Service Policy Types: Regular PE-CE and MVRFCE PE-CE. The following scenarios focus on the MVRFCE PE-CE Policy Type.

An MVRFCE PE-CE Policy Type is a PE to CE link with three devices:

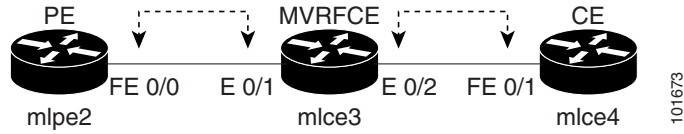
- PE
- Multi-VRF CE
- CE

This Policy Type has two options:

- CE Present *enabled* (One PE with one MVRFCE and one CE; three devices)
- CE Present *disabled* (One PE with one MVRFCE; two devices)

[Figure 8-1](#) shows an example of an MVRFCE PE-CE link with three devices.

Figure 8-1 MVRFCE PE-CE Link



In an MVRFCE PE-CE link with CE Present enabled, interfaces FE 0/0, E 0/1, E 0/2 and FE 0/1 are configured as an MPLS VPN link in the service request process.

Figure 8-2 shows an example of a PE to MVRFCE link with no CE.

Figure 8-2 MVRFCE PE-CE Link with No CE

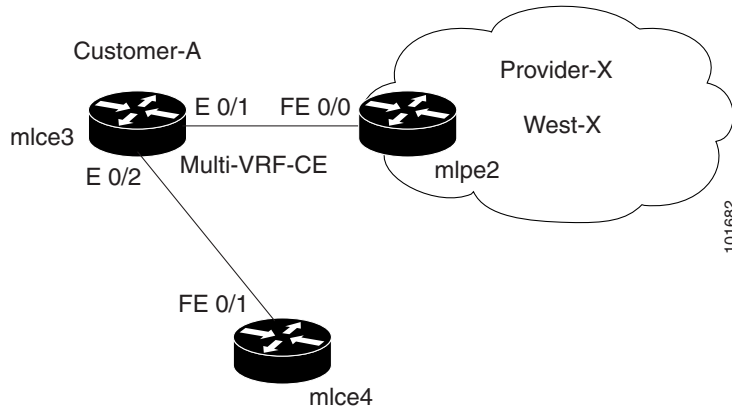


In an MVRFCE PE-CE link with CE Present disabled, interfaces FE 0/0, E 0/1, and E 0/2 are configured as an MPLS VPN link in the service request process.

Network Topology

Figure 8-3 shows an overview of the network topology in which the MPLS VPN MVRFCE PE-CE links are created.

Figure 8-3 Network Topology for MPLS VPN MVRFCE PE-CE Scenarios



The network topology in Figure 8-3 illustrates the lab environment of a service provider (Provider-X) and one customer (Cust-A). There is one Region (West-X) and one PE (mlpe2.cisco.com). Each customer device (one MVRFCE and one CE) represents a Site (mlce3-Site and mlce4-Site).

Prerequisite Tasks

Before you can create a Service Policy in ISC, you must complete the following Inventory Management tasks:

-
- Step 1** Set up a Customer with a Site (see [Creating Customers, Sites, and CPEs](#), page 2-7).
 - Step 2** Setup a Provider with a Region (see [Creating a Provider](#), page 2-10).
 - Step 3** Import, create, or discover Devices (see [Creating Devices](#), page 2-2).
 - Step 4** Create CPE and PE (see [Creating CPEs](#), page 2-8).
 - Step 5** Collect Configurations (see [Collecting Configurations](#), page 2-4).
 - Step 6** Create Resource Pools (see [Creating Resource Pools](#), page 2-15).
 - Step 7** Create CE routing communities (CERC) (see [Creating CE Routing Communities](#), page 2-32).
 - Step 8** Define a MPLS VPN (see [Creating an MPLS VPN](#), page 2-22).
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Note

Independent VRF association is not supported for MVRFCE-based policies and service requests.

Defining VPN for MVRFCE PE-CE Links

During service deployment, ISC generates the Cisco IOS commands to configure the logical VPN relationships.

At the beginning of the provisioning process, before creating a Service Policy, a VPN must be defined within ISC. The first element in a VPN definition is the name of the VPN.

To create a VPN Name, perform the following steps.

-
- Step 1** Choose **Service Inventory > Inventory and Connection Manager > VPNs**.
The VPN window appears.
 - Step 2** Click **Create** to create a VPN.
The Create VPN window appears.
 - Step 3** Edit the following attributes:
 - **Name:** Enter the VPN name.
It is recommended not to use special characters (' ` " < > () [] { } / \ & ^ ! ? ~ * % = , . + |) in the VPN name, as this may cause misconfiguration of the VRF name for certain devices, if the VPN name is used to autogenerate a VRF name.
 - **Customer:** Click **Select**.
The Select Customer window appears.
 - Step 4** Choose a Customer and click **Select**.
 - Step 5** Click **Next**.

The VPNs window reappears showing that the VPN Name is associated to the Customer in this new VPN definition.

Creating MPLS VPN MVRFCE PE-CE Service Policies

This section contains the following sections:

- [Creating MVRFCE PE-CE Service Policies, page 8-5](#)
- [Creating PE-NoCE Service Policies, page 8-7](#)

Creating MVRFCE PE-CE Service Policies

To create an MVRFCE PE-CE service policy, perform the following steps.



Note

Make sure the Editable check boxes are checked where available, so you can edit these attributes in the service request process.

Step 1 Choose **Service Design > Policies**.

The Policies window appears.

Step 2 From the **Create** drop-down list, choose **MPLS Policy**.

The MPLS Policy Editor - Policy Type window appears, as shown in [Figure 8-4](#).

Figure 8-4 MPLS Policy Editor - Policy Type

Attribute	Value
Policy Name *	mpls-mvrfce-pe-ce
Policy Owner:	<input checked="" type="radio"/> Customer <input type="radio"/> Provider <input type="radio"/> Global Policy
Customer *	Select
Policy Type:	<input type="radio"/> Regular: PE-CE <input checked="" type="radio"/> MVRFCE: PE-CE
CE Present:	<input checked="" type="checkbox"/>

Note: * - Required Field

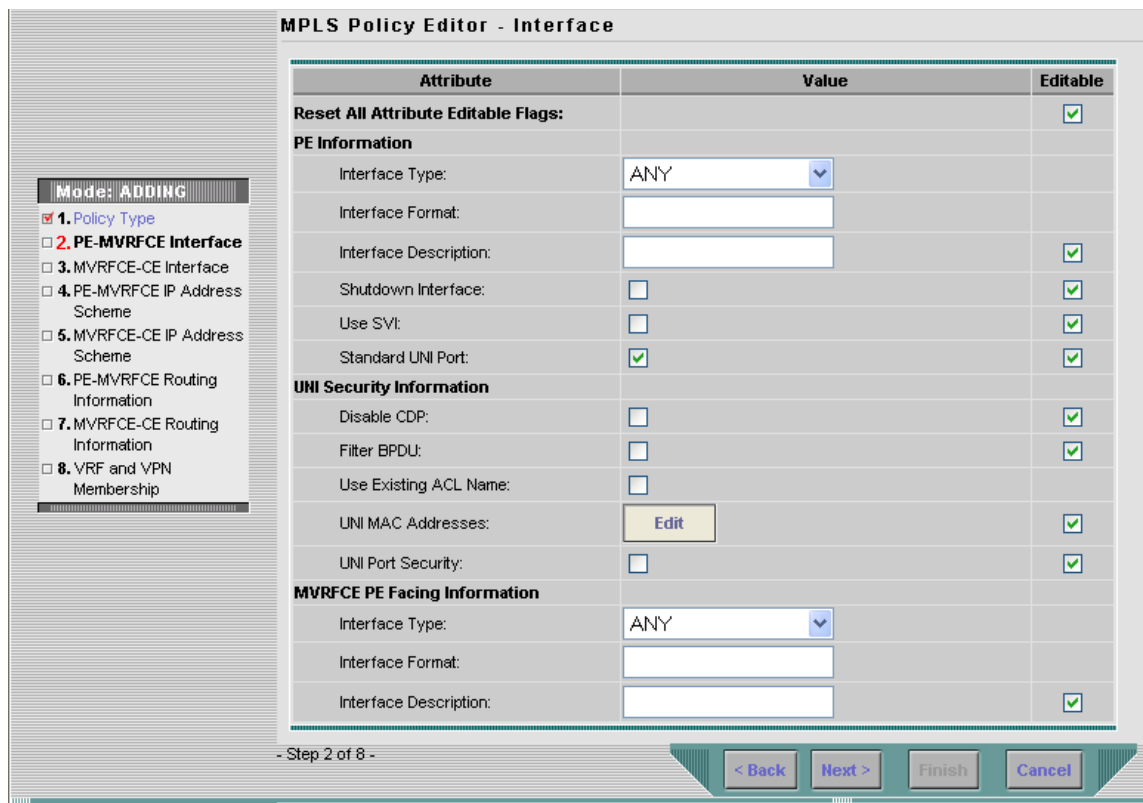
Step 3 Edit the following attributes:

- **Policy Name:** Enter the policy name.
- **Policy Owner:** Choose the Policy Owner.
- **Customer:**
 - Click **Select** to specify a customer.
 - The Customer for MPLS Policy window appears.
 - Choose a customer and click **Select**.
- **Policy Type:** Choose the Policy Type. (**MVRFCE: PE-CE**)
- **CE Present:** Check to set CE as present.

Step 4 Click **Next**.

The MPLS Policy Editor - PE Interface window appears, as shown in [Figure 8-5](#).

Figure 8-5 The MPLS Policy Editor - PE Interface



Step 5 Click **Next**.

The MPLS Policy Editor - Interface window appears.

Step 6 Edit all applicable attributes.

Step 7 Click **Next**.

The MPLS Policy Editor - IP Address Scheme window appears for **PE-MVRFCE**.

Step 8 Edit all applicable attributes.

Step 9 Click **Next**.

Step 10 Another set of MPLS Policy Editor - IP Address Scheme windows appear for **MVRFCE-CE**.

Step 11 Edit all applicable attributes, as above.

Step 12 Click **Next**.

The MPLS Policy Editor - Routing Information window appears for **PE-MVRFCE**.

Step 13 Click **Next** to accept the defaults.

The MPLS Policy Editor - Routing Information window appears for **MVRFCE-CE**.

Step 14 Click **Next** to accept the defaults.

The MPLS Policy Editor - VRF and VPN Membership window appears.

- Step 15** To enable template association for the policy, click the **Next** button in MPLS Policy Editor - VRF and VPN Membership window.

The Template Association window appears. In this window, you can enable template support and, optionally, associate templates and data files with the policy. For instructions about associating templates with policies and how to use the features in this window, see [Appendix B, “Working with Templates and Data Files.”](#) For additional information about using templates in ISC, also see the [Cisco IP Solution Center Infrastructure Reference, 5.1](#). When you have completed setting up templates and data files for the policy per the instructions in the appendix, click **Finish** in the Template Association window to close it.

The Policies window appears.

- Step 16** If you did not enable templates, click **Finish** in the MPLS Policy Editor – VRF and VPN window.

The Policies window reappears showing that the MPLS VPN MVRFCE PE-CE Service Policy is complete.

Creating PE-NoCE Service Policies

To create a PE-NoCE service policy, perform the following steps.

- Step 1** Choose **Service Design > Policies**.

The Policies window appears.

- Step 2** From the **Create** drop-down list, choose **MPLS Policy**.

The MPLS Policy Editor - Policy Type window appears, as shown in [Figure 8-6](#).

Figure 8-6 MPLS Policy Editor - Policy Type

Attribute	Value
Policy Name *	mpls-mvrfce-pe-noce
Policy Owner:	<input checked="" type="radio"/> Customer <input type="radio"/> Provider <input type="radio"/> Global Policy
Customer *	CUST-A <input type="button" value="Select"/>
Policy Type:	<input type="radio"/> Regular: PE-CE <input checked="" type="radio"/> MVRFCE: PE-CE
CE Present:	<input type="checkbox"/>

Note: * - Required Field

- Step 3** Edit the following attributes:

- **Policy Name:** Enter the policy name.
- **Policy Owner:** Choose the Policy Owner.
- **Customer:**

- Click **Select** to specify a customer.
The Customer for MPLS Policy window appears.
- Choose a customer and click **Select**.

- **Policy Type:** Choose the Policy Type. (**Regular PE-CE**)
- **CE Present:** Do *not* check to set CE as **not** present (**NoCE**).

Step 4 Click **Next**.

The MPLS Policy Editor - Interface window appears.

Step 5 Click **Next** to accept the defaults.

The MPLS Policy Editor - Interface window appears for **MVRFCE-CE Facing Information**.

Step 6 Click **Next** to accept the defaults.

The MPLS Policy Editor - IP Address Scheme window appears for **PE-MVRFCE-CE Interface Address/Mask**.

- a. Edit the attributes as indicated:
- b. **IP Numbering Scheme:** Choose **IP Numbered** Scheme.
- c. **Automatically Assign IP Address:** To have ISC automatically assign IP Addresses, check the check box.
- d. **IP Address Pool:** Choose the IP Address Pool.

Step 7 Click **Next**.

The MPLS Policy Editor - IP Address Scheme window appears for **MVRFCE-CE Interface Address/Mask**.

- a. Edit the attributes as indicated:
- b. **IP Numbering Scheme:** Choose **IP Numbered** Scheme.
- c. **Automatically Assign IP Address:** To have ISC automatically assign IP Addresses, check the check box.
- d. **IP Address Pool:** Choose the IP Address Pool.

Step 8 Click **Next**.

The MPLS Policy Editor - Routing Information window appears for **PE-MVRFCE Routing Information**.

Step 9 Click **Next** to accept the defaults.

The MPLS Policy Editor - Routing Information window appears for **MVRFCE-CE Routing Information**.

Step 10 Click **Next** to accept the defaults.

The MPLS Policy Editor - VRF and VPN Membership window appears.

Step 11 Click **Add** to join a VPN. The VPN dialog box appears.

Step 12 Click **Join as Hub**, then click **Done**.

The MPLS Policy Editor - VRF and VPN Membership window appears.

Step 13 To enable template association for the policy, click the **Next** button in MPLS Policy Editor - VRF and VPN Membership window.

The Template Association window appears. In this window, you can enable template support and, optionally, associate templates and data files with the policy. For instructions about associating templates with policies and how to use the features in this window, see [Appendix B, “Working with Templates and Data Files.”](#) For additional information about using templates in ISC, also see the *Cisco IP Solution Center Infrastructure Reference, 5.1*. When you have completed setting up templates and data files for the policy per the instructions in the appendix, click **Finish** in the Template Association window to close it.

The Policies window appears.

- Step 14** If you did not enable templates, click **Finish** in the MPLS Policy Editor – VRF and VPN window.

The Policies window reappears showing that the MPLS VPN MVRFCE PE-NoCE Service Policy is complete.

Creating MPLS VPN MVRFCE PE-CE Service Requests

This section contains the following sections:

- [Creating MVRFCE PE-CE Service Requests, page 8-9](#)
- [Creating MVRFCE PE-NoCE Service Requests, page 8-15](#)

Creating MVRFCE PE-CE Service Requests

To create an MVRFCE PE-CE service request, perform the following steps.

- Step 1** Choose **Service Inventory > Inventory and Connection Manager > Service Requests**.

The Service Requests window appears.

- Step 2** From the **Create** drop-down list, choose **MPLS Policy**.

The Select MPLS Policy window appears.

- Step 3** Choose the MPLS Policy (**mpls-mvrfce-pe-ce**).

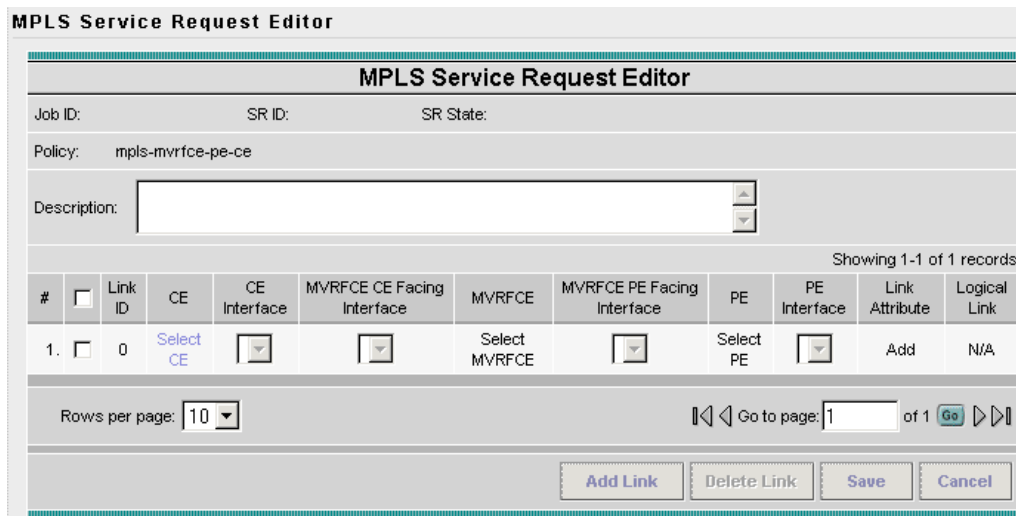
- Step 4** Click **OK**.

The MPLS Service Request Editor window appears.

- Step 5** Click **Add Link**.

The MPLS Service Request Editor window appears, as shown in [Figure 8-7](#).

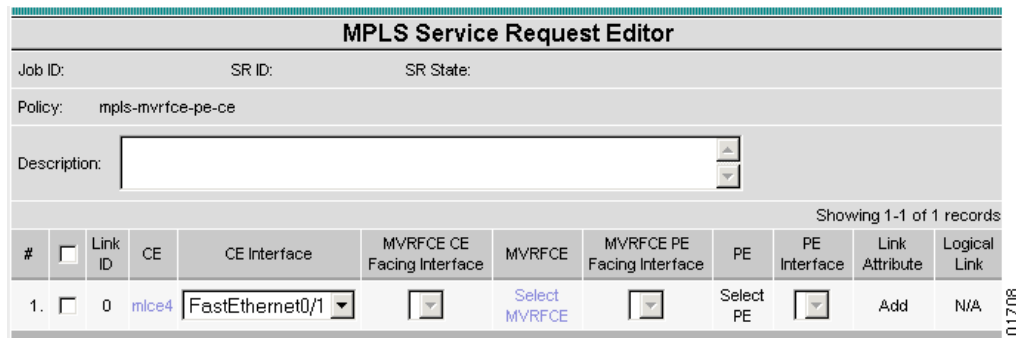
Figure 8-7 MPLS Service Request Editor - Select CE



Step 6 Click **Select CE**.
The CPE for MPLS VPN Link window appears.

Step 7 Choose the CPE Device and click **Select**.
The MPLS Service Request Editor window appears, as shown in [Figure 8-8](#).

Figure 8-8 MPLS Service Request Editor - Select MVRFCE



Step 8 Choose the CE Interface from the drop-down list.
Step 9 Click **Select MVRFCE**.
The MVRFCE for MPLS VPN Link window appears, as shown in [Figure 8-9](#).

Figure 8-9 PE for MPLS VPN Link

CPE for **MPLS VPN Link**

Show CPEs with matching

Showing 1-1 of 1 records

#	Select	Device Name	Customer Name	Site Name	Management Type
1.	<input type="checkbox"/>	mlce3.cisco.com	CUST-A	CUST-A-Site-mlce3	MULTI_VRF

Rows per page: Go to page: of 1

Step 10 Choose the MVRFCE and click **Select**.

The MPLS Service Request Editor window appears, as shown in [Figure 8-10](#).

Figure 8-10 MPLS Service Request Editor - Select MVRFCE CE Facing Interface

MPLS Service Request Editor

Job ID: SR ID: SR State:

Policy: mpls-mvrfce-pe-ce

Description:

Showing 1-1 of 1 records

#	<input type="checkbox"/>	Link ID	CE	CE Interface	MVRFCE CE Facing Interface	MVRFCE	MVRFCE PE Facing Interface	PE	PE Interface	Link Attribute	Logical Link
1.	<input type="checkbox"/>	0	mlce4	FastEthernet0/1	Ethernet0/2	mlce3	Select One	Select PE		Add	N/A

Step 11 Choose the **MVRFCE CE Facing Interface** from the drop-down list.

Step 12 Choose the **MVRFCE PE Facing Interface** from the drop-down list.

The MPLS Service Request Editor window appears, as shown in [Figure 8-11](#).

Figure 8-11 PE for MPLS VPN Link

MPLS Service Request Editor

Job ID: SR ID: SR State:

Policy: mpls-mvrfce-pe-ce

Description:

Showing 1-1 of 1 records

#	<input type="checkbox"/>	Link ID	CE	CE Interface	MVRFCE CE Facing Interface	MVRFCE	MVRFCE PE Facing Interface	PE	PE Interface	Link Attribute	Logical Link
1.	<input type="checkbox"/>	0	mlce4	FastEthernet0/1	Ethernet0/2	mlce3	Ethernet0/1	mlpe2	FastEthernet0/0	Add	Details...

Step 13 Click **Add** in the Link Attribute cell.

The MPLS Link Attribute Editor - Interface window appears, as shown in [Figure 8-12](#).

Figure 8-12 MPLS Link Attribute Editor - Interface

Attribute	Value
PE Information	
PE	mlpe2
Interface Name:	FastEthernet0/0. []
Interface Description:	[]
Shutdown Interface:	<input type="checkbox"/>
Encapsulation:	DOT1Q [v]
VLAN ID *:	510 (1-4095)
MVRFCE PE Facing Information	
MVRFCE	mlce3
Interface Name:	Ethernet0/1. []
Interface Description:	[]
Encapsulation:	DOT1Q [v]

Note: * - Required Field

- Step 1 of 7 -

< Back Next > Finish Cancel

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PE Information

Step 14 Encapsulation: Choose the PE Encapsulation from the drop-down list. (**DOT1Q**)

Step 15 VLAN ID: Enter the PE VLAN ID.

MVRFCE PE Facing Information

Step 16 Encapsulation: Choose the PE Encapsulation from the drop-down list. (**DOT1Q**)

Step 17 Click Next.

The MPLS Link Attribute Editor - Interface window appears, as shown in [Figure 8-13](#).

Figure 8-13 MPLS Link Attribute Editor - Interface

MPLS Link Attribute Editor - Interface

Attribute	Value
MVRFCE CE Facing Information	
MVRFCE	mlce3
Interface Name:	Ethernet0/2. <input type="text"/>
Interface Description:	<input type="text"/>
Encapsulation:	DOT1Q <input type="text"/>
VLAN ID *:	530 (1-4095)
CE Information	
CE	mlce4
Interface Name:	FastEthernet0/1. <input type="text"/>
Interface Description:	<input type="text"/>
Encapsulation:	DOT1Q <input type="text"/>

Note: * - Required Field

- Step 2 of 7 -

< Back Next > Finish Cancel

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MVRFCE CE Information

Step 18 Encapsulation: Choose the PE Encapsulation from the drop-down list. **(DOT1Q)**

Step 19 VLAN ID: Enter the PE VLAN ID.

MVRFCE PE-Facing Information

Step 20 Encapsulation: Choose the PE Encapsulation from the drop-down list. **(DOT1Q)**

Step 21 Click **Next**.

The MPLS Link Attribute Editor - IP Address Scheme window appears for **PE-MVRF-CE interface address/mask**.

Step 22 Accept the defaults and click **Next**.

The MPLS Link Attribute Editor - IP Address Scheme window appears for **MVRFCE-CE interface address/mask**.

Step 23 Accept the defaults and click **Next**.

The MPLS Link Attribute Editor - Routing Information window reappears for **PE-MVRF-CE routing information**.

Step 24 Accept the defaults and click **Next**.

The MPLS Link Attribute Editor - Routing Information window reappears for **MVRFCE-CE routing information**.

Step 25 Accept the defaults and click **Next**.

The MPLS Link Attribute Editor - VRF and VPN window appears.

Step 26 Click **Add** to join a VPN.

The Select CERCs window appears.

Step 27 Choose a Customer from the drop-down list.

Step 28 Choose a VPN from the drop-down list.

Step 29 Check to choose a VPN from the list.

Step 30 Click **Join As Hub** or **Join As Spoke**.

Step 31 Click **Done**.

The MPLS Link Attribute Editor - VRF and VPN window reappears.

Step 32 Click the **Next** button to associate templates or data files to the service request.



Note

This step assumes the policy on which the service request is based has template association enabled. If not, there will be no **Next** button visible in the GUI. In that case, click **Finish** and return to the MPLS Service Request Editor window and proceed with Step 34, below.

The MPLS Link Attribute Editor - Template Association window appears. In this window, you can associate templates and data files with a device by clicking the **Add** button in Template/Data File column for the device. When you click the **Add** button, the Add/Remove Templates window appears. For instructions about associating templates with service requests and how to use the features in this window, see [Appendix B, “Working with Templates and Data Files.”](#)

Step 33 When you have completed setting up templates and data files for any device(s), click **Finish** in the Template Association window to close it and return to the MPLS Service Request Editor window.

The MPLS Service Request Editor window reappears, as shown in [Figure 8-14](#).

Figure 8-14 MPLS Service Request Editor

#	Link ID	CE	CE Interface	MVRFCE CE Facing Interface	MVRFCE	MVRFCE PE Facing Interface	PE	PE Interface	Link Attribute	Logical Link
1.	6	mlce4	FastEthernet0/1	Ethernet0/2	mlce3	Ethernet0/1	mlpe2	FastEthernet0/0	Edited	Details...

Step 34 Enter the service request description (**mpls-mvrfce-pe-ce**) and click **Save**.

The MPLS Service Requests window reappears showing that the MPLS VPN MVRFCE PE-CE service request is in the Requested state and ready to deploy.

Creating MVRFCE PE-NoCE Service Requests

To create an MVRFCE PE-NoCE service request, perform the following steps.

- Step 1** Choose **Service Inventory > Inventory and Connection Manager > Service Requests**.
The Service Requests window appears.
- Step 2** From the **Create** drop-down list, choose **MPLS VPN**.
The Select MPLS Policy window appears, as shown in [Figure 8-15](#).

Figure 8-15 Choose MPLS Policy

The screenshot shows a dialog box titled "Select MPLS Policy". At the top, there is a search bar: "Show MPLS policies with" followed by a dropdown menu set to "Policy Name", the word "matching", an asterisk "*" in a text box, and a "Find" button. Below the search bar, it says "Showing 1-5 of 5 records".

#	Select	Policy Name	Policy Owner
1.	<input type="radio"/>	mpls-mgmt	Customer - CUST-A
2.	<input type="radio"/>	mpls-mvrfce-pe-ce	Customer - CUST-A
3.	<input checked="" type="radio"/>	mpls-mvrfce-pe-noce	Customer - CUST-A
4.	<input type="radio"/>	mpls-pe-ce	Customer - CUST-A
5.	<input type="radio"/>	mpls-pe-noce	Customer - CUST-A

At the bottom of the table, there is a "Rows per page:" dropdown set to "10". To the right, there are navigation icons and a "Go to page:" field with "1" entered, followed by "of 1" and a "Go" button. At the very bottom, there are "OK" and "Cancel" buttons.

- Step 3** Choose the MPLS Policy (**mpls-mvrfce-pe-noce**).
- Step 4** Click **OK**.
The MPLS Service Request Editor window appears.
- Step 5** Click **Add Link**.
The MPLS Service Request Editor window appears, as shown in [Figure 8-16](#).

Figure 8-16 MPLS Service Request Editor - Select MVRFCPE

MPLS Service Request Editor

Job ID: SR ID: SR State:

Policy: mpls-mvrfce-pe-noce

Description:

Showing 1-1 of 1 records

#	<input type="checkbox"/>	Link ID	CLE	CLE Interface	MVRFCPE CE Facing Interface	MVRFCPE	MVRFCPE PE Facing Interface	PE	PE Interface	Link Attribute	Logical Link
1.	<input type="checkbox"/>	0	Select CLE	<input type="text"/>	<input type="text"/>	Select MVRFCPE	<input type="text"/>	Select PE	<input type="text"/>	Add	N/A

Rows per page: 10 Go to page: 1 of 1

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Step 6 Click **Select MVRFCPE**.

The CPE for MPLS VPN Link window appears.

Step 7 Choose a MVRFCPE and click **Select**.

The MPLS Service Request Editor window appears, as shown in [Figure 8-17](#).

Step 8 Click **Select MVRFCPE**.

Figure 8-17 MPLS Service Request Editor - MVRFCPE CE Facing Interface

MPLS Service Request Editor

Job ID: SR ID: SR State:

Policy: mpls-mvrfce-pe-noce

Description:

Showing 1-1 of 1 records

#	<input type="checkbox"/>	Link ID	CLE	CLE Interface	MVRFCPE CE Facing Interface	MVRFCPE	MVRFCPE PE Facing Interface	PE	PE Interface	Link Attribute	Logical Link
1.	<input type="checkbox"/>	0	Select CLE	<input type="text"/>	Select One	mlce3	Select One	Select PE	<input type="text"/>	Add	N/A

Rows per page: 10 Go to page: 1 of 1

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Step 9 Choose the **MVRFCPE CE Facing Interface** from the drop-down list.

Step 10 Choose the **MVRFCPE PE Facing Interface** from the drop-down list.

The MPLS Service Request Editor window appears, as shown in [Figure 8-18](#).

Figure 8-18 MPLS Service Request Editor

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Step 11 Click **Add** in the Link Attribute cell.

The MPLS Link Attribute Editor - Interface window appears, as shown in Figure 8-19.

Figure 8-19 MPLS Link Attribute Editor - Interface

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PE Information

Step 12 Encapsulation: Choose the PE Encapsulation from the drop-down list. (**DOT1Q**)

Step 13 VLAN ID: Enter the PE VLAN ID.

MVRFC PE Facing Information

Step 14 Encapsulation: Choose the PE Encapsulation from the drop-down list. (**DOT1Q**)

Step 15 Click **Next**.

The MPLS Link Attribute Editor - Interface window appears, as shown in [Figure 8-20](#).

Figure 8-20 MPLS Link Attribute Editor - Interface

Attribute	Value
MVRFC CE Facing Information	
MVRFC	mlce3
Interface Name:	Ethernet0/2
Interface Description:	
CE Encapsulation:	DOT1Q
VLAN ID *:	570 (1-4095)

Note: * - Required Field

- Step 2 of 7 -

< Back Next > Finish Cancel

101731

MVRFC CE Information

Step 16 Encapsulation: Choose the PE Encapsulation from the drop-down list. (**DOT1Q**)

Step 17 VLAN ID: Enter the PE VLAN ID.

MVRFC PE Facing Information

Step 18 Encapsulation: Choose the PE Encapsulation from the drop-down list. (**DOT1Q**)

Step 19 Click **Next**.

The MPLS Link Attribute Editor - IP Address Scheme window appears for **PE-MVRF-CE interface address/mask**.

Step 20 Click **Next** to accept the defaults.

The MPLS Link Attribute Editor - IP Address Scheme window appears for **MVRFC-CE interface address/mask**.

Step 21 Click **Next** to accept the defaults.

The MPLS Link Attribute Editor - Routing Information window reappears for **PE-MVRF-CE routing information**.

Step 22 Click **Next** to accept the defaults.

The MPLS Link Attribute Editor - Routing Information window reappears for **MVRFC-CE routing information**.

- Step 23** Click **Next** to accept the defaults.
The MPLS Link Attribute Editor - VRF and VPN window appears.
- Step 24** Click **Add** to join a VPN.
The Select CERCs window appears.
- Step 25** Choose a Customer from the drop-down list.
- Step 26** Choose a VPN from the drop-down list.
- Step 27** Check to choose a VPN from the list.
- Step 28** Click **Join As Hub** or **Join As Spoke**.
- Step 29** Click **Done**.
The MPLS Link Attribute Editor - VRF and VPN window reappears.
- Step 30** Click the **Next** button to associate templates or data files to the service request.

**Note**

This step assumes the policy on which the service request is based has template association enabled. If not, there will be no **Next** button visible in the GUI. In that case, click **Finish** and return to the MPLS Service Request Editor window and proceed with Step 34, below.

The MPLS Link Attribute Editor - Template Association window appears. In this window, you can associate templates and data files with a device by clicking the **Add** button in Template/Data File column for the device. When you click the **Add** button, the Add/Remove Templates window appears. For instructions about associating templates with service requests and how to use the features in this window, see [Appendix B, “Working with Templates and Data Files.”](#)

- Step 31** When you have completed setting up templates and data files for any device(s), click **Finish** in the Template Association window to close it and return to the MPLS Service Request Editor window.
The MPLS Service Request Editor window reappears, as shown in [Figure 8-21](#).

Figure 8-21 MPLS Service Request Editor

#	Link ID	CLE	CLE Interface	MVRFCE CE Facing Interface	MVRFCE	MVRFCE PE Facing Interface	PE	PE Interface	Link Attribute	Logical Link
1.	0	Select CLE		Ethernet0/2	mlce3	Ethernet0/1	mlpe2	FastEthernet0/0	Edited	Details...

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Step 32 Enter the service request description and click **Save**. (`mpls-mvrfce-pe-noce`)

The MPLS Service Requests window reappears showing that the MPLS VPN MVRFCPE PE-NoCE service request is in the Requested state and ready to deploy.

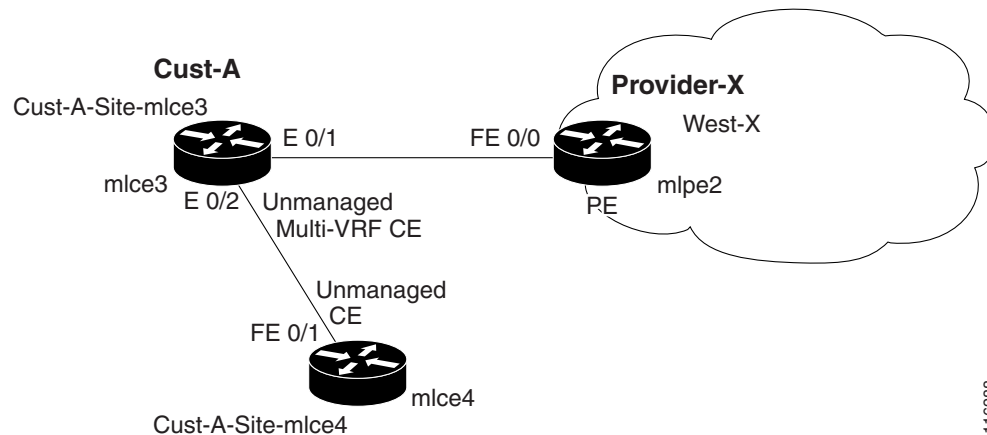
Creating an Unmanaged MVRFCPE

The unmanaged MVRFCPE feature is similar to the unmanaged CE feature in so far as the service provider does not use ISC to upload or download configurations to the CPE. This feature is similar to the managed MVRFCPE feature in so far as ISC creates a link with three devices: a PE, an MVRFCPE, and a CE.

In the unmanaged scenarios, the customer configures the CPE manually. To automate the process of configuring the unmanaged MVRFCPE, the service provider can use ISC to generate the configuration and then send it to the customer for manual implementation.

Figure 8-22 shows an overview of a network topology with MPLS VPN MVRFCPE PE-CE links.

Figure 8-22 Unmanaged MVRFCPE PE-CE Network Topology



The network topology in Figure 8-22 shows a service provider (**Provider-X**) and a customer (**Cust-A**). The Provider contains one Region (**West-X**) and one PE (**mlpe2**). The Customer contains an MVRFCPE (**mlce3**) and a CE (**mlce4**). Both of these CPEs are unmanaged.