



## CHAPTER 5

# Setting Up Resources

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## Customers

A customer site is a set of IP systems with mutual IP connectivity between them without the use of a VPN. Each customer site belongs to exactly one customer. A customer site can contain one or more (for load balancing) edge device routers. This section describes how to create, edit, and delete customers. This section includes the following:

- [Accessing the Customers Window, page 5-1](#)
- [Creating a Customer, page 5-2](#)
- [Editing a Customer, page 5-3](#)
- [Deleting Customers, page 5-3](#)
- [Accessing the Customer Sites Window, page 5-4](#)
- [Creating a Customer Site, page 5-4](#)
- [Editing a Customer Site, page 5-5](#)
- [Deleting Customer Sites, page 5-6](#)
- [Customer Devices, page 5-6](#)
- [Create CPE Device, page 5-7](#)
- [Edit CPE Device, page 5-8](#)
- [Delete CPE Device, page 5-9](#)

## Accessing the Customers Window

The Customers feature is used to create, edit, and delete customers.

Choose **Service Design > Resources > Customers** to access the Customers window shown in [Figure 5-1](#).

**Figure 5-1 Customers Window**

The screenshot shows the 'Customers' window. At the top, there is a search bar labeled 'Show Customers with Customer Name matching' with a search icon and a 'Find' button. Below this is a table with columns '#', 'Customer Name', and a checkbox. The table contains three rows: '1 Customer1', '2 Customer2', and '3 Customer3'. To the right of the table, it says 'Showing 1 - 3 of 3 records'. Below the table is a 'Rows per page' dropdown set to '10'. At the bottom right, there are navigation buttons: '<<', '<', 'Page 1 of 1', '>', '>>', and three action buttons: 'Create', 'Edit', and 'Delete'.

The Customers window contains the following:

- **Customer Name**—Lists the names of customers. You can sort the list by customer name.

From the Customers window, you can create, edit, or delete customers using the following buttons:

- **Create**—Click to create new customers.
- **Edit**—Click to edit selected customer (select by checking the corresponding box). Enabled only if a single customer is selected.
- **Delete**—Click to delete selected customer (select customer by checking the corresponding box). Enabled only if one or more customers are selected.

## Creating a Customer

From the Create Customer window, you can create different customers.

To create a customer, follow these steps:

**Step 1** Choose **Service Design > Resources > Customers**.

**Step 2** Click the **Create** button.

The Create Customer window appears, as shown in [Figure 5-2](#).

**Figure 5-2 Create Customer Window**

The screenshot shows the 'Create New Customer' window. It has a title bar 'Create New Customer'. Below the title bar is a section titled 'New Customer'. This section contains three input fields: 'Name \*' (with an asterisk indicating a required field), 'Customer Abbreviation:', and 'Contact Information:' (which is a large text area). At the bottom left, there is a checkbox labeled 'Site of Origin Enabled:' with a help icon. At the bottom right, there are 'Save' and 'Cancel' buttons. A note at the bottom left says 'Note: \* - Required Field'.

The Create Customer window contains the following fields:

- **Name** (required)—Must begin with a letter. Can contain letters, numbers, and these punctuation characters: period, underscore, and dash. Limited to 80 characters.
- **Customer Abbreviation**—This field is used only for L2VPN and L2TPv3 Frame Relay service requests. The entry in this field is used to construct a connect name. When this field is left blank, DLCI switching is the transport mode used. Limited to 9 characters.
- **Contact Information** (optional)—Any pertinent information about the customer that could be helpful to service provider operators. Limited to 256 characters.
- **Site of Origin Enabled** (optional)—This check box appears only when you have MPLS permissions. Check this check box to enable the site of origin.

- Step 3** Enter the name and information for the Customer that you are creating. Check the **Site of Origin Enabled** check box if you want this enabled.
- Step 4** Click **Cancel** if you do not want to save this information, and you will proceed to the previous window. Otherwise, click **Save**. The changes are then saved and the Customers window reappears.
- 

## Editing a Customer

From the Edit Customer window, you can modify the fields that have been specified for a particular customer.

To access the Edit Customer window, follow these steps:

- 
- Step 1** Choose **Service Design > Resources > Customers**.
- Step 2** Select a single customer to modify by checking the check box to the left of the Customer Name.
- Step 3** Click the **Edit** button. This button is only enabled if a customer is selected.  
The Edit Customer window appears.
- Step 4** Enter the changes you want to make to the selected customer.
- Step 5** Click **Cancel** if you do not want to save this information, and you will proceed to the previous window. Otherwise, click **Save**. The changes are then saved and the Customers window reappears.
- 

## Deleting Customers

From the Delete window, you can remove selected customers from the database.

To access the Delete window, follow these steps:

- 
- Step 1** Choose **Service Design > Resources > Customers**.
- Step 2** Select one or more customers to delete by checking the check box to the left of the Customer Name.
- Step 3** Click the **Delete** button. This button is only enabled if one or more customers are selected.  
The Confirm Delete window appears.
- Step 4** Click **Cancel** if you do not want to save this information, and you will proceed to the previous window.

Otherwise, click **Delete** to confirm that you want to delete the customer(s) listed. The Customers window reappears with the specified customer(s) deleted.

## Accessing the Customer Sites Window

The Customer Sites window feature is used to create, edit, and delete customer sites.

Choose **Inventory > Resources > Customer Sites**.

The Customer Sites window appears as shown below.

**Figure 5-3** Customer Sites Window

Customer Sites

Show Sites with Site Name matching \* Find

Showing 1 - 4 of 4 records

#	<input type="checkbox"/> Site Name	Customer Name
1	<input type="checkbox"/> site1	Customer1
2	<input type="checkbox"/> site2	Customer1
3	<input type="checkbox"/> site3	Customer1
4	<input type="checkbox"/> site4	Customer1

Rows per page: 10 Page 1 of 1

Create Edit Delete

The Customer Sites window contains the following:

- **Site Name**—Lists the names of sites. The first character must be a letter. Can contain letters, numbers, and these punctuation characters: period, underscore, and dash. Limit: 80 characters. You can sort the list by site name.
- **Customer Name**—Lists the names of customer. The first character must be a letter. Can contain letters, numbers, and these punctuation characters: period, underscore, and dash. Limit: 80 characters. You can sort the list by customer name.

From the Customer Sites window, you can create, edit, or delete customer sites using the following buttons:

- **Create**—Click to create new customer sites. Enabled only if no customer site is selected.
- **Edit**—Click to edit selected customer sites (select by checking the corresponding box). Enabled only if a single customer site is selected.
- **Delete**—Click to delete selected customer site(s) (select by checking the corresponding box(es)). Enabled only if one or more customer sites are selected.

## Creating a Customer Site

From the Create Customer Sites window, you can create different customer sites.

To create a customer sites, follow these steps:

- Step 1** Choose **Inventory > Resources > Customer Sites**.
- Step 2** Click the **Create** button.

The Create New Customer Sites window appears, as shown in [Figure 5-4](#).

**Figure 5-4** Create New Customer Sites Window

The Create New Customer window contains the following fields:

- **Name** (required)—Must begin with a letter. Can contain letters, numbers, and these punctuation characters: period, underscore, and dash. Limited to 80 characters.
- **Customer** (required)—Enter the customer name. The first character must be a letter. Can contain letters, numbers, and these punctuation characters: period, underscore, and dash. Limit: 80 characters.
- **Site Information** (optional)—Any pertinent information about the site that could be helpful to service provider operators. Limited to 256 characters.

- Step 3** Enter the name and information for the Customer that you are creating. To enter the customer name follow these steps:
- Click the **Select** button next to the Customer field.  
A list of customer names appears.
  - Click the radio button next to customer name and then **Select**.
- Step 4** Enter the Site Information.
- Step 5** Click **Cancel** if you do not want to save this information, and you will proceed to the previous window. Otherwise, click **Save**. The changes are then saved and the Customer Site window reappears.

## Editing a Customer Site

From the Edit Customer Sites window, you can modify the fields that have been specified for a particular customer sites.

To access the Edit Customer Sites window, follow these steps:

- Step 1** Choose **Inventory > Resources > Customer Sites**.
- Step 2** Select a single site name to modify by checking the check box to the left of the Site Name.
- Step 3** Click the **Edit** button. This button is only enabled if a customer is selected.
- The Edit Customer window appears.

- Step 4** Enter the changes you want to make to the selected customer site.
- Step 5** Click **Cancel** if you do not want to save this information, and you will proceed to the previous window. Otherwise, click **Save**. The changes are then saved and the Customer Site window reappears.

## Deleting Customer Sites

From the Delete window, you can remove selected customer sites from the database.

To access the Delete window, follow these steps:

- Step 1** Choose **Inventory > Resources > Customer Sites**.
- Step 2** Select one or more customer sites to delete by checking the check box to the left of the Site Name.
- Step 3** Click the **Delete** button. This button is only enabled if one or more customer sites are selected. The Confirm Delete window appears.
- Step 4** Click **Cancel** if you do not want to delete this information, and you will proceed to the previous window. Otherwise, click **Delete** to confirm that you want to delete the customer site(s) listed. The Customer Sites window reappears with the specified customer site(s) deleted.

## Customer Devices

The CPE feature provides a list of CPEs that have been associated with a site through the CPE editor or Inventory Manager.

Choose **Inventory > Resources > Customer Devices**. The CPE Devices window appears, as shown in [Figure 5-5](#).

**Figure 5-5** CPE Devices Window

#	Device Name	Customer Name	Site Name	Management Type	Service Request Details
1	ce1	Customer1	site1	Managed	MPLS VPLS L2VPN
2	ce2	Customer1	site2	Managed	MPLS VPLS L2VPN
3	ce3	Customer1	site3	Managed	MPLS
4	ce4	Customer1	site4	Managed	MPLS
5	ce5	Customer1	site1	Multi-VRF	MPLS
6	ce6	Customer1	site3	Multi-VRF	MPLS
7	ce7	Customer1	site4	Multi-VRF	MPLS
8	ce8	Customer1	site3	Multi-VRF	MPLS
9	ce9	Customer1	site3	Multi-VRF	MPLS
10	ce10	Customer1	site3	Multi-VRF	MPLS

The CPE Devices window contains the following:

- **Device Name**—Lists the names of devices. The first character must be a letter. Can contain letters, numbers, and these punctuation characters: period, underscore, and dash. Limit: 80 characters. You can sort the list by device name.

- **Customer Name**—Lists the names of customer. The first character must be a letter. Can contain letters, numbers, and these punctuation characters: period, underscore, and dash. Limit: 80 characters. You can sort the list by customer name.
  - **Site Name**—Lists the names of sites. The first character must be a letter. Can contain letters, numbers, and these punctuation characters: period, underscore, and dash. Limit: 80 characters. You can sort the list by site name.
  - **Management Type**—When associating a CE with a customer site, you can select Managed or Unmanaged. Other choices are available (see below), but they should not be confused with this primary choice.
    - **Managed**—A managed CE can be provisioned directly by the provider using Prime Fulfillment. The CE must be reachable from an Prime Fulfillment server.
    - **Unmanaged**—An unmanaged CE cannot be provisioned directly by the provider. If Unmanaged is selected, the provider can use Prime Fulfillment to generate a configuration, and then send the configuration to the customer for placement on the CE.
    - **Managed - Management LAN**—A managed Management LAN or Management CE (MCE) is configured like a managed CE router, but it resides in the provider space. Normally, an MCE acts as the network operations center (NOC) gateway router.
    - **Unmanaged - Management LAN**—An unmanaged Management LAN or MCE is configured like an unmanaged CE router, but it resides in the provider space. Normally, an MCE acts as the network operations center (NOC) gateway router.
    - **Directly Connected**—In most cases, the CE is connected to a PE router. In this case, the CE is connected to a workstation or other device.
    - **Directly Connected Management Host**—In most cases, the CE is connected to a PE router. In this case, the CE is connected to a workstation or other device, on which Prime Fulfillment resides.
    - **Multi-VRF**—A multi-VRF CE (MVRFCE) is owned by the customer, but resides in the provider space. It is used to offload traffic from the PE.
    - **Unmanaged Multi-VRF**—An unmanaged multi-VRF CE is provisioned like an unmanaged CE (configurations are not uploaded or downloaded to the device by the provider). It is owned by the customer and resides in the provider space.
- 

## Create CPE Device

From the Create Customer Devices window, you can create different CPE devices.

To create a CPE device, follow these steps:

- 
- Step 1** Choose **Inventory > Resources > Customer Devices**.
- Step 2** Click **Create** to create new CPE devices. Enabled only if no customer site is selected.
- The resulting window is shown in [Figure 5-6](#).

**Figure 5-6 Create New CPE Device Window**

**Step 3** Click **Select** for the required **Device Name** and **Site Name**.

For each, you receive a list of the devices and sites, respectively, from which you can choose one in each window and then click **Select**. Click **Cancel** if you do not want to save this information, and you will proceed to the previous window.



**Note** The Customer Name is displayed only if the customer site is created.

**Step 4** The drop-down window for **Management Type** allows you choose the management type of the CPE device you are creating.

**Step 5** Click **Cancel** if you do not want to save this information, and you will proceed to the previous window. Otherwise, click **Save**. The changes are saved and the CPE Device window reappears.

## Edit CPE Device

From the Edit Customer Device window, you can modify the fields that have specified for a particular CPE device.

To edit a CPE device, follow these steps:

**Step 1** Choose **Inventory > Resources > Customer Sites**.

**Step 2** Select a single device name to modify by checking the check box to the left of the Device Name.

**Step 3** Click the **Edit** button. This button is only enabled if a device name is selected.

The Edit Customer window appears, as shown in [Figure 5-7](#).



**Figure 5-7** Edit CPE Device Window

Edit Customer Device

**Edit CPE Device**

Device Name: ce1

Site Name: site1

Customer Name: Customer1

Management Type: Managed

Pre-shared Keys : Edit

IPsec High Availability Options: ☒ None ☐ Normal Failover ☐ Stateful Failover

IPsec Public IP Address:

IP Address Ranges: Edit 192.168.1.2/24

Show Interfaces with: Name matching \* Find

Showing 1 - 10 of 49 records

#	Interface Name	IPv4 Address	IPv6 Address	IP Address Type	Encapsulation	Description
1	FastEthernet1			STATIC	DEFAULT	
2	ATM0/0/0/0			STATIC	DEFAULT	
3	Serial3/1/1			STATIC	UNKNOWN	
4	GigabitEthernet1/0/1			UNKNOWN	DOT1Q	
5	FastEthernet1/0/1	10.76.92.122/25		STATIC	UNKNOWN	
6	GigabitEthernet1/1/1			UNKNOWN	UNKNOWN	
7	FastEthernet1/0/3			UNKNOWN	DOT1Q	mytest
8	GigabitEthernet1/1/2			UNKNOWN	UNKNOWN	
9	FastEthernet1/0/4			UNKNOWN	UNKNOWN	
10	ATM0/0/0/1			STATIC	UNKNOWN	

Rows per page: 10

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Save Cancel

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- Step 4** Enter the changes you want to make to the selected CPE device.
- Step 5** Click **Cancel** if you do not want to save this information, and you will proceed to the previous window. Otherwise, click **Save**. The changes are then saved and the Customer Device window reappears.

## Delete CPE Device

From the Delete window, you can remove selected customer device from the database.

To access the Delete window, follow these steps:

- Step 1** Choose **Inventory > Resources > Customer Devices**.
- Step 2** Select one or more device name to delete by checking the check box to the left of the Device Name.
- Step 3** Click the **Delete** button. This button is only enabled if one or more device names are selected. The Confirm Delete window appears.
- Step 4** Click **Cancel** if you do not want to save this information, and you will proceed to the previous window. Otherwise, click **Delete** to confirm that you want to delete the device name(s) listed. The Customer Devices window reappears with the specified device name(s) deleted.

## Providers

This section describes how to create and manage providers. This section includes the following:

- [Accessing the Providers Window, page 5-10](#)
- [Creating a Provider, page 5-10](#)

- [Editing a Provider, page 5-11](#)
- [Deleting Providers, page 5-12](#)
- [Accessing the Provider Regions, page 5-12](#)
- [Accessing the PE Devices, page 5-14](#)
- [Accessing the Access Domains, page 5-17](#)

## Accessing the Providers Window

The Providers feature is used to create and manage providers.

Choose **Service Design > Resources > Providers** to access the Providers window shown in [Figure 5-8](#).

**Figure 5-8** Providers Window

Providers

Show Providers with Provider Name matching

Showing 1 - 4 of 4 records

#	<input type="checkbox"/> Provider	Provider BGP AS
1	<input type="checkbox"/> Provider1	22
2	<input type="checkbox"/> Provider2	33
3	<input type="checkbox"/> Provider3	44
4	<input type="checkbox"/> Provider4	55

Rows per page:    Page  of 1

The Providers window contains the following:

- **Provider Name**—Lists the names of providers. You can sort the list by provider name.
- **Provider BGP AS**—The Unique number assigned to each BGP autonomous system. Range: 1 to 65535.

From the Providers window, you can create, edit, or delete providers using the following buttons:

- **Create**—Click to create new providers. Enabled only if no customer is selected.
- **Edit**—Click to edit a selected provider (check the corresponding box). Enabled only if a single provider is selected.
- **Delete**—Click to delete selected provider(s) (check the corresponding box(es)). Enabled only if one or more providers are selected.

## Creating a Provider

From the Create Provider window, you can create different providers.

To create a provider, follow these steps:

- 
- Step 1** Choose **Service Design > Resources > Providers**.
- Step 2** Click the **Create** button.

The Create Provider window appears, as shown in [Figure 5-9](#).

**Figure 5-9** Create Provider Window

The Create Provider window contains the following fields:

- **Name** (required)—Must begin with a letter. Can contain letters, numbers, and these punctuation characters: period, underscore, and dash. Limited to 80 characters.
- **BGP AS** (required)—Each BGP autonomous system is assigned a unique 16-bit number by the same central authority that assigns IP network numbers. Range: 1 to 65535.
- **Contact Information** (optional)—Any pertinent information about the provider that could be helpful to service provider operators. Limited to 256 characters.

**Step 3** Enter the name, BGP AS, and any contact information for the Provider that you are creating.

**Step 4** Click **Save**.

The Providers window reappears with the new provider listed.

## Editing a Provider

From the Edit Provider window, you can modify the fields that have been specified for a particular provider.

To access the Edit Provider window, follow these steps:

**Step 1** Choose **Service Design > Resources > Providers**.

**Step 2** Select a single provider to modify by checking the check box to the left of the Provider Name.

**Step 3** Click the **Edit** button. This button is only enabled if a customer is selected.

The Edit Provider window appears.

**Step 4** Enter the changes you want to make to the selected provider.

**Step 5** Click **Save**.

The changes are saved and the Providers window reappears.

## Deleting Providers

From the Delete window, you can remove selected providers from the database.

To access the Delete window, follow these steps:

- Step 1** Choose **Service Design > Resources > Providers**.
- Step 2** Select provider(s) to delete by checking the check box to the left of the Provider Name.
- Step 3** Click the **Delete** button. This button is only enabled if one or more Providers are selected.  
The Confirm Delete window appears.
- Step 4** Click the **Delete** button to confirm that you want to delete the provider(s) listed.  
The Providers window reappears with the specified provider(s) deleted.

## Accessing the Provider Regions

A Provider Region is considered to be a group of provider edge routers (PEs) within a single BGP autonomous system. The primary objective for defining Provider Regions is to allow a provider to employ unique IP address pools in large Regions, such as Europe, Asia Pacific, and so forth.

Choose **Inventory > Resources > Provider Regions**.

The Provider Regions window appears, as shown in [Figure 5-10](#).

**Figure 5-10** Provider Regions Window

Provider Regions

Show Regions with PE Region Name matching \*

Showing 1 - 4 of 4 records

#	PE Region Name	Provider
1	Region1	Provider1
2	Region2	Provider1
3	Region3	Provider1
4	Region4	Provider1

Rows per page: 10

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Create Edit Delete

The Provider Regions window contains the following:

- **PE Region Name**—Lists the names of regions. Must begin with a letter. Can contain letters, numbers, and these punctuation characters: period, underscore, and dash. Limited to 80 characters. You can sort the list by region name.
- **Provider Name**—Lists the names of providers. Must begin with a letter. Can contain letters, numbers, and these punctuation characters: period, underscore, and dash. Limited to 80 characters. You can sort the list by provider name.

From the Provider Regions window, you can create, edit, or delete provider regions using the following buttons:

- **Create**—Click to create new provider regions. Enabled only if no customer is selected.
- **Edit**—Click to edit selected provider regions (check the corresponding box). Enabled only if a single provider region is selected.
- **Delete**—Click to delete selected provider regions (check the corresponding box(es)). Enabled only if one or more provider regions are selected.

## Creating a Provider Region

From the Create Provider Region window, you can create different PE regions.

To create a provider region, follow these steps:

**Step 1** Choose **Inventory > Resources > Provider Regions**.

**Step 2** Click the **Create** button.

The Create Provider Regions window appears, as shown in [Figure 5-4](#).

**Figure 5-11** *Create Provider Regions Window*

The Create Customer window contains the following fields:

- **Name** (required)—Must begin with a letter. Can contain letters, numbers, and these punctuation characters: period, underscore, and dash. Limited to 80 characters.
- **Provider** (required)—Enter the provider name.

**Step 3** Enter the name and information for the Provider that you are creating. To enter the provider name follow these steps:

- Click the **Select** button next to the Provider field.  
A list of provider names appears.
- Click the radio button next to provider name and then **Select**.

**Step 4** Click **Cancel** if you do not want to save this information, and you will proceed to the previous window. Otherwise, click **Save**. The changes are then saved and the Customer Site window reappears.

## Editing a Provider Regions

From the Edit Provider Regions window, you can modify the fields that have been specified for a particular provider region.

To access the Edit Provider Regions window, follow these steps:

- 
- Step 1** Choose **Inventory > Resources > Provider Regions**.
  - Step 2** Select a single site name to modify by checking the check box to the left of the PE Region Name.
  - Step 3** Click the **Edit** button. This button is only enabled if a PE region name is selected.  
The Edit Provider Region window appears.
  - Step 4** Enter the changes you want to make to the selected provider region.
  - Step 5** Click **Cancel** if you do not want to save this information, and you will proceed to the previous window. Otherwise, click **Save**. The changes are then saved and the Provider Region window reappears.
- 

## Deleting Provider Regions

From the Delete window, you can remove selected provider regions from the database.

To access the Delete window, follow these steps:

- 
- Step 1** Choose **Inventory > Resources > Provider Regions**.
  - Step 2** Select one or more region to delete by checking the check box to the left of the PE Region Name.
  - Step 3** Click the **Delete** button. This button is only enabled if one or more PE region name are selected.  
The Confirm Delete window appears.
  - Step 4** Click **Cancel** if you do not want to save this information, and you will proceed to the previous window. Otherwise, click **Delete** to confirm that you want to delete the region name(s) listed. The Provider Regions window reappears with the specified PE region name(s) deleted.
- 

## Accessing the PE Devices

The PE Devices feature provides a list of provider edge routers (PEs) that have been associated with the region, either through the PE editor or Inventory Manager.

Choose **Inventory > Resources > Provider Devices**.

The PE Devices window appears, as shown in [Figure 5-12](#)

**Figure 5-12 PE Devices Window**

Provider Devices

Show PEs with  matching

Showing 1 - 10 of 26 records

#	<input type="checkbox"/>	Device Name	Provider	PE Region Name	Role Type	Service Request Details
1	<input type="checkbox"/>	pe1	Provider1	Region1	N-PE	MPLS VPLS L2VPN EVC
2	<input type="checkbox"/>	pe2	Provider1	Region1	N-PE	MPLS VPLS L2VPN EVC
3	<input type="checkbox"/>	pe3	Provider1	Region2	N-PE	MPLS
4	<input type="checkbox"/>	pe4	Provider1	Region3	N-PE	MPLS
5	<input type="checkbox"/>	pe5	Provider1	Region1	U-PE	
6	<input type="checkbox"/>	pe6	Provider1	Region2	U-PE	MPLS
7	<input type="checkbox"/>	pe7	Provider1	Region3	U-PE	L2VPN
8	<input type="checkbox"/>	pe8	Provider1	Region1	PE-AGG	
9	<input type="checkbox"/>	pe9	Provider1	Region2	PE-AGG	
10	<input type="checkbox"/>	pe10	Provider1	Region3	PE-AGG	

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The PE Devices window contains the following:

- **Device Name**—Lists the names of devices. The first character must be a letter. Can contain letters, numbers, and these punctuation characters: period, underscore, and dash. Limit: 80 characters. You can sort the list by device name.
- **Provider Name**—Lists the names of providers. Must begin with a letter. Can contain letters, numbers, and these punctuation characters: period, underscore, and dash. Limited to 80 characters. You can sort the list by provider name.
- **PE Region Name**—Lists the names of regions. Must begin with a letter. Can contain letters, numbers, and these punctuation characters: period, underscore, and dash. Limited to 80 characters. You can sort the list by region name.
- **Role Type**—Choices include: N-PE, U-PE, P, PE-AGG.

From the PE Devices window, you can create, edit, or delete providers using the following buttons:

- **Create**—Click to create new PE device. Enabled only if no PE device is selected.
- **Edit**—Click to edit selected PE device (check the corresponding box). Enabled only if a single PE device is selected.



**Note** Next to the PE Role Type, for both the Create and Edit selections, is a 6VPE check box. During the configuration collect operation, the device is detected as 6VPE if it is feature compatible.

- **Delete**—Click to delete selected PE device(s) (check the corresponding box(es)). Enabled only if one or more PE devices are selected.

## Creating a Provider Devices

From the Create Provider Device window, you can create different PE regions.

To create a provider region, follow these steps:

**Step 1** Choose **Inventory > Resources > Provider Devices**.

**Step 2** Click the **Create** button.

The Create New Provider Devices window appears, as shown in [Figure 5-13](#).

**Figure 5-13** Create New Provider Devices Window

- Step 3** To enter the Device Name follow these steps:
- Click the **Select** button next to the Device Name field.  
A list of Device Name window appears.
  - Click the radio button next to device name and then **Select**.
- Step 4** To enter the PE Region Name follow these steps:
- Click the **Select** button next to the PE Region Name field.  
A list of Region Name window appears.
  - Click the radio button next to device name and then **Select**.
- Step 5** Select the PE Role Type from drop-down list. The options are N-PE, U-PE, P, and PE-AGG.
- Step 6** Check the check box next to the 6VPE.
- Step 7** Click **Cancel** if you do not want to save this information, and you will proceed to the previous window. Otherwise, click **Save**. The changes are then saved and the Provider Device window reappears.

## Editing a Provider Devices

From the Edit Provider Devices window, you can modify the fields that have been specified for a particular provider region.

To access the Edit Provider Devices window, follow these steps:

- Step 1** Choose **Inventory > Resources > Provider Devices**.
- Step 2** Select a single site name to modify by checking the check box to the left of the Device Name.
- Step 3** Click the **Edit** button. This button is only enabled if a PE Device name is selected.  
The Edit Provider Region window appears.
- Step 4** Enter the changes you want to make to the selected PE device name.
- Step 5** Click **Cancel** if you do not want to save this information, and you will proceed to the previous window. Otherwise, click **Save**. The changes are then saved and the Provider Device window reappears.

## Deleting Provider Devices

From the Delete window, you can remove selected provider device from the database.

To access the Delete window, follow these steps:



- 
- Step 1** Choose **Inventory > Resources > Provider Devices**.
- Step 2** Select one or more region to delete by checking the check box to the left of the Device Name.
- Step 3** Click the **Delete** button. This button is only enabled if one or more PE Device name are selected. The Confirm Delete window appears.
- Step 4** Click **Cancel** if you do not want to save this information, and you will proceed to the previous window. Otherwise, click **Delete** to confirm that you want to delete the provider device(s) listed. The Provider Devices window reappears with the specified provider device(s) deleted.
- 

## Accessing the Access Domains

To access the Access Domains window:

Choose **Inventory > Resources > Access Domains**.

The Access Domains window appears as shown below.

**Figure 5-14** Access Domains Window

Access Domains

Show Access Domains with Access Domain Name matching \* Find

Showing 1 - 3 of 3 records

#	<input type="checkbox"/> Access Domain Name	<input type="checkbox"/> Provider
1	<input type="checkbox"/> ad1	Provider1
2	<input type="checkbox"/> ad2	Provider1
3	<input type="checkbox"/> ad3	Provider1

Rows per page: 10

Page 1 of 1

Create Edit Delete

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The Access Domains window contains the following:

- **Access Domain Name**—Lists the names of access domain. The first character must be a letter. Can contain letters, numbers, and these punctuation characters: period, underscore, and dash. Limit: 80 characters. You can sort the list by access domain name.
- **Provider Name**—Lists the names of providers. Must begin with a letter. Can contain letters, numbers, and these punctuation characters: period, underscore, and dash. Limited to 80 characters. You can sort the list by provider name.

From the Access Domains window, you can create, edit, or delete access domains using the following buttons:

- **Create**—Click to create new access domain. Enabled only if no access domain is selected.
  - **Edit**—Click to edit a selected access domain (check the corresponding box). Enabled only if a single access domain is selected.
  - **Delete**—Click to delete selected access domain(s) (check the corresponding box(es)). Enabled only if one or more access domains are selected.
- 

## Creating a Access Domains

From the Create Access Domains window, you can create different access domain.

To create a access domain, follow these steps:

**Step 1** Choose **Inventory > Resources > Access Domains**.

**Step 2** Click the **Create** button.

The Create New Access Domains window appears, as shown in [Figure 5-15](#).

**Figure 5-15** *Create New Access Domains Window*

Create New Access Domains

**Access Domain Information**

Name \*

Provider

PEs \*

**Reserved VLANs**

Reserved VLANs:

#	Start	Size	Management VLAN
Showing 0 of 0 records			

Rows per page: 10

Page 1 of 1

Note: \* - Required Field

**Step 3** Enter the access domain name. This is a required field.

**Step 4** To enter the Provider follow these steps (this is a required field):

a. Click the **Select** button next to the Provider field.

A list of Provider Name window appears.

b. Click the radio button next to provider name and then **Select**.

**Step 5** Enter the PEs information (required field). This information about the PE will be helpful to the access domain operators. Limited to 256 characters.

**Step 6** Enter the Reserved VLAN information (this is optional).

**Step 7** Click **Cancel** if you do not want to save this information, and you will proceed to the previous window. Otherwise, click **Save**. The changes are then saved and the Access Domains window reappears.

## Editing a Access Domains

From the Edit Access Domains window, you can modify the fields that have been specified for a particular provider region.

To access the Edit Access Domains window, follow these steps:

**Step 1** Choose **Inventory > Resources > Access Domains**.

**Step 2** Select a single access domain to modify by checking the check box to the left of the Access Domains Name.

**Step 3** Click the **Edit** button. This button is only enabled if a access domain name is selected.

The Edit Access Domains window appears.

**Step 4** Enter the changes you want to make to the selected access domain.

- Step 5** Click **Cancel** if you do not want to save this information, and you will proceed to the previous window. Otherwise, click **Save**. The changes are then saved and the Access Domains window reappears.
- 

## Deleting Access Domains

From the Delete window, you can remove selected access domain from the database.

To access the Delete window, follow these steps:

- 
- Step 1** Choose **Inventory > Resources > Access Domains**.
- Step 2** Select one or more access domain to delete by checking the check box to the left of the Access domain Names.
- Step 3** Click the **Delete** button. This button is only enabled if one or more access domains are selected. The Confirm Delete window appears.
- Step 4** Click **Cancel** if you do not want to save this information, and you will proceed to the previous window. Otherwise, click **Delete** to confirm that you want to delete the access domain(s) listed. The Access Domains window reappears with the specified access domain(s) deleted.
- 

## Resource Pools

Cisco IP Solution Center enables multiple pools to be defined and used during operations. The following resource pools are available:

- **IP address pool:** The IP address pool can be defined and assigned to regions or VPNs. This feature gives the service operator the flexibility to manage the allocation of all IP addresses in the network.
- **Multicast pool:** The Multicast pool is used for Multicast MPLS VPNs.
- **Route Target (RT) pool:** A route target is the MPLS mechanism that informs PEs as to which routes should be inserted into the appropriate VRFs. Every VPN route is tagged with one or more route targets when it is exported from a VRF and offered to other VRFs. The route target can be considered a VPN identifier in MPLS VPN architecture. RTs are a 64-bit number.
- **Route Distinguisher (RD) pool:** The IP subnets advertised by the CE routers to the PE routers are augmented with a 64-bit prefix called a route distinguisher (RD) to make them unique. The resulting 96-bit addresses are then exchanged between the PEs, using a special address family of Multiprotocol BGP (referred to as MP-BGP). The RD pool is a pool of 64-bit RD values that Cisco IP Solution Center uses to make sure the IP addresses in the network are unique.
- **Site of origin pool:** The pool of values for the site-of-origin (SOO) attribute. The site-of-origin attribute prevents routing loops when a site is multihomed to the MPLS VPN backbone. This is achieved by identifying the site from which the route was learned, based on its SOO value, so that it is not readvertised back to that site from a PE in the MPLS VPN network.
- **VC ID pool:** VC ID pools are defined with a starting value and a size of the VC ID pool. (VC ID is a 32-bit unique identifier that identifies a circuit/port.) A given VC ID pool is not attached to any Inventory object. During the deployment of an Ethernet Service (EWS, ERS for example), VC ID is auto-allocated from the VC ID pool.

- **VLAN ID pool:** VLAN ID pools are defined with a starting value and a size of the VLAN pool. A given VLAN ID pool can be attached to an Access Domain. During the deployment an Ethernet Service (EWS, ERS for example), VLAN ID can be auto-allocated from the Access Domain's VLAN pools. This gives the Service Provider a tighter control of VLAN ID allocation.

All these resources, that are made available to the service provider, enable the automation of service deployment.

This section describes how you can create and manage pools for various types of resources. This section includes the following:

- [Accessing the Resource Pools Window, page 5-20](#)
- [Creating an IP Address Pool, page 5-21](#)
- [Creating a Multicast Pool, page 5-22](#)
- [Creating a Route Distinguisher and Route Target Pool, page 5-23](#)
- [Creating a Site of Origin Pool, page 5-24](#)
- [Creating a VC ID Pool, page 5-26](#)
- [Creating a VLAN Pool, page 5-26](#)
- [Deleting Resource Pools, page 5-27](#)

## Accessing the Resource Pools Window

The Resource Pools feature is used to create and manage various types of resource pools.

Choose **Service Design > Resources > Resource Pools** to access the Resource Pools window shown in [Figure 5-16](#).

**Figure 5-16** Resource Pools Window

The screenshot shows the 'Resource Pools' window. At the top, there is a 'Pool Type' dropdown menu set to 'IPv4 Address'. Below it is a search bar with the text 'Show IP Address Pools with Pool Name matching \*' and a 'Find' button. A status bar indicates 'Showing 1 - 6 of 6 records'. The main area contains a table with the following columns: #, Start, Pool Mask, Pool Size, Status, Type, and Pool Name. The table lists six IP address pools. At the bottom, there is a 'Rows per page' dropdown set to 10, and 'Create' and 'Delete' buttons.

#	Start	Pool Mask	Pool Size	Status	Type	Pool Name
1	<input type="checkbox"/> 172.17.0.0	30	9	Allocated	Region	Provider1.Region1
2	<input type="checkbox"/> 172.17.0.36	30	16375	Available	Region	Provider1.Region1
3	<input type="checkbox"/> 172.18.0.0	30	16384	Available	Region	Provider1.Region2
4	<input type="checkbox"/> 172.19.0.0	30	7	Allocated	Region	Provider1.Region3
5	<input type="checkbox"/> 172.19.0.28	30	16377	Available	Region	Provider1.Region3
6	<input type="checkbox"/> 172.20.0.0	30	16384	Available	Region	Provider1.Region4

From the Resource Pools window, you have access to the following buttons:

- **Pool Type**—Choices include: IPV4 Address, Multicast, Route Distinguisher, Route Target, Site of Origin, VC ID, and VLAN. The fields displayed in the Resource Pools window vary depending on the pool type selected.
- **Create**—Click to create new resource pools. Enabled only if no resource pool is selected.
- **Delete**—Click to delete selected resource pools (select by checking the corresponding box(es)). Enabled only if one or more resource pools are selected.

## Creating an IP Address Pool

Prime Fulfillment uses IP address pools to automatically assign IP addresses to PEs and CEs. Each Region has an IP address pool to use for IP numbered addresses (/30 pools) and a separate IP address pool for IP unnumbered addresses (/32 loopback address pools).

Within a VPN or extranet, all IP addresses must be unique. Customer IP addresses must not overlap with the provider's IP addresses. Overlapping IP addresses are only possible when two devices cannot see each other—that is, when they are in isolated VPNs.

From the Create IP Address Pool window, you can create IP address pools.

To create an IP address pool, follow these steps:

- Step 1** Choose **Service Design > Resources > Resource Pools**.
- Step 2** Select **IPv4 Address** from the **Pool Type** in the upper left of the Resource Pools window.
- Step 3** Click the **Create** button.

The Create New IP Address Resource Pool window appears, as shown in [Figure 5-17](#).

**Figure 5-17** Create New IP Address Resource Pool Window

The Create New IP Address Resource Pool window contains the following fields:

- **IP Address Pool** (required)—Text field in the format a.b.c.d/mask, for example 172.0.0.0/8.
- **Pool Mask (bits)** (required)—Choices include: **30** and **32**  
where:  
**30** is used for IP numbered address pools (/30)  
**32** is used for IP unnumbered loopback address pools (/32).
- **Pool Association** (required)—Choices include: **Region**, **VPN**, and **Customer** from the drop-down list. Then you can click the **Select** button to receive all selections for the choice you made in the drop-down list. From this new window, make your selection and click **Select**.



**Note** If you choose **VPN**, an additional optional field appears, **Pool Name Suffix**, when you return to [Figure 5-17](#). This field allows the creation of multiple address pools within the same VPN. If you are creating this address pool for DMVPN usage, the recommendation is to use this field to specify a suffix.

- **Pool Name Suffix** (optional)—Suffixes are used to make a pool name unique. You can append this IP Address Pool to an existing pool by selecting a previously defined suffix, or click **New** to create a new pool.

- Step 4** Enter the required information for the IP address pool you are creating.

**Step 5** Click **Save**.

The Resource Pools window reappears with the new IP address pool listed.

## Creating a Multicast Pool

From the Create Multicast Pool window, you can create multicast pools. These pools are global and are not associated with any provider or customer.

To create a multicast pool, follow these steps:

**Step 1** Choose **Service Design > Resources > Resource Pools**.

**Step 2** Select **Multicast** from the **Pool Type** in the upper left of the Resource Pools window.

**Step 3** Click the **Create** button.

The Create New Multicast Resource Pool window appears, as shown in [Figure 5-18](#).

**Figure 5-18** Create New Multicast Resource Pool Window

Create New Multicast Resource Pool

Multicast Resource Pool Information	
Multicast Address (IP Address/Mask) *	<input type="text"/>
Use for Default MDT:	<input checked="" type="checkbox"/>
Use for Data MDT:	<input checked="" type="checkbox"/>

Save Cancel

Note: \* - Required Field

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The Create New Multicast Resource Pool window contains the following fields:

- **Multicast Address** (required)—Text field in the format **a.b.c.d/mask**, for example 239.0.0.0/8. Range: 224.0.1.0/8 to 239.255.255.255/32.
- **Use for default MDT** (optional)—This is a check box. Default: selected.
- **Use for Data MDT** (optional)—This is a check box. The *data MDT* contains a range of multicast group addresses and a bandwidth threshold. Thus, whenever a CE behind a multicast-VRF exceeds that bandwidth threshold while sending multicast traffic, the PE sets up a new data MDT for the multicast traffic from that source. The PE informs the other PEs about this data MDT and, if they have receivers for the corresponding group, the other PEs join this data MDT. Default: selected.

**Step 4** Enter the required information for the multicast pool you are creating.

**Step 5** Click **Save**.

The Resource Pools window reappears with the new multicast pool listed.

## Creating a Route Distinguisher and Route Target Pool

MPLS-based VPNs employ Border Gateway Protocol (BGP) to communicate between PEs to facilitate customer routes. This is made possible through extensions to BGP that carry addresses other than IPv4 addresses. A notable extension is called the route distinguisher (RD).

The purpose of the route distinguisher (RD) is to make the prefix value unique across the network backbone. Prefixes should use the same RD if they are associated with the same set of route targets (RTs) and anything else that is used to select routing policy. The community of interest association is based on the route target (RT) extended community attributes distributed with the Network Layer Reachability Information (NLRI). The RD value must be a globally unique value to avoid conflict with other prefixes.

The MPLS label is part of a BGP routing update. The routing update also carries the addressing and reachability information. When the RD is unique across the MPLS VPN network, proper connectivity is established even if different customers use non-unique IP addresses.

For the RD, every CE that has the same overall role should use a VRF with the same name, same RD, and same RT values. The RDs and RTs are only for route exchange between the PEs running BGP. That is, for the PEs to do MPLS VPN work, they have to exchange routing information with more fields than usual for IPv4 routes; that extra information includes (but is not limited to) the RDs and RTs.

From the Create Route Distinguisher Pool window, you can create route distinguisher pools.

To create a route distinguisher pool, follow these steps:

- Step 1** Choose **Service Design > Resources > Resource Pools**.
- Step 2** Select **Route Distinguisher** from the **Pool Type** in the upper left of the Resource Pools window.
- Step 3** Click the **Create** button.

The Create New Route Distinguisher Resource Pool window appears, as shown in [Figure 5-19](#).

**Figure 5-19** Create New Route Distinguisher Resource Pool Window

The Create New Route Distinguisher Resource Pool window contains the following fields:

- **RD Pool Start** (required)—Range: 0 to 2147483646.
- **RD Pool Size** (required)—Range: 1 to 2147483647.
- **Provider** (required)

- Step 4** Enter the **RD Pool Start** and **Size** information for the route distinguisher pool you are creating.
- Step 5** Click the **Select** button.

The Provider for new Resource Pool window appears.

- Step 6** Select one of the providers listed and click **Select**.
- Step 7** Click **Save**.

The Resource Pools window reappears with the new route distinguisher pool listed.

To create a Route Target Pool, follow these steps:

- Step 1** Choose **Service Design > Resources > Resource Pools**.
- Step 2** Select **Route Target** from the **Pool Type** in the upper left of the Resource Pools window.
- Step 3** Click the **Create** button.

The Create New Route Target Resource Pool window appears, as shown in [Figure 5-20](#).

**Figure 5-20 Create New Route Target Resource Pool Window**

The Create New Route Target Resource Pool window contains the following fields:

- **RT Pool Start** (required)—Range: 0 to 2147483646.
- **RT Pool Size** (required)—Range: 1 to 2147483647.
- **Provider** (required)

- Step 4** Enter the **RT Pool Start** and **Size** information for the route target pool you are creating.
- Step 5** Click the **Select** button.

The Provider for new Resource Pool window appears.

- Step 6** Select one of the providers listed and click **Select**.
- Step 7** Click **Save**.

The Resource Pools window reappears with the new route target pool listed.

## Creating a Site of Origin Pool

In MPLS VPN, CE sites use private/public AS numbers and when one AS number is used for each VPN, all sites belonging to the same VPN share the same private/public AS number. The default BGP behavior is to drop any prefix if its own AS number is already in the AS path. As a result, a customer site does not learn prefixes of a remote site in this situation. AS-OVERRIDE must be configured (if there are hub sites involved, ALLOWAS-IN must be configured) to allow those prefixes to be sent by PE routers but a routing loop can occur.

For example, CE1 and CE2 belong to the same customer VPN and have the same AS number 65001. The AS path between two customer sites is 65001 - 1234 - 65001 and prefixes cannot be exchanged between customer sites because AS 65001 is already in the path. To solve this problem, AS-OVERRIDE options are configured on PE routers; but it introduces a routing loop into the network without using extended community site of origin attributes.



Site of origin is a concept in MPLS VPN architecture that prevents routing loops in sites that are multi-homed to the MPLS VPN backbone and in sites using AS-OVERRIDE in conjunction. Site of origin is a type of BGP extended community attribute used to identify a prefix that originated from a site so that the re-advertisement of that prefix back to the site can be prevented. This attribute uniquely identifies the site from which the PE router learned the route. Site of origin is tagged at PE in peering with BGP neighbors using an inbound route-map and works in conjunction with BGP CE-PE routing protocol.

Site of origin must be unique per customer site per VPN/customer (when these sites are multi-homed). Therefore, the same value of site of origin must be used on PE routers connected to the same CE router or to the same customer site.

**Note**

Each time a customer site is created, Prime Fulfillment generates a unique site of origin value from the selected site of origin provider pool if Site of Origin is enabled. This site of origin value must be unique per customer site per customer/VPN.

From the Create Site of Origin Pool window, you can create site of origin pools.

To create a site of origin pool, follow these steps:

- Step 1** Choose **Service Design > Resources > Resource Pools**.
- Step 2** Select **Site of Origin** from the **Pool Type** in the upper left of the Resource Pools window.
- Step 3** Click the **Create** button.

The Create New Site of Origin Resource Pool window appears, as shown in [Figure 5-21](#).

**Figure 5-21** Create New Site of Origin Resource Pool Window

The Create New Site of Origin Resource Pool window contains the following fields:

- **SOO Pool Start** (required)—Range: 0 to 2147483646.
- **SOO Pool Size** (required)—Range: 1 to 2147483647.
- **Provider** (required)

- Step 4** Enter the **SOO Pool Start** and **Size** information for the site of origin pool you are creating.
- Step 5** Click the **Select** button.

The Provider for new Resource Pool window appears.

- Step 6** Select one of the providers listed and click **Select**.
- Step 7** Click **Save**.

The Site of Origin pools window reappears with the new route target pool listed.

## Creating a VC ID Pool

From the Create VC ID Pool window, you can create VC ID pools. These pools are global and are not associated with any provider or customer.

To create a VC ID pool, follow these steps:

- 
- Step 1** Choose **Service Design > Resources > Resource Pools**.
  - Step 2** Select **VC ID** from the **Pool Type** in the upper left of the Resource Pools window.
  - Step 3** Click the **Create** button.

The Create New VC ID Resource Pool window appears, as shown in [Figure 5-22](#).

**Figure 5-22** Create New VC ID Resource Pool Window

The Create New VC ID Resource Pool window contains the following fields:

- **VC Pool Start** (required)—Range: 1 to 2147483646.
- **VC Pool Size** (required)—Range: 1 to 2147483647.

- Step 4** Enter the required information for the site of origin pool you are creating.
- Step 5** Click **Save**.

The VC ID Pools window reappears with the new VC ID pool listed.

---

## Creating a VLAN Pool

From the Create VLAN Pool window, you can create VLAN pools.

To create a VLAN pool, follow these steps:

- 
- Step 1** Choose **Service Design > Resources > Resource Pools**.
  - Step 2** Select **VLAN** from the **Pool Type** in the upper left of the Resource Pools window.
  - Step 3** Click the **Create** button.

The Create New VLAN Resource Pool window appears, as shown in [Figure 5-23](#).

**Figure 5-23** Create New VLAN Resource Pool Window

Create New VLAN Resource Pool

**VLAN Resource Pool Information**

VLAN Pool Start (1 - 4094)\* : 0

VLAN Pool Size (1 - 4094)\* : 0

Access Domain\* : Select

Save Cancel

Note: \* - Required Field

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The Create New VLAN Resource Pool window contains the following fields:

- **VLAN Pool Start** (required)— Range: 1 to 4094.
- **VLAN Pool Size** (required)—Range: 1 to 4094.
- **Access Domain** (required)

**Step 4** Enter the **VLAN Pool Start** and **Size** information for the VLAN pool you are creating.

**Step 5** Click the **Select** button.

The Access Domain for new VLAN Pool window appears.

**Step 6** Select one of the access domains listed and click **Select**.

**Step 7** Click **Save**.

The VLAN Pools window reappears with the new VLAN pool listed.

## Deleting Resource Pools

From the Resource Pool window, you can delete specific resource pools.

To delete resource pools, follow these steps:

**Step 1** Choose **Service Design > Resources > Resource Pools**.

**Step 2** Select a pool type from the **Pool Type** in the upper left of the Resource Pools window.

**Step 3** Select one or more resource pools to delete by checking the check box(es) to the left of the resource pool(s).

**Step 4** Click the **Delete** button.

A Confirm Delete window appears.

**Step 5** Click the new **Delete** button to confirm that you want to delete the resource pool(s) listed.

The Resource Pools window reappears with the specified pool(s) deleted.

# Route Targets

A VPN can be organized into subsets called *Route Targets*. A Route Target describes how the CEs in a VPN communicate with each other. Thus, Route Targets describe the logical topology of the VPN. Cisco Prime Fulfillment can be employed to form a variety of VPN topologies between CEs by building hub and spoke or full mesh CE routing communities. Route Targets are building blocks that allow you to form complex VPN topologies and CE connectivity.

The most common types of VPNs are *hub-and-spoke* and *full mesh*.

- A hub-and-spoke Route Target is one in which one or a few CEs act as hubs, and all spoke CEs talk only to or through the hubs, never directly to each other.
- A full mesh Route Target is one in which every CE connects to every other CE.

These two basic types of VPNs—full mesh and hub and spoke—can be represented with a single Route Target. Whenever you create a VPN, the Prime Fulfillment software creates one default Route Target for you. This means that until you need advanced customer layout methods, you will not need to define new Route Targets. Up to that point, you can think of a Route Target as standing for the VPN itself—they are one and the same. If, for any reason, you must override the software's choice of route target values, you can do so only at the time you create a Route Target in the Prime Fulfillment software.

To build very complex topologies, it is necessary to break down the required connectivity between CEs into groups, where each group is either fully meshed, or has a hub and spoke pattern. (Note that a CE can be in more than one group at a time, if each group has one of the two basic patterns.) Each subgroup in the VPN wants its own Route Target. Any CE that is only in one group just joins the corresponding Route Target (as a spoke if necessary). If a CE is in more than one group, then you can use the Advanced Setup choice during provisioning to add the CE to all the relevant groups in one service request. Given this information, the provisioning software does the rest, assigning route target values and VRF tables to arrange exactly the connectivity the customer requires. You can use the Topology tool to double-check the Route Target memberships and resultant VPN connectedness.

Prime Fulfillment supports multiple CEs per site and multiple sites connected to the same PE. Each Route Target has unique route targets (RT), route distinguisher (RD), and VPN Routing and Forwarding instance (VRF) naming. After provisioning a Route Target, it is a good idea to run the audit reports to verify the Route Target deployment and view the topologies created by the service requests. The product supports linking two or more CE routing communities in the same VPN.

This section describes how you can create and manage CE routing communities. This section includes the following:

- [Accessing the Route Targets Window, page 5-28](#)
- [Creating Route Targets, page 5-29](#)
- [Deleting Route Targets, page 5-30](#)

## Accessing the Route Targets Window

The Route Targets feature is used to create and manage Route Targets.

Choose **Service Design > Resources > Route Targets** to access the Route Targets window shown in [Figure 5-24](#).

**Figure 5-24**      **Route Targets Window**

#	<input type="checkbox"/> Name	HRT	SRT	Provider	VPN
1	<input type="checkbox"/> cerc1	22.2045	22.2040	Provider1	vpn1
2	<input type="checkbox"/> cerc2	22.2065	22.2060	Provider1	vpn2
3	<input type="checkbox"/> cerc3	22.3001	22.3000	Provider1	
4	<input type="checkbox"/> cerc4	22.4001	22.4000	Provider1	
5	<input type="checkbox"/> cerc5	22.5001	22.5000	Provider1	vpn14
6	<input type="checkbox"/> cerc6	22.5001	22.5000	Provider1	
7	<input type="checkbox"/> cerc7	22.5001	22.5000	Provider1	vpn15

From the Route Targets window, you can create, edit, or delete CE routing communities using the following buttons:

- **Create**—Click to create new CE routing communities. Enabled only if no CE routing community is selected.
- **Edit**—Click to edit selected CE routing communities (select by checking the corresponding box). Enabled only if one CE routing community is selected.
- **Delete**—Click to delete selected CE routing communities (select by checking the corresponding box(es)). Enabled only if one or more CE routing communities are selected.

## Creating Route Targets

When you create a VPN, the Prime Fulfillment software creates one default Route Target for you. But if your network topology and configuration require customized Route Target definitions, you can define Route Targets customized for your network.



### Tip

Customized Route Targets should be defined only in consultation with the VPN network administrator. To build complex topologies, it is necessary to break down the required connectivity between CEs into groups, where each group is either fully meshed or has a hub-and-spoke pattern. A CE can be in more than one group at a time, as long as each group has one of the two basic configuration patterns.

Each subgroup in the VPN wants its own Route Target. Any CE that is only in one group just joins the corresponding Route Target (as a spoke if necessary). If a CE is in more than one group, then you can use the Advanced Setup choice during provisioning to add the CE to all the relevant groups in one service request. Given this information, Cisco IP Solution Center does the rest, assigning route target values and VRF tables to arrange the precise connectivity the customer requires.

To create a CE routing community, follow these steps:

**Step 1** Choose **Service Design > Resources > Route Targets**.

**Step 2** Click **Create**.

The Create CE Routing Community window appears, as shown in [Figure 5-25](#).

**Figure 5-25 Create CE Routing Community Window**

- Step 3** Complete the Route Target fields as required for the CE Routing Community:
- Provider Name** (required)—To specify the service provider associated with this Route Target, click **Select**.  
The Select Provider window is displayed.
  - From this new window, choose the name of the service provider, then click **Select**.
  - Name** (required)—Enter the name of the Route Target.
  - Route Target Type**—Specify the Route Target type: Hub and Spoke or Fully Meshed.
  - Auto-Pick Route Target Values**—Choose to either let Cisco IP Solution Center automatically set the route target (RT) values or set the RT values manually.  
By default, the **Auto-pick route target values** check box is checked. If you uncheck the check box, you can enter the Route Target values manually.

**Caution**

If you choose to bypass the **Auto-pick route target values** option and set the route target (RT) values manually, note that the RT values cannot be edited after they have been defined in the Prime Fulfillment software.

- Step 4** When you have finished entering the information in the Create CE Routing Community window, click **Save**.

After creating the Route Target, you can add it to the VPN.

## Deleting Route Targets

From the CE Routing Community window, you can delete specific Route Targets.

To delete Route Target(s), follow these steps:

- Step 1** Choose **Service Design > Resources > Route Targets**.
- Step 2** Select Route Target(s) to delete by checking the check box(es) to the left of the Route Target name.
- Step 3** Click the **Delete** button.  
The Confirm Delete window appears.

- Step 4** Click **OK** to confirm that you want to delete the Route Target(s) listed.  
The Route Targets window reappears with the specified Route Target(s) deleted.
-

