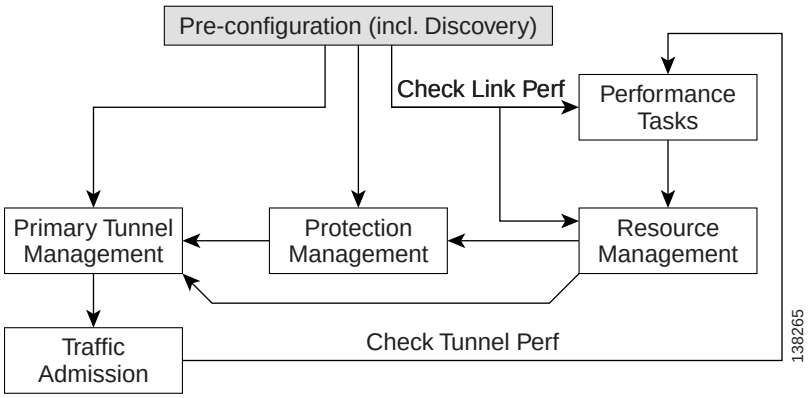
Getting Started



This chapter describes the installation procedure for ISC TEM. The general installation procedure for Cisco IP Solutions Center (ISC) is described in *Cisco IP Solution Center Installation Guide, 4.1*.

This chapter includes the following sections:

Prerequisites and Limitations

The current release of ISC TEM involves certain prerequisites and limitations, which are described in this section.

See *Cisco IP Solution Center Installation Guide, 4.1* for general system recommendations.

General Limitations

Concurrent use of the same installation is not supported. Let issued service requests finish deployment before issuing other service requests to avoid conflicts. This is described in more detail in the tunnel provisioning chapters.

The concurrency limitation also implies that opening multiple browsers displaying a single ISC installation is not recommended.

ISC TEM only supports MPLS-TE topology with point-to-point links.

Feature-Specific Prerequisites and Limitations

Some features might only be available with a particular license. In addition, the number of nodes provided by the license limits the size of the network. For more information, see Licensing Schemes, page 1-3.

A number of specific requirements are associated with the TE Discovery task. These are described in TE Discovery Prerequisites, page 3-2.

In the Planning portion of the current implementation of ISC TEM, concurrent use is not recommended as users working simultaneously risk being unable to commit their changes.

JRE version 1.4.2_04 or higher should be installed on the client computer, and if the user does not already have Java installed, they can use the links on the Topology Tool page to install the version that is bundled with ISC.

Non-POS interfaces cannot be protected on IOS-XR devices.

For users who have a repository that predates the ISC 4.1 release and has been upgraded to a 4.1 repository, you need to run a TE Discovery task to collect software version information from the devices before deploying service requests.

Non-Cisco Devices and ISC TEM

ISC TEM does not manage non-Cisco devices and ISC cannot be used to provision them.

ISC will, however, discover non-Cisco devices and store them in the repository. Tunnels can be run through these devices, the bandwidth consumed can be accounted for, but the devices are not otherwise managed by ISC. TE tunnels originating from non-Cisco devices will not be discovered.

Sorting can be performed on different attributes in various parts of the ISC TEM GUI. However, due to the added support for non-Cisco devices, sorting cannot be performed on Device Name and MPLS TE ID in the TE Nodes List window.

Supported Platforms

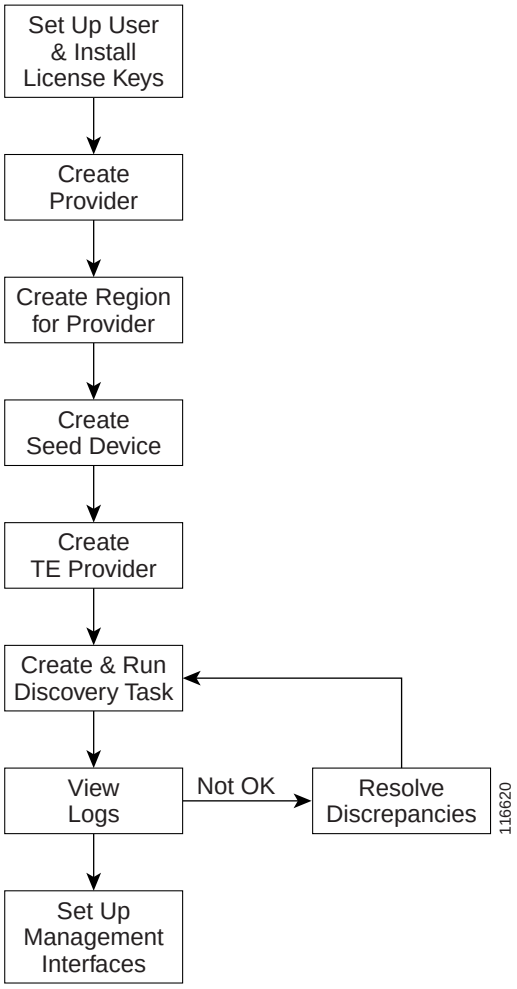
For supported devices and IOS platforms, see *Cisco IP Solution Center Installation Guide, 4.1*.

Preconfiguration Process Overview

The preconfiguration process sets up key parameters that enable the system to collect TE network information and subsequently deploy TE configurations on the chosen network.

An overview of the preconfiguration process is provided in Figure 2-1.

Figure 2-1 Preconfiguration Process



Before commencing the preconfiguration process, MPLS-TE needs to be enabled on the network devices by making sure that the IP addresses used as devices' TE IDs are accessible from the management station (this step is not supported by ISC TEM).

The preconfiguration process includes the following steps:

Step 1 **Set up new user and install license keys**—To run the TEM blade of ISC, it is necessary to create a new user and install license keys. These keys will enable the user to view and manage the TE tunnels and resources using ISC. (see ISC TEM Setup and Installation, page 2-4)

Step 2 **Create a provider**—The provider is a concept designed to allow many different operators to work on ISC TEM simultaneously, each working on different networks. Thus, each provider has to be defined and used as a reference operator for future work on the system. (To create a provider, see *Cisco IP Solution Center Infrastructure Reference, 4.1*.)

Step 3 **Create a region for the provider**—The region is important because a single provider could have multiple networks. The region is used as a further level of differentiation to allow for such circumstances. (To create a region, see *Cisco IP Solution Center Infrastructure Reference, 4.1*.)

Step 4 **Create a seed device**—This IOS Device will be the seed router for network discovery. The network discovery process uses the seed router as an initial communication point to discover the MPLS TE network topology. A set of TE enabled devices, links, explicit paths, tunnels, and static routes are then populated to the database. (To create a seed router, see *Cisco IP Solution Center Infrastructure Reference, 4.1*.)

Step 5 **Create a TE Provider**—Providers can be defined as TE provider, if they are supporting MPLS TE in their network. It is necessary to create a TE provider to enable a TE network to be managed. All TE related data associated with a given network is stored under a unique TE provider. A provider and region uniquely define a TE provider (see Creating a TE Provider, page 2-6).

Step 6 **Run a Discovery Task**—Discover the TE network for a particular TE provider to populate the repository with a view to creating primary and backup tunnels (see Chapter 3, “TE Network Discovery”).

Step 7 **Set Up Management Interfaces**—Set up management interfaces for discovered devices or update server host file with resolution for all discovered devices. This step is only necessary if the devices in the TE network are not accessible via their hostnames (see Setting Up Management Interfaces, page 3-11).

Note If Telnet is selected to communicate with the seed router, Telnet must also be used for the other network devices. Likewise, if SSH is selected for the seed router, SSH must be used for all other devices.

ISC TEM Setup and Installation

Before setting up ISC TEM, the ISC software must be installed. To do so, see *Cisco IP Solution Center Installation Guide, 4.1*.

To set up a new ISC TEM user, one or more users with a TE role must be created. For step by step instructions, see *Cisco IP Solution Center Infrastructure Reference, 4.1*.

Installing an ISC TEM License

Cisco IP Solution Center Traffic Engineering Management (ISC TEM) offers the license structure described in Chapter 1, “Introduction to ISC TEM.”

For an explanation of license keys in ISC, see *Cisco IP Solution Center Infrastructure Reference, 4.1*.

To install a TE license, use the following steps:

Step 1 Log into ISC with the following default values:

- User Name: **admin**
- Password: **cisco**

Step 2 Navigate **Administration** > **Security** > **Users.**

Step 3 Click **Create**.

Step 4 Fill in **User ID**, **Password**, **Verify Password**, and the **Personal Information** section.

Step 5 Click **Edit** to edit the assigned roles.

Step 6 Select **TERole** and click **OK**. **TERole** provides full access to ISC TEM. The **TEServiceOpRole** only has the privilege to access the tunnel admission SR.

Step 7 Click **Save**.

Step 8 Navigate **Administration** > **Control Center** > **Licensing**.

Step 9 Enter the three TEM license keys for TE, TE/RG, and TE/BRG successively:

- Click **Install**.
- Enter a license key.
- Click **Save**.

Repeat the procedure for each license key.

Typing in all three license keys is the only valid installation.

Step 10 Log out as **admin**.

Step 11 Log in as the user created above.

You are now ready to start using ISC TEM.

Note The **admin** role should only be used to manage ISC and not to perform network management operations.

Editing DCPL Properties (Optional)

The ISC Dynamic Component Properties Library (DCPL) includes a wide variety of properties that are accessible from the GUI, some of which can be modified.

The various DCPL properties in ISC, including those pertaining to ISC TEM, and the process for editing these properties are described in *Cisco IP Solution Center Infrastructure Reference, 4.1*.

Warning **Do not attempt to modify the DCPL properties unless you fully understand the implications.**

In the ISC GUI, the DCPL properties are found in **Administration** > **Control Center** > **Hosts**. Select a check box for a specific host and click the **Config** button.

The DCPL properties pertaining to ISC TEM are found in the following folders:

- **Provisioning** > **Service** > **TE**
- **TE**
- **TETopology**

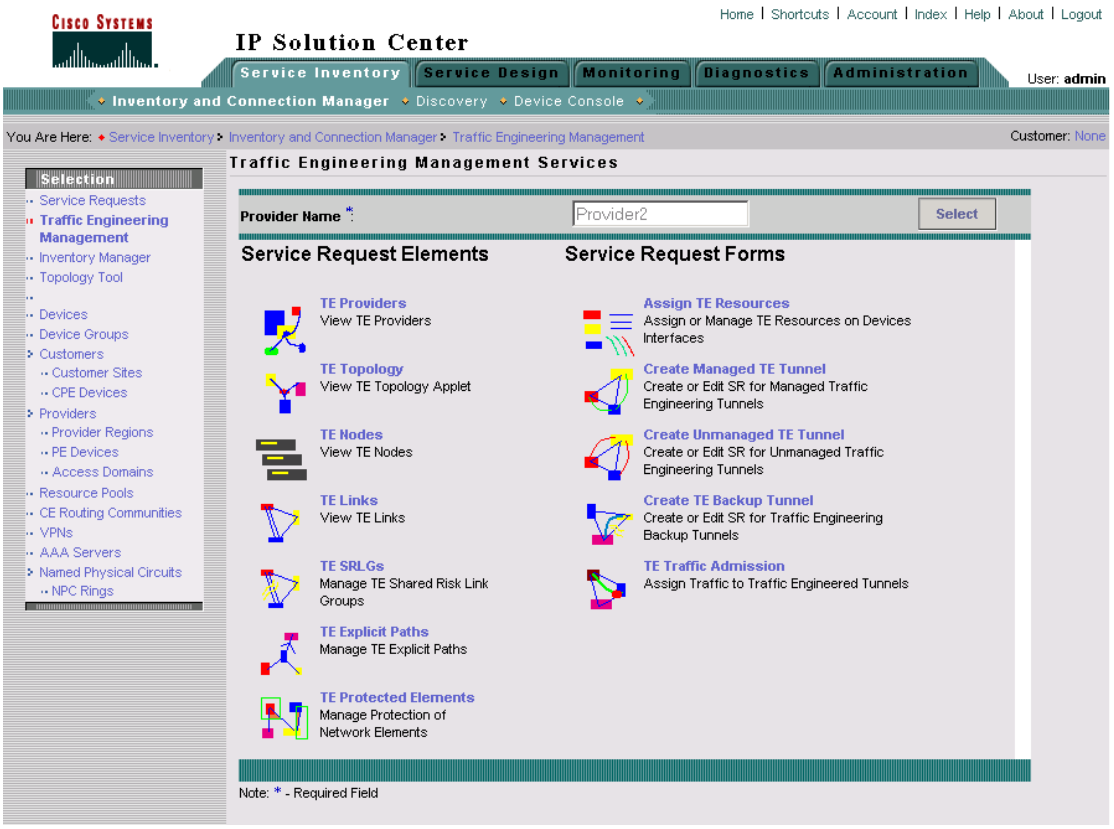
Creating a TE Provider

After a provider and a region for that provider have been set up (see *Cisco IP Solution Center Infrastructure Reference, 4.1*), create a TE provider using the following steps:

Step 1 Navigate **Service Inventory** > **Inventory and Connection Manager** > **Traffic Engineering Management**.

The Traffic Engineering Management Services window shown in Figure 2-2 appears.

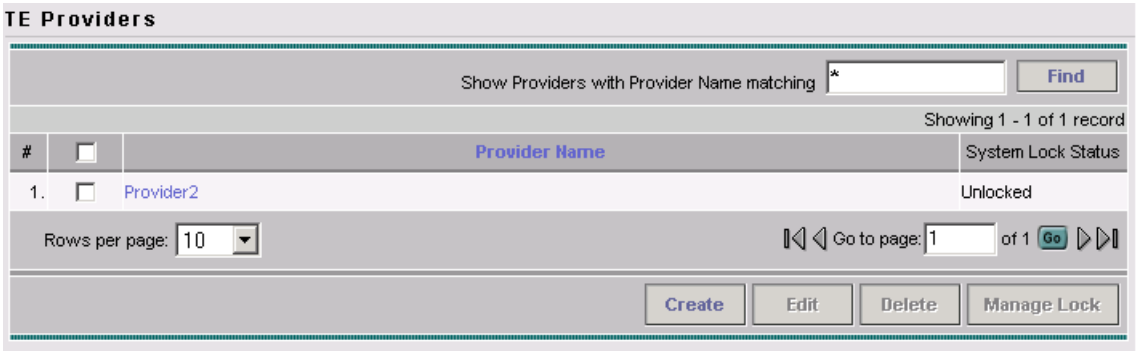
Figure 2-2 Traffic Engineering Management Services



Step 2 Click **TE Providers**.

The TE Providers window shown in Figure 2-3 appears.

Figure 2-3 TE Providers

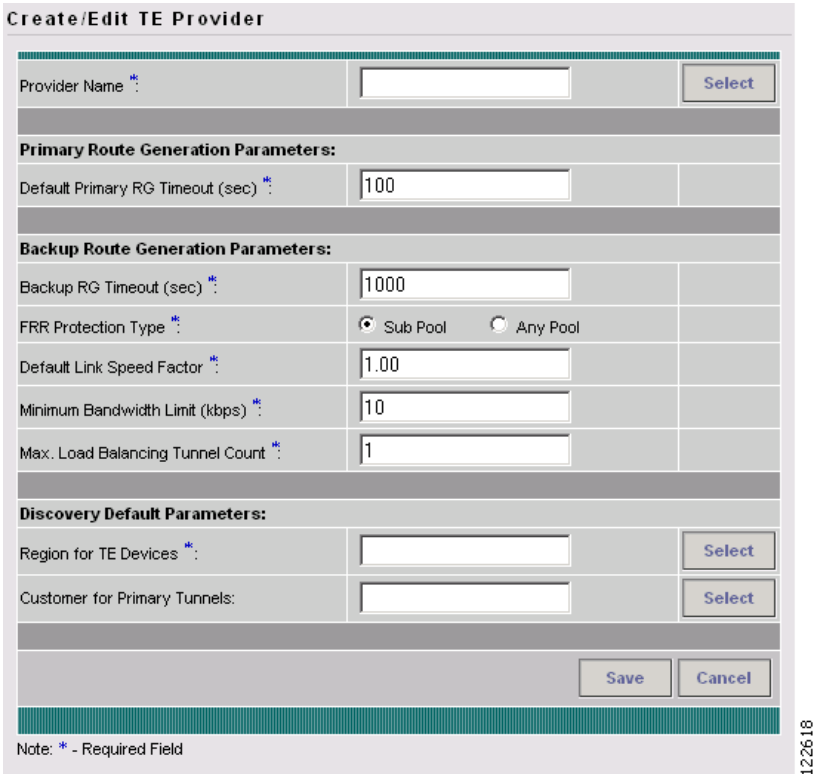


For an explanation of the various window elements, see the "TE Providers" section on page A-3.

Step 3 Click **Create** to create a TE provider.

The Create / Edit TE Provider window shown in Figure 2-4 appears.

Figure 2-4 Create/Edit TE Provider



For an explanation of the various window elements, see Create/Edit TE Provider, page A-3.

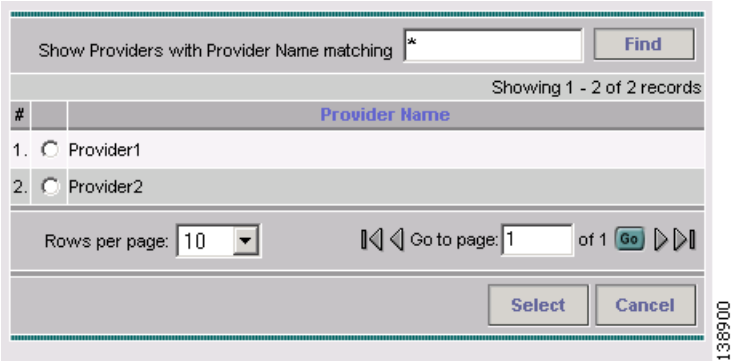
To select a provider name, click the **Select** button next to the **Provider Name** field. The Select Provider window shown in Figure 2-5 appears.

Step 4 Add primary and backup route generation parameters.

When the FRR protection type is equal to Sub Pool, the backup tunnels generated by the tool will protect only the sub pool primary tunnels. When it is equal to Any Pool, the backup tunnels generated by the tool will protect both sub pool and global pool primary tunnels.

For more information on Fast Re-Route (FRR) protection pools, see Bandwidth Pools, page 1-5.

Figure 2-5 Select Provider for Create TE Provider



Step 5 Select the desired provider using the radio buttons or search for a provider with search criteria matching a provider name and click **Find**.

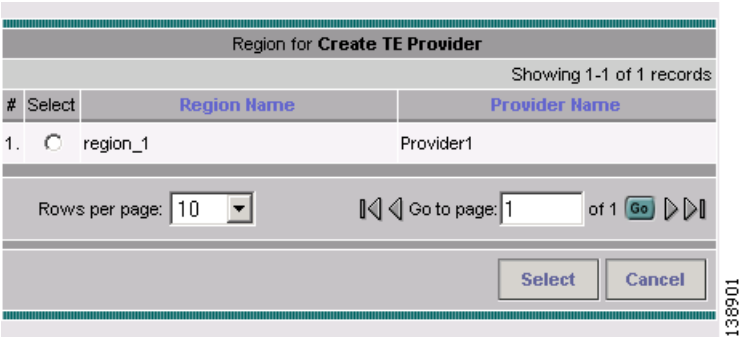
Step 6 Click **Select** to select the desired provider. The Select Provider window closes.

The selected provider name is displayed in the **Provider Name** field.

Step 7 Fill in the remaining required fields (marked '*') and any optional fields as desired.

Step 8 For the required **Region for TE Devices** field, click the corresponding **Select** button. The Select Region for Create TE Provider window shown in Figure 2-6 appears.

Figure 2-6 Select Region for Create TE Provider



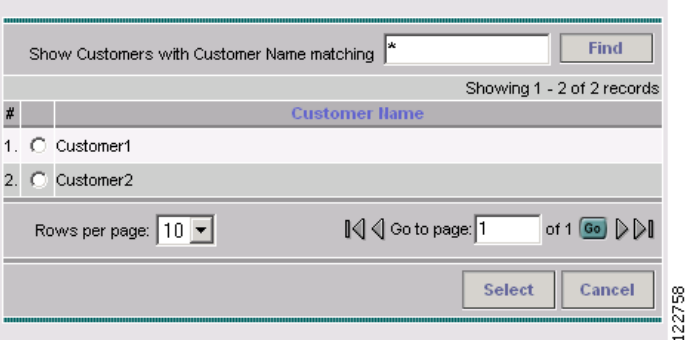
Step 9 Select the desired region using the radio buttons.

Step 10 Click **Select** to select the desired region. The Region for Create TE Provider window closes.

The selected region name is displayed in the **Region for TE Devices** field.

Step 11 For the optional **Customer for Primary Tunnels** field, click the corresponding **Select** button. The Customer for Create TE Provider window shown in Figure 2-7 appears.

Figure 2-7 Select Customer for Create TE Provider



Step 12 If desired, select a customer using the radio buttons or search for a customer by entering customer search criteria in the **Show Customers with Customer Name matching** field and click **Find**.

Step 13 Click **Select** to select the desired customer. The Select Customer for Create TE Provider window closes.

The selected customer name is displayed in the **Customer for Primary Tunnels** field of the Create/Edit TE Provider window.

Step 14 Click **Save**.

The created TE provider appears in the TE Provider window and can now be used to perform TE discovery and other TE functions.

To switch between TE providers, go to the top of the Traffic Engineering Management Services window (Figure 2-2) and click the **Select** button for the **Provider Name** field.