



Provisioning MVRFCE PE-CE Links

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

- [MPLS VPN MVRFCE PE-CE Link Overview, page 8-1](#)
- [Creating MPLS VPN MVRFCE PE-CE Service Policies, page 8-6](#)
- [Creating MPLS VPN MVRFCE PE-CE Service Requests, page 8-18](#)

MPLS VPN MVRFCE PE-CE Link Overview

This section contains the following sections:

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

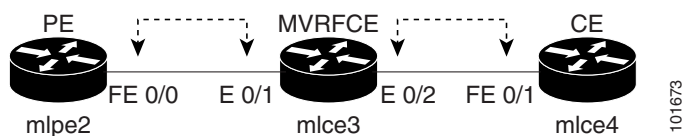
An MVRFCE PE-CE Policy Type is a PE to CE link with three devices:

- PE
- Multi-VRF CE
- CE

This Policy Type has two options:

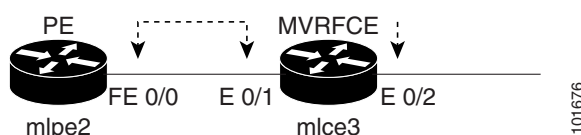
- CE Present *enabled* (One PE with one MVRFCE and one CE; three devices)
- CE Present *disabled* (One PE with one MVRFCE; two devices)

[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.

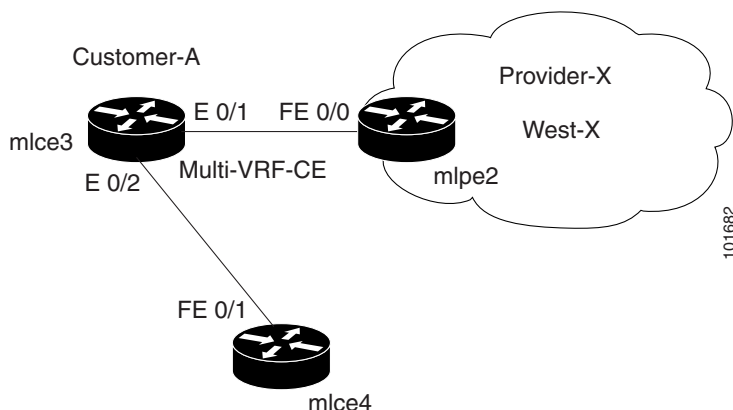
Figure 8-2 shows an example of a PE to MVRFCE link with no CE.

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. |
| Step 2 | Setup a Provider with a Region. |
| Step 3 | Import, create, or discover Devices. |
| Step 4 | Create CPE and PE. |
| Step 5 | Collect Configurations. |
| Step 6 | Create Resource Pools and CE routing communities (CERC). |
| Step 7 | Define a VPN. |
-

Infrastructure Data

In the subsequent MVRFCE PE-CE scenarios, the following infrastructure data is used:

- Provider: **Provider-X**
- Region: **West-X**
- AS#: **99**
- PE: **mlpe2.cisco.com**
- Device Role: **PE POP**
- Customer: **Cust-A**
- Site: **Cust-A-Site- mlce3**
- CE: **mlce3.cisco.com**
- Site: **Cust-A-Site- mlce4**
- CE: **mlce4.cisco.com**
- Device Role: **CPE**
- IP Address Pool:
 - Name: **Provider-X-West-X**
 - Type: **Region**
 - Start: **25.7.0.0**
 - Mask: **30**
 - Size: **16384**
- Route Distinguisher Pool:
 - Name: **99:PROVIDER-X**
 - Start: **50000**
 - Size: **10000**

- Route Target Pool:
 - Name: **99:PROVIDER-X**
 - Start: **50000**
 - Size: **10000**
- VPN
 - Definition: **west-xVPN**
 - See: [Defining a VPN for the MVRFCE PE-CE Link, page 8-4](#)

Defining a VPN for the MVRFCE PE-CE Link

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, follow these steps:

-
- Step 1** Log in to ISC.
- Step 2** Go to **Service Inventory > Inventory and Connection Manager > VPNs**.
The VPN window appears, as shown in [Figure 8-4](#).

Figure 8-4 VPNs

VPNs

Show VPNs with matching

Showing 1-1 of 1 records

#	☐	VPN Name	Customer Name
1.	☐	east-xVPN	CUST-A

Rows per page:

Go to page: of 1

- Step 3** Click **Create** to create a VPN.
The Create VPN window appears, as shown in [Figure 8-5](#).

Figure 8-5 Create VPN

You Are Here: [Service Inventory](#) > [Inventory and Connection Manager](#) > [VPNs](#)

Create VPN

Name: *

Customer: *

MPLS Attributes

Create Default CE Routing Community: ☐ Select Provider

Enable Multicast: ☐

Data MDT Size: 0

Data MDT Threshold: 0 (1 - 4294967)

CE Routing Communities:

VPLS Attributes

Enable VPLS: ☐

Service Type: ERS

Topology: Full Mesh

Save Cancel

Note: * - Required Field

Step 4 Edit the following attributes:

- **Name:** Enter the *vpn name*. (**west-xVPN**)
- **Customer:** Click **Select**.

The Select Customer window appears, as shown in [Figure 8-6](#).

Figure 8-6 Choose Customer

Show Customers with Customer Name matching *

Find

Showing 1-2 of 2 records

#	Select	Name
1.	☐	CUST-A
2.	☐	CUST-B

Rows per page: 10

Go to page: 1 of 1

Select Cancel

Step 5 Choose a customer and click **Select**.

Step 6 Click **Next**.

The VPNs window reappears, as shown in [Figure 8-7](#).

Figure 8-7 VPNs

You Are Here: > Service Inventory > Inventory and Connection Manager > VPNs

Create VPN

Name *	west-xVPN		
Customer *	CUST-A	Select	
MPLS Attributes			
Create Default CE Routing Community:	☒	PROVIDER-X	
Enable Multicast:	☐		
Data MDT Size:	0		
Data MDT Threshold:	0	(1 - 4294967)	
CE Routing Communities:			Select Remove
VPLS Attributes			
Enable VPLS:	☐		
Service Type:	ERS		
Topology:	Full Mesh		
		Save	Cancel

Note: * - Required Field

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The VPN Name (**west-xVPN**) is associated with the Customer (**Cust-A**) in this new VPN definition.

Creating MPLS VPN MVRFCE PE-CE Service Policies

This section contains the following sections:

- [Creating a MVRFCE PE-CE Service Policy, page 8-6](#)
- [Creating a PE-NoCE Service Policy, page 8-12](#)

Creating a MVRFCE PE-CE Service Policy

To create a MVRFCE PE-CE Service Policy, follow these steps:

- Step 1** Log in to ISC.
- Step 2** Go to **Service Design > Policy Manager**.
The Policies window appears, as shown in [Figure 8-8](#).

Figure 8-8 Policies

Policies

Show Policies with matching of type

Showing 1-2 of 2 records

#	☐	Policy Name	Service	Owner
1.	☐	mpls-pe-ce	MPLS	Customer - CUST-A
2.	☐	mpls-pe-noc	MPLS	Customer - CUST-A

Rows per page:

MPLS Policy

Step 3 From the **Create** drop-down list, choose **MPLS Policy**.

The MPLS Policy Editor - Policy Type window appears, as shown in [Figure 8-9](#).

Figure 8-9 MPLS Policy Editor - Policy Type

MPLS Policy Editor - Policy Type

Mode: ADDING

☐ 1. Step 1: Policy Type

☐ 2. ...

Attribute	Value
Policy Name *	mpls-mvrfce-pe-ce
Policy Owner:	☒ Customer ☐ Provider ☐ Global Policy
Customer *	Select
Policy Type:	☐ Regular: PE-CE ☒ MVRFCE: PE-CE
CE Present:	☒

Note: * - Required Field

Step 4 Edit the following attributes:

- **Policy Name:** Enter the *policy name*.
- **Policy Owner:** Choose the Policy Owner.
- **Customer:** See [Step 5](#).
- **Policy Type:** Choose the Policy Type. (**Regular MVRFCE PE-CE**)
- **CE Present:** Choose CE Present. (**CE Present**)

Step 5 Click **Select** to specify a Customer.

The Customer for MPLS Policy ownership window appears, as shown in [Figure 8-10](#).

Figure 8-10 Customer for MPLS Policy

Customer for **MPLS policy ownership**

Show Customers with Customer Name matching *

Showing 1-2 of 2 records

#	Select	Name
1.	☒	CUST-A
2.	☐	CUST-B

Rows per page: Go to page: of 1

Step 6 Choose a Customer and click **Select**. (Cust-A)

Step 7 Click **Next**.

The MPLS Policy Editor - PE Interface window appears, as shown in [Figure 8-11](#).

Figure 8-11 The MPLS Policy Editor - PE Interface

MPLS Policy Editor - Interface

Attribute	Value	Editable
Reset all Attribute editable flags:		☒
PE Information		
Interface Type:	ANY	
Interface Format:		
Interface Description:		☒
Shutdown Interface:	☐	☒
MVRFCE PE Facing Information		
Interface Type:	ANY	
Interface Format:		
Interface Description:		☒

Step 8 Click **Next**.

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

Figure 8-12 The MPLS Policy Editor - CE Interface

MPLS Policy Editor - Interface

Attribute	Value	Editable
MVRFCE CE Facing Information		
Interface Type:	ANY	
Interface Format:		
Interface Description:		☒
CE Information		
Interface Type:	ANY	
Interface Format:		
Interface Description:		☒

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

**Note**

Make sure the Editable check boxes are checked, so you can edit these attributes in the Service Request process.

The MPLS Policy Editor - IP Address Scheme window appears, as shown in [Figure 8-13](#).

Figure 8-13 The MPLS Policy Editor - IP Address Scheme

MPLS Policy Editor - IP Address Scheme

Attribute	Value	Editable
PE-MVRFCE Interface Address/Mask		
IP Numbering Scheme:	IP Numbered	☒
Automatically Assign IP Addresses:	☒	☒
IP Address Pool:	Region Pool	☒

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The MPLS Policy Editor - IP Address Scheme window appears, as shown in [Figure 8-13](#).

Figure 8-14 The MPLS Policy Editor - IP Address Scheme

MPLS Policy Editor - IP Address Scheme

Attribute	Value	Editable
MVRFCE-CE Interface Addresses/Mask		
IP Numbering Scheme:	IP Numbered	☒
Extra CE Loopback Required:	☐	☐
Automatically Assign IP Addresses:	☒	☒
IP Address Pool:	Region Pool	☒

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Step 10 Edit the following attributes:

- **IP Numbering Scheme:** Choose an IP Numbering Scheme.
- **Automatically Assign IP Address:** To have ISC automatically assign IP Addresses, click the check box.

- **IP Address Pool:** Choose the IP Address Pool.

Step 11 Click **Next**.

The MPLS Policy Editor - Routing Information window appears, as shown in [Figure 8-15](#).

Figure 8-15 The MPLS Policy Editor - Routing Information

Attribute	Value	Editable
PE-MVRFCE Routing Information		
Routing Protocol	STATIC	☒
Give Only Default Routes to MVRFCE:	☐	☒
Redistribute Connected (BGP only):	☐	☒
Default Information Originate (BGP only):	☐	☒

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Step 12 Click **Next** to accept the defaults.

The MPLS Policy Editor - Routing Information window appears, as shown in [Figure 8-16](#).

Figure 8-16 The MPLS Policy Editor - Routing Information

MPLS Policy Editor - Routing Information		
Attribute	Value	Editable
MVRFCE-CE Routing Information		
Routing Protocol	STATIC	☒
Give Only Default Routes to CE:	☐	☒

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



Note

Make sure the Editable check boxes are checked, so you can edit these attributes in the Service Request process.

The MPLS Policy Editor - VRF and VPN Membership window appears, as shown in [Figure 8-17](#).

Figure 8-17 The MPLS Policy Editor - VRF and VPN Membership

MPLS Policy Editor - VRF and VPN Membership

Attribute	Value	Editable
VRF Information		
Export Map:		☒
Import Map:		☒
Maximum Routes:	(1-4294967295)	☒
Maximum Route Threshold:	80 (1-100)	☒
VRF Description:		☒
Allocate new route distinguisher:	☐	☒
VRF And RD Overwrite	☐	☒
Template Association		
Template Enable:	☐	
VPN Selection		
PE VPN Membership:		☒

Select Customer VPN Provider CERC Is Hub

Add Delete

- Step 8 of 8 -

< Back Next > Finish Cancel

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



Note Make sure the Editable check boxes are checked, so you can edit these attributes in the Service Request process.

Step 15 Click **Finish**.

The Policies window reappears, as shown in [Figure 8-18](#).

Figure 8-18 Policies

Policies

Show Policies with Policy Name matching mpls-mvrfce-pe-ce of type *

Showing 1-1 of 1 records

#	Policy Name	Service	Owner
1.	mpls-mvrfce-pe-ce	MPLS	Customer - CUST-A

Rows per page: 10

Go to page: 1 of 1

Create Edit Delete

The MPLS VPN MVRFCE PE-CE Service Policy is complete.

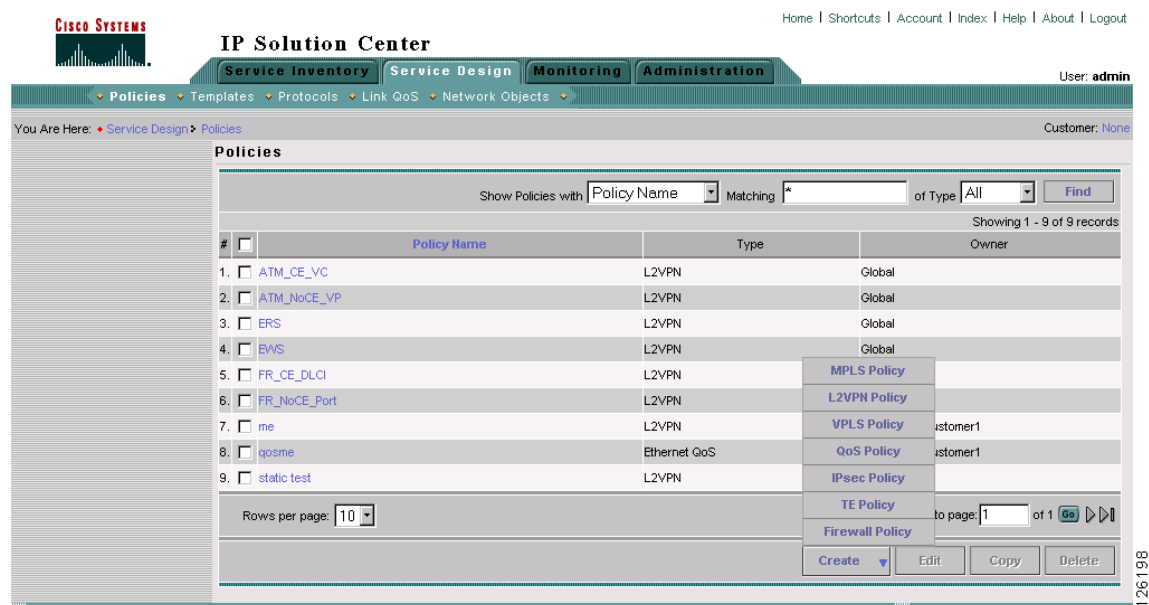
Creating a PE-NoCE Service Policy

To create a PE-NoCE Service Policy, follow these steps:

- Step 1** Log in to ISC.
- Step 2** Go to **Service Design > Policy Manager**.

The Policies window appears, as shown in [Figure 8-19](#).

Figure 8-19 Policies



- Step 3** From the **Create** drop-down list, choose **MPLS Policy**.

The MPLS Policy Editor - Policy Type window appears, as shown in [Figure 8-20](#).

Figure 8-20 MPLS Policy Editor - Policy Type

MPLS Policy Editor - Policy Type

Attribute	Value
Policy Name *	mpls-mvrfce-pe-noce
Policy Owner:	☒ Customer ☐ Provider ☐ Global Policy
Customer *	CUST-A Select
Policy Type:	☐ Regular: PE-CE ☒ MVRFCE: PE-CE
CE Present:	☐

Note: * - Required Field

- Step 4** Edit the following attributes:
- **Policy Name:** Enter the *policy name*.
 - **Policy Owner:** Choose the Policy Owner.
 - **Customer:** See [Step 5](#).
 - **Policy Type:** Choose the Policy Type. (MVRFCE PE-CE)
 - **CE Present:** *Do not choose* CE Present.

- Step 5** Click **Select** to specify a Customer.

The Customer for MPLS Policy window appears, as shown in [Figure 8-21](#).

Figure 8-21 Customer for MPLS Policy

Customer for MPLS policy ownership

Show Customers with Customer Name matching

Showing 1-2 of 2 records

#	Select	Name
1.	☒	CUST-A
2.	☐	CUST-B

Rows per page: Go to page: of 1

- Step 6** Choose a customer and click **Select**.

- Step 7** Click **Next**.

The MPLS Policy Editor - Interface window appears, as shown in [Figure 8-22](#).

Figure 8-22 The MPLS Policy Editor - PE Interface

MPLS Policy Editor - Interface

Attribute	Value	Editable
Reset all Attribute editable flags:		☒
PE Information		
Interface Type:	ANY	
Interface Format:		
Interface Description:		☒
Shutdown Interface:	☐	☒
MVRFCE PE Facing Information		
Interface Type:	ANY	
Interface Format:		
Interface Description:		☒

The MPLS Policy Editor - Interface window appears, as shown in [Figure 8-23](#).

Step 8 Click **Next** to accept the defaults.

Figure 8-23 The MPLS Policy Editor - CE Interface

MPLS Policy Editor - Interface		
Attribute	Value	Editable
MVRFCE CE Facing Information		
Interface Type:	ANY	
Interface Format:		
Interface Description:		☒

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



Note

Make sure the Editable check boxes are checked, so you can edit these attributes in the Service Request process.

The MPLS Policy Editor - IP Address Scheme window appears, as shown in [Figure 8-24](#).

Figure 8-24 The MPLS Policy Editor - IP Address Scheme

MPLS Policy Editor - IP Address Scheme		
Attribute	Value	Editable
PE-MVRFCE Interface Address/Mask		
IP Numbering Scheme:	IP Numbered	☒
Automatically Assign IP Addresses:	☒	☒
IP Address Pool:	Region Pool	☒

Step 10 Edit the following attributes:

- **IP Numbering Scheme:** Choose the IP Numbering Scheme.
- **Automatically Assign IP Address:** To have ISC automatically assign IP Addresses, click the check box.
- **IP Address Pool:** Choose the IP Address Pool.
- Click **Next**.

Step 11 Click **Next**.

The MPLS Policy Editor - IP Address Scheme window appears, as shown in [Figure 8-25](#).

Figure 8-25 The MPLS Policy Editor - IP Address Scheme

MPLS Policy Editor - IP Address Scheme

Attribute	Value	Editable
MVRFCE-CE Interface Addresses/Mask		
IP Numbering Scheme:	IP Numbered ▾	☒
Automatically Assign IP Addresses:	☒	☒
IP Address Pool:	Region Pool ▾	☒

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Step 12 Edit the following attributes:

- **IP Numbering Scheme:** Choose the IP Numbering Scheme.
- **Automatically Assign IP Address:** To have ISC automatically assign IP Addresses, click the check box.
- **IP Address Pool:** Choose the IP Address Pool.

Click **Next**.

The MPLS Policy Editor - Routing Information window appears, as shown in [Figure 8-26](#).

Figure 8-26 The MPLS Policy Editor - Routing Information

MPLS Policy Editor - Routing Information

Attribute	Value	Editable
PE-MVRFCE Routing Information		
Routing Protocol	STATIC ▾	☒
Give Only Default Routes to MVRFCE:	☐	☒
Redistribute Connected (BGP only):	☐	☒
Default Information Originate (BGP only):	☐	☒

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

The MPLS Policy Editor - Routing Information window appears, as shown in [Figure 8-27](#).

Figure 8-27 The MPLS Policy Editor - Routing Information

MPLS Policy Editor - Routing Information

Attribute	Value	Editable
MVRFCE-CE Routing Information		
Routing Protocol	STATIC ▾	☒
Give Only Default Routes to CE:	☐	☒

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Click **Next** to accept the defaults.

**Note**

Make sure the Editable check boxes are checked, so you can edit these attributes in the Service Request process.

The MPLS Policy Editor - VRF and VPN Membership window appears, as shown in [Figure 8-28](#).

Figure 8-28 The MPLS Policy Editor - VRF and VPN Membership

MPLS Policy Editor - VRF and VPN Membership

Attribute	Value	Editable
VRF Information		
Export Map:		☒
Import Map:		☒
Maximum Routes:	(1-4294967295)	☒
Maximum Route Threshold:	80 (1-100)	☒
VRF Description:		☒
Allocate new route distinguisher:	☐	☒
VRF And RD Overwrite	☐	☒
Template Association		
Template Enable:	☐	
VPN Selection		
PE VPN Membership:		☒

Select Customer VPN Provider CERC Is Hub

Add Delete

- Step 8 of 8 -

< Back Next > Finish Cancel

- Step 14** To add the VPN definition, choose **Add**:
The VPN dialog box appears, as shown in [Figure 8-29](#).

Figure 8-29 VPN Dialog Box

Customer: CUST-A VPN: west-xVPN

Showing 1-1 of 1 records

#	☐	Customer	VPN	Provider	CERC	Topology
1.	☐	CUST-A	west-xVPN	PROVIDER-X	Default	Hub and Spoke

Rows per page: 5 Go to page: 1 of 1 Go

Join As Hub Join As Spoke Done

Click **Join as Hub** and then click **Done**.

The MPLS Policy Editor - VRF and VPN Membership window appears, as shown in [Figure 8-30](#).

Figure 8-30 The MPLS Policy Editor - VRF and VPN Membership

MPLS Policy Editor - VRF and VPN Membership

Attribute	Value	Editable
VRF Information		
Export Map:		☒
Import Map:		☒
Maximum Routes:	(1-4294967295)	☒
Maximum Route Threshold:	80 (1-100)	☒
VRF Description:		☒
Allocate new route distinguisher:	☐	☒
VRF And RD Overwrite	☐	☒
Template Association		
Template Enable:	☐	
VPN Selection		
PE VPN Membership:		☒

Select	Customer	VPN	Provider	CERC	Is Hub
☐	CUST-A	west-xVPN	PROVIDER-X	Default	☒

Add Delete

- Step 8 of 8 -

< Back Next > Finish Cancel

Click **Finish**.

The Policies window reappears, as shown in Figure 8-31.

Figure 8-31 Policies

CISCO SYSTEMS IP Solution Center

Home | Shortcuts | Account | Index | Help | About | Logout

User: admin

Service Inventory Service Design **Monitoring** Administration

Polices Templates Protocols Link QoS Network Objects

You Are Here: Service Design Polices Customer: None

Polices

Show Policies with Policy Name Matching * of Type All Find

Showing 1 - 9 of 9 records

#	Policy Name	Type	Owner
1.	ATM_CE_VC	L2VPN	Global
2.	ATM_NoCE_VP	L2VPN	Global
3.	ERS	L2VPN	Global
4.	BWS	L2VPN	Global
5.	FR_CE_DLCl	L2VPN	MPLS Policy
6.	FR_NoCE_Port	L2VPN	L2VPN Policy
7.	me	L2VPN	VPLS Policy customer1
8.	qosme	Ethernet QoS	QoS Policy customer1
9.	static test	L2VPN	IPsec Policy

Rows per page: 10 to page 1 of 1

Create Edit Copy Delete

The MPLS VPN PE-NoCE Service Policy is complete.

Creating MPLS VPN MVRFCE PE-CE Service Requests

This section contains the following sections:

- [Creating a MVRFCE PE-CE Service Request, page 8-18](#)
- [Creating a MVRFCE PE-NoCE Service Request, page 8-27](#)

Creating a MVRFCE PE-CE Service Request

To create a MVRFCE PE-CE Service Request, follow these steps:

- Step 1** Log in to ISC.
- Step 2** Go to **Service Inventory > Inventory and Connection Manager > Service Requests**.
The Service Requests window appears, as shown in [Figure 8-32](#).

Figure 8-32 Service Requests

- Step 3** From the **Create** drop-down list, choose **MPLS Policy**.
The Select MPLS Policy window appears, as shown in [Figure 8-33](#).

Figure 8-33 Select MPLS Policy

Select MPLS Policy

Show MPLS policies with matching

Showing 1-5 of 5 records

#	Select	Policy Name	Policy Owner
1.	☐	mpls-mgmt	Customer - CUST-A
2.	☒	mpls-mvrfce-pe-ce	Customer - CUST-A
3.	☐	mpls-mvrfce-pe-noce	Customer - CUST-A
4.	☐	mpls-pe-ce	Customer - CUST-A
5.	☐	mpls-pe-noce	Customer - CUST-A

Rows per page:

101701

Step 4 Choose the MPLS Policy. (**mpls-mvrfce-pe-ce**)

Step 5 Click **OK**.

The MPLS Service Request Editor window appears, as shown in [Figure 8-34](#).

Figure 8-34 MPLS Service Request Editor

MPLS Service Request Editor

Job ID: SR ID: SR State:

Policy: mpls-mvrfce-pe-ce

Description:

Showing 0 of 0 records

#	☐	Link ID	CE	CE Interface	MVRFCE CE Facing Interface	MVRFCE	MVRFCE PE Facing Interface	PE	PE Interface	Link Attribute	Logical Link
---	--------------------------	---------	----	--------------	----------------------------	--------	----------------------------	----	--------------	----------------	--------------

Rows per page:

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Step 6 Click **Add Link**.

The MPLS Service Request Editor window appears, as shown in [Figure 8-35](#).

Figure 8-35 MPLS Service Request Editor - Select CE

MPLS Service Request Editor

Job ID: SR ID: SR State:

Policy: mpls-mvrfce-pe-ce

Description:

Showing 1-1 of 1 records

#	☐	Link ID	CE	CE Interface	MVRFCE CE Facing Interface	MVRFCE	MVRFCE PE Facing Interface	PE	PE Interface	Link Attribute	Logical Link
1.	☐	0	Select CE			Select MVRFCE		Select PE		Add	N/A

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

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Step 7 Click **Select CE**.The CPE for MPLS VPN Link window appears, as shown in [Figure 8-36](#).**Figure 8-36** CPE for MPLS VPN Link

CPE for MPLS VPN Link

Show CPEs with matching

Showing 1-10 of 15 records

#	Select	Device Name	Customer Name	Site Name	Management Type
1.	☐	mlce10.cisco.com	CUST-A	CUST-A-Site-mlce10	MANAGED
2.	☐	mlce11.cisco.com	CUST-A	CUST-A-Site-mlce11	MANAGED
3.	☒	mlce4.cisco.com	CUST-A	CUST-A-Site-mlce4	MANAGED
4.	☐	mlce5.cisco.com	CUST-A	CUST-A-Site-mlce5	MANAGED
5.	☐	mlce6.cisco.com	CUST-A	CUST-A-Site-mlce6	MANAGED
6.	☐	mlce7.cisco.com	CUST-A	CUST-A-Site-mlce7	MANAGED
7.	☐	mlce1.cisco.com	CUST-B	CUST-B-Site-mlce1	MANAGED
8.	☐	mlce12.cisco.com	CUST-B	CUST-B-Site-mlce12	MANAGED
9.	☐	mlce13.cisco.com	CUST-B	CUST-B-Site-mlce13	MANAGED
10.	☐	mlce14.cisco.com	CUST-B	CUST-B-Site-mlce14	MANAGED

Rows per page: 10 Go to page: 1 of 2

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Step 8 Choose the CPE Device and click **Select**.The MPLS Service Request Editor window appears, as shown in [Figure 8-37](#).

Figure 8-37 MPLS Service Request Editor - Select MVRFCE

#	Link ID	CE	CE Interface	MVRFCE CE Facing Interface	MVRFCE	MVRFCE PE Facing Interface	PE	PE Interface	Link Attribute	Logical Link
1.	0	mlce4	FastEthernet0/1		Select MVRFCE		Select PE		Add	N/A

Step 9 Choose the CE Interface from the drop-down box.

Step 10 Click **Select MVRFCE**.

The MVRFCE for MPLS VPN Link window appears, as shown in Figure 8-38.

Figure 8-38 PE for MPLS VPN Link

#	Select	Device Name	Customer Name	Site Name	Management Type
1.	☒	mlce3.cisco.com	CUST-A	CUST-A-Site-mlce3	MULTI_VRF

Step 11 Choose the MVRFCE and click **Select**.

The MPLS Service Request Editor window appears, as shown in Figure 8-39.

Figure 8-39 MPLS Service Request Editor - Select MVRFCE CE Facing Interface

#	Link ID	CE	CE Interface	MVRFCE CE Facing Interface	MVRFCE	MVRFCE PE Facing Interface	PE	PE Interface	Link Attribute	Logical Link
1.	0	mlce4	FastEthernet0/1	Ethernet0/2	mlce3	Select One	Select PE		Add	N/A

Step 12 Choose the MVRFCE CE Facing Interface from the drop-down box.

Step 13 Choose the MVRFCE PE Facing Interface from the drop-down box.

The MPLS Service Request Editor window appears, as shown in [Figure 8-40](#).

Figure 8-40 PE for MPLS VPN Link

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

Step 14 Click **Add** in the Link Attribute cell.

The MPLS Link Attribute Editor - Interface window appears, as shown in [Figure 8-41](#).

Figure 8-41 MPLS Link Attribute Editor - Interface

Attribute	Value
PE Information	
PE	mlpe2
Interface Name:	FastEthernet0/0
Interface Description:	
Shutdown Interface:	☐
Encapsulation:	DOT1Q
VLAN ID *	510 (1-4095)
MVRFCE PE Facing Information	
MVRFCE	mlce3
Interface Name:	Ethernet0/1
Interface Description:	
Encapsulation:	DOT1Q

PE Information

Step 15 Encapsulation: Choose the PE Encapsulation from the drop-down box. (**DOT1Q**)

Step 16 VLAN ID: Enter the *PE VLAN ID*. (**510**)

MVRFCE PE Facing Information

Step 17 Encapsulation: Choose the PE Encapsulation from the drop-down box. (**DOT1Q**)

Step 18 Click **Next**.

The MPLS Link Attribute Editor - Interface window appears, as shown in [Figure 8-42](#).

Figure 8-42 MPLS Link Attribute Editor - Interface

MPLS Link Attribute Editor - Interface

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

Note: * - Required Field

- Step 2 of 7 -

< Back Next > Finish Cancel

MVRFCE CE Information

Step 19 Encapsulation: Choose the PE Encapsulation from the drop-down box. (**DOT1Q**)

Step 20 VLAN ID: Enter the *PE VLAN ID*. (**530**)

MVRFCE PE Facing Information

Step 21 Encapsulation: Choose the PE Encapsulation from the drop-down box. (**DOT1Q**)

Click **Next**.

The MPLS Link Attribute Editor - IP Address Scheme window appears, as shown in [Figure 8-43](#).

Figure 8-43 MPLS Link Attribute Editor - IP Address Scheme

MPLS Link Attribute Editor - IP Address Scheme

Attribute	Value
PE-MVRFCE Interface Address/Mask	
IP Numbering Scheme:	IP Numbered
Automatically Assign IP Addresses:	☒
IP Address Pool:	Region Pool

Note: * - Required Field

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

The MPLS Link Attribute Editor - IP Address Scheme window appears, as shown in [Figure 8-44](#).

Figure 8-44 MPLS Link Attribute Editor - IP Address Scheme

MPLS Link Attribute Editor - IP Address Scheme

Attribute	Value
MVRFCE-CE Interface Addresses/Mask	
IP Numbering Scheme:	IP Numbered ▾
Automatically Assign IP Addresses:	☒
IP Address Pool:	Region Pool ▾

Note: * - Required Field

101689

Accept the defaults and click **Next**.

The MPLS Link Attribute Editor - Routing Information window reappears, as shown in [Figure 8-45](#).

Figure 8-45 MPLS Link Attribute Editor - Routing Information

MPLS Link Attribute Editor - Routing Information

Attribute	Value
PE-MVRFCE Routing Information	
Routing Protocol	STATIC ▾
Give Only Default Routes to MVRFCE:	☐
Redistribute Connected (BGP only):	☐
Default Information Originate (BGP only):	☐
Advertised Routes for MVRFCE:	Edit
Routes To Reach Other Sites:	Edit

Note: * - Required Field

101690

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

The MPLS Link Attribute Editor - Routing Information window reappears, as shown in [Figure 8-46](#).

Figure 8-46 MPLS Link Attribute Editor - Routing Information

MPLS Link Attribute Editor - Routing Information

Attribute	Value
MVRFCE-CE Routing Information	
Routing Protocol	STATIC ▾
Give Only Default Routes to CE:	☐
Advertised Routes for CE:	Edit
Routes To Reach Other Sites:	Edit

Note: * - Required Field

101691

Accept the defaults and click **Next**.

The MPLS Link Attribute Editor - VRF and VPN window appears, as shown in [Figure 8-47](#).

Figure 8-47 MPLS Link Attribute Editor - VRF and VPN

Attribute	Value
VRF Information	
Export Map:	
Import Map:	
Maximum Routes:	(1-4294967295)
Maximum Route Threshold *:	80 (1-100)
VRF Description:	
Allocate new route distinguisher:	☐
VRF And RD Overwrite	☐
VPN Selection	
PE VPN Membership *:	
Select	Customer
VPN	Provider
CERC	Is Hub
Add Delete	

Note: * - Required Field

- Step 7 of 7 -

< Back Next > Finish Cancel

Step 24 Click **Add** to join VPN.

The MPLS Link Attribute Editor - VRF and VPN window appears, as shown in [Figure 8-48](#).

Figure 8-48 MPLS Link Attribute Editor - VRF and VPN

Customer: CUST-A VPN: west-xVPN

Showing 1-1 of 1 records

#	Customer	VPN	Provider	CERC	Topology
1.	CUST-A	west-xVPN	PROVIDER-X	Default	Hub and Spoke

Rows per page: 5 Go to page: 1 of 1 Go

Join As Hub Join As Spoke Done

Click **Add** to join VPN.

The MPLS Link Attribute Editor - VRF and VPN window reappears, as shown in [Figure 8-49](#).

Figure 8-49 MPLS Service Request Editor

MPLS Link Attribute Editor - VRF and VPN

Attribute	Value				
VRF Information					
Export Map:					
Import Map:					
Maximum Routes:	(1-4294967295)				
Maximum Route Threshold *:	80 (1-100)				
VRF Description:					
Allocate new route distinguisher:	☐				
VRF And RD Overwrite	☐				
VPN Selection					
PE VPN Membership *:					
Select	Customer	VPN	Provider	CERC	Is Hub
☐	CUST-A	west-xVPN	PROVIDER-X	Default	☒

Add Delete

Note: * - Required Field

- Step 7 of 7 -

< Back Next > Finish Cancel

Step 25 Click **Finish**.

The MPLS Service Request Editor window reappears, as shown in [Figure 8-50](#).

Figure 8-50 MPLS Service Request Editor

MPLS Service Request Editor

Job ID: 7 SR ID: 8 SR State: REQUESTED

Policy: mpls-mvrfce-pe-ce

Description:

Showing 1-1 of 1 records

#	☐	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...

Rows per page: Go to page: of 1

Add Link Delete Link Save Cancel

Step 26 Enter the Service Request *description* and click **Save**. (mpls-mvrfce-pe-ce)

The MPLS Service Requests window reappears, as shown in [Figure 8-51](#).

Figure 8-51 Service Request

Service Requests

Show Services with matching of type

Showing 1-4 of 4 records

#	☐	Job ID	State	Type	Operation Type	Creator	Customer Name	Policy Name	Last Modified	Description
1.	☐	1	DEPLOYED	MPLS	ADD	admin	CUST-A	mpls-pe-ce	10/10/03 4:26 PM	ce2-sw1-sw2-pe2
2.	☐	2	REQUESTED	MPLS	ADD	admin	CUST-A	mpls-pe-ce	10/12/03 12:46 AM	mpls-pe-ce
3.	☐	6	REQUESTED	MPLS	ADD	admin	CUST-A	mpls-pe-noce	10/12/03 9:06 PM	mpls-pe-noce
4.	☐	7	REQUESTED	MPLS	ADD	admin	CUST-A	mpls-mvrfce-pe-ce	10/14/03 1:57 PM	

Rows per page: Go to page: of 1

Auto Refresh: ☒

The MPLS VPN MVRFCE PE-CE Service Request is in the Requested state and ready to deploy.

Creating a MVRFCE PE-NoCE Service Request

To create a MVRFCE PE-NoCE Service Request, follow these steps:

- Step 1** Log in to ISC.
- Step 2** Go to **Service Inventory > Inventory and Connection Manager > Service Requests**.
The Service Requests window appears, as shown in [Figure 8-52](#).

Figure 8-52 Service Requests

Service Requests

Show Services with matching of type

Showing 0 of 0 records

#	☒	Job ID	State	Type	Operation Type	Creator	Customer Name	Policy Name	Last Modified	Description
---	-------------------------------------	--------	-------	------	----------------	---------	---------------	-------------	---------------	-------------

Rows per page: Go to page: of 0

Auto Refresh: ☒

MPLS VPN

- Step 3** From the **Create** drop-down list, choose **MPLS VPN**.
The Select MPLS Policy window appears, as shown in [Figure 8-53](#).

Figure 8-53 *Select MPLS Policy*

Select MPLS Policy

Show MPLS policies with matching

Showing 1-5 of 5 records

#	Select	Policy Name	Policy Owner
1.	☐	mpls-mgmt	Customer - CUST-A
2.	☐	mpls-mvrfce-pe-ce	Customer - CUST-A
3.	☒	mpls-mvrfce-pe-noce	Customer - CUST-A
4.	☐	mpls-pe-ce	Customer - CUST-A
5.	☐	mpls-pe-noce	Customer - CUST-A

Rows per page:

101724

Step 4 Choose the MPLS Policy. (**mpls-mvrfce-pe-noce**)

Step 5 Click **OK**.

The MPLS Service Request Editor window appears, as shown in [Figure 8-54](#).

Figure 8-54 *MPLS Service Request Editor*

MPLS Service Request Editor

Job ID: _____ SR ID: _____ SR State: _____

Policy: mpls-mvrfce-pe-noce

Description:

Showing 0 of 0 records

#	☐	Link ID	CLE	CLE Interface	MVRFCE CE Facing Interface	MVRFCE	MVRFCE PE Facing Interface	PE	PE Interface	Link Attribute	Logical Link
---	--------------------------	---------	-----	---------------	----------------------------	--------	----------------------------	----	--------------	----------------	--------------

Rows per page:

101725

Step 6 Click **Add Link**.

The MPLS Service Request Editor window appears, as shown in [Figure 8-55](#).

Figure 8-55 MPLS Service Request Editor - Select MVRFCE

MPLS Service Request Editor

Job ID: SR ID: SR State:

Policy: mpls-mvrfce-pe-nocce

Description:

Showing 1-1 of 1 records

#	☐	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			Select MVRFCE		Select PE		Add	N/A

Rows per page: 10

Go to page: 1 of 1

101726

Step 7 Click **Select MVRFCE**.

The CPE for MPLS VPN Link window appears, as shown in [Figure 8-56](#).

Figure 8-56 CPE 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.	☒	mlce3.cisco.com	CUST-A	CUST-A-Site-mlce3	MULTI_VRF

Rows per page: 10

Go to page: 1 of 1

101727

Step 8 Choose the MVRFCE and click **Select**.

The MPLS Service Request Editor window appears, as shown in [Figure 8-57](#).

Step 9 Click **Select MVRFCE**.

Figure 8-57 MPLS Service Request Editor - MVRFCE CE Facing Interface

MPLS Service Request Editor

Job ID: SR ID: SR State:

Policy: mpls-mvrfce-pe-noc

Description:

Showing 1-1 of 1 records

#	☐	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		Select One	mlce3	Select One	Select PE		Add	N/A

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

Step 10 Choose the MVRFCE CE Facing Interface from the drop-down box.

Step 11 Choose the MVRFCE PE Facing Interface from the drop-down box.

The MPLS Service Request Editor window appears, as shown in [Figure 8-58](#).

Figure 8-58 MPLS Service Request Editor

MPLS Service Request Editor

Job ID: SR ID: SR State:

Policy: mpls-mvrfce-pe-noc

Description:

Showing 1-1 of 1 records

#	☐	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	Add	Details...

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

Step 12 Click **Add** in the Link Attribute cell.

The MPLS Link Attribute Editor - Interface window appears, as shown in [Figure 8-59](#).

Figure 8-59 MPLS Link Attribute Editor - Interface

MPLS Link Attribute Editor - Interface

Attribute	Value
PE Information	
PE	mlpe2
Interface Name:	FastEthernet0/0.
Interface Description:	
Shutdown Interface:	☐
Encapsulation:	DOT1Q v
VLAN ID *:	550 (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

101730

PE Information**Step 13 Encapsulation:** Choose the PE Encapsulation from the drop-down box. (DOT1Q)**Step 14 VLAN ID:** Enter the *PE VLAN ID*. (550)**MVRFCE PE Facing Information****Step 15 Encapsulation:** Choose the PE Encapsulation from the drop-down box. (DOT1Q))**Step 16** Click Next.The MPLS Link Attribute Editor - Interface window appears, as shown in [Figure 8-60](#).

Figure 8-60 MPLS Link Attribute Editor - Interface

MPLS Link Attribute Editor - Interface

Attribute	Value
MVRFCE CE Facing Information	
MVRFCE	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

MVRFCE CE Information

Step 17 Encapsulation: Choose the PE Encapsulation from the drop-down box. (**DOT1Q**)

Step 18 VLAN ID: Enter the *PE VLAN ID*. (**570**)

MVRFCE PE Facing Information

Step 19 Encapsulation: Choose the PE Encapsulation from the drop-down box. (**DOT1Q**)

Click **Next**.

The MPLS Link Attribute Editor - IP Address Scheme window appears, as shown in [Figure 8-61](#).

Figure 8-61 MPLS Link Attribute Editor - IP Address Scheme

MPLS Link Attribute Editor - IP Address Scheme

Attribute	Value
PE-MVRFCE Interface Address/Mask	
IP Numbering Scheme:	IP Numbered ▾
Automatically Assign IP Addresses:	☒
IP Address Pool:	Region Pool ▾

Note: * - Required Field

Step 20 Accept the defaults and click **Next**.

The MPLS Link Attribute Editor - IP Address Scheme window appears, as shown in [Figure 8-62](#).

Figure 8-62 MPLS Link Attribute Editor - IP Address Scheme

MPLS Link Attribute Editor - IP Address Scheme

Attribute	Value
MVRFCE-CE Interface Addresses/Mask	
IP Numbering Scheme:	IP Numbered ▾
Automatically Assign IP Addresses:	☒
IP Address Pool:	Region Pool ▾

Note: * - Required Field

101717

Accept the defaults and click **Next**.

The MPLS Link Attribute Editor - Routing Information window reappears, as shown in [Figure 8-63](#).

Figure 8-63 MPLS Link Attribute Editor - Routing Information

MPLS Link Attribute Editor - Routing Information

Attribute	Value
PE-MVRFCE Routing Information	
Routing Protocol	STATIC ▾
Give Only Default Routes to MVRFCE:	☐
Redistribute Connected (BGP only):	☐
Default Information Originate (BGP only):	☐
Advertised Routes for MVRFCE:	Edit
Routes To Reach Other Sites:	Edit

Note: * - Required Field

101718

Step 21 Accept the defaults and click **Next**.

The MPLS Link Attribute Editor - Routing Information window reappears, as shown in [Figure 8-64](#).

Figure 8-64 MPLS Link Attribute Editor - Routing Information

MPLS Link Attribute Editor - Routing Information

Attribute	Value
MVRFCE-CE Routing Information	
Routing Protocol	STATIC ▾
Give Only Default Routes to CE:	☐
Advertised Routes for CE:	Edit
Routes To Reach Other Sites:	Edit

Note: * - Required Field

101719

Accept the defaults and click **Next**.

The MPLS Link Attribute Editor - VRF and VPN window appears, as shown in [Figure 8-65](#).

Figure 8-65 MPLS Link Attribute Editor - VRF and VPN

MPLS Link Attribute Editor - VRF and VPN

Attribute	Value				
VRF Information					
Export Map:					
Import Map:					
Maximum Routes:	(1-4294967295)				
Maximum Route Threshold *:	80 (1-100)				
VRF Description:					
Allocate new route distinguisher:	☐				
VRF And RD Overwrite	☐				
VPN Selection					
PE VPN Membership *:					
Select	Customer	VPN	Provider	CERC	Is Hub
☐	CUST-A	west-xVPN	PROVIDER-X	Default	☒
Add Delete					

Note: * - Required Field

- Step 7 of 7 -

Step 22 Click **Add** to join VPN.

Step 23 Click **Finish**.

The MPLS Service Request Editor window reappears, as shown in [Figure 8-66](#).

Figure 8-66 MPLS Service Request Editor

MPLS Service Request Editor

Job ID: SR ID: SR State:

Policy: mpls-mvrfce-pe-noce

Description:

Showing 1-1 of 1 records

#	☐	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...

Rows per page:

Go to page: of 1

Step 24 Enter the Service Request *description* and click **Save**. (mpls-mvrfce-pe-noce)

The MPLS Service Requests window reappears, as shown in [Figure 8-67](#).

Figure 8-67 Service Request

Service Requests

Show Services with matching of type

Showing 1-5 of 5 records

#	☐	Job ID	State	Type	Operation Type	Creator	Customer Name	Policy Name	Last Modified	Description
1.	☐	1	DEPLOYED	MPLS	ADD	admin	CUST-A	mpls-pe-ce	10/10/03 4:26 PM	ce2-sw1-sw2-pe2
2.	☐	2	REQUESTED	MPLS	ADD	admin	CUST-A	mpls-pe-ce	10/12/03 12:46 AM	mpls-pe-ce
3.	☐	6	REQUESTED	MPLS	ADD	admin	CUST-A	mpls-pe-noce	10/12/03 9:06 PM	mpls-pe-noce
4.	☐	7	REQUESTED	MPLS	MODIFY	admin	CUST-A	mpls-mvrfce-pe-ce	10/14/03 3:38 PM	mpls-mvrfce-pe-ce
5.	☐	10	REQUESTED	MPLS	ADD	admin	CUST-A	mpls-mvrfce-pe-noce	10/14/03 6:26 PM	mpls-mvrfce-pe-noce

Rows per page:

Auto Refresh: ☒

101722

The MPLS VPN MVRFCE PE-NoCE Service Request is in the Requested state and ready to deploy.

