



Getting Started with MPLS VPN

This chapter describes the tasks required to get started using Cisco IP Solution Center (ISC) Multiprotocol Label Switching (MPLS) virtual private network (VPN).

For more information about where MPLS VPN fits into the ISC solution, see [Appendix A, “IP Solution Center—MPLS VPN.”](#)

- [Before You Begin, page 1-1](#)
- [MPLS Service Activation, page 1-1](#)

Before You Begin

Before you can use MPLS VPN to provision, you must do the following:

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| Step 1 | Install ISC.
See Cisco IP Solution Center Installation Guide, 4.1 |
| Step 2 | Purchase the license. |
| Step 3 | Asses your network.
For example, the network must meet certain criteria such as MPLS, MP-BGP enabled, PE routers in supported platforms, and so forth. ISC provisions only PE-CEs, not devices within a given network. |
| Step 4 | Populate ISC.
See Cisco IP Solution Center Infrastructure Reference, 4.1 |
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MPLS Service Activation

To activate MPLS services you must configure ISC so it “knows” about the preconfiguration information, such as devices, providers, customers, and so on, that ISC is going to manage and their roles.

How to create the associated elements in ISC is explained in the chapter, Service Inventory—Inventory and Connection Manager, and how to discover devices is explained in the chapter, Service Inventory—Discovery, in *Cisco IP Solution Center Infrastructure Reference, 4.1* (http://www.cisco.com/univercd/cc/td/doc/product/rtrmgmt/isc/4_1/infrastr/index.htm).

The major steps to achieve MPLS service activation include setting up:

- Provider information – devices, providers, regions, and PEs.
- Customers and Customer Sites.
- CPEs.
- Resource Pools.
- Defining NPC (Named Physical Circuits).

Provider Information

Step 1 Acquire devices.

There are three ways to bring the devices into ISC:

- Using the ISC Auto-Discovery tool, which will discover the devices. The connections between the devices are populated into the database. The Auto-Discovery tool is located in the Inventory Manager.
- Using the Inventory Manager for bulk-upload and bulk-changes to the database. The Inventory Manager is located in: **Service Inventory > Inventory and Connection Manager > Inventory Manager**.
- Using the ISC main GUI to define a device and doing a Configuration Collection.

Step 2 Create Provider.

This is a logical container to hold configurations for autonomous systems.

Go to **Service Inventory > Inventory and Connection Manager > Providers**.

Step 3 Create Regions.

These are logical dividers used to organize PE devices.

Go to **Service Inventory > Inventory and Connection Manager > Providers > Provider Regions**.

Step 4 Create PEs.

Use “acquired” devices to group into PEs.

Go to **Service Inventory > Inventory and Connection Manager > Providers > PE Devices**.

Define the PE-POPs (n-PE) and PE-CLEs (u-PE) for each region.



Note For L2 access, you must specify NPE—physical.

Customer Information

Step 1 Create Customers.

These are virtual placeholders for VPN deployment.

Go to **Service Inventory > Inventory and Connection Manager > Customers**.

Step 2 Create Customer Sites.

- Go to **Service Inventory > Inventory and Connection Manager > Customers > Customer Sites**.
- Step 3** If CEs are to be managed, Create CEs.
- Go to **Service Inventory > Inventory and Connection Manager > Customers > CPE Devices**.
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Resource Information

Resource Pools are used by ISC to automatically assign critical parameters like VLAN, VCID and IP Addresses during the service provisioning.

Go to **Service Inventory > Inventory and Connection Manager > Resource Pools**.

- IP addresses – ISC can auto-assign IP addresses.
 - IP address pools that are tied to Regions.
 - IP address pools are used by ISC to automatically assign IP addresses for PE-CE connections in MPLS L3VPNs. The pool is irrelevant for L2VPNs. IP address pools with /32 pool mask are used for loopbacks on CE; pools with /30 are used for the connection between PEs and CEs.
 - Route Target (RT) Pool:
 - RT pool is critical for a VPN. It is tied to a Provider. ISC uses RT pool to automatically assign RTs in MPLS VPN.
 - ISC can auto-assign this pool.
 - This pool is irrelevant for L2VPNs.
 - Route Distinguisher (RD) Pool:
 - RD pool is tied to a Provider. It is used by VPN to distinguish routes. ISC uses RD pool to automatically assign RDs in MPLS VPN.
 - ISC can auto-assign this pool.
 - This pool is irrelevant for L2VPNs.
 - Site of Origin (SOO) – (optional) ISC can auto-assign these values.
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Creating CERCs

CE Routing Communities (CERCs) is how ISC handles the Route Targets (RT) transparently from the users and it can help the service providers to easily implement various kinds of VPN topology.

Go to **Service Inventory > Inventory and Connection Manager > CE routing Communities**.

Creating VPNs

VPNs must be created for MPLS VPN services. VPN is just a placeholder where you can tie all different CERCs together to form a complex VPN topology.

Go to **Service Inventory > Inventory and Connection Manager > VPNs**.

