

# **Setting Up the Service**

Cisco IP Solution Center Traffic Engineering Management (ISC TEM) offers the license structure described in Chapter 1, "Introduction to ISC TEM." The ISC TEM specific installation steps are described in this chapter whereas the general installation procedure for Cisco IP Solutions Center (ISC) is described in *Cisco IP Solution Center Installation Guide*, 4.0.

This chapter contains the following sections:

- Bootstrapping Process Overview, page 2-1
- ISC TEM Client Setup and Installation, page 2-3
- Creating a TE Provider, page 2-4

### **Bootstrapping Process Overview**

The bootstrapping 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 bootstrapping process is provided in Figure 2-1.







- 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 Client Setup and Installation, page 2-3)
- Step 2 Create a provider and a region for the 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. 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 provider and a region, see *Cisco IP Solution Center Infrastructure Reference, 4.0.*)
- Step 3 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, 4.0.*)

- **Step 4 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 2-4).
- **Step 5 Run 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").



**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 Client Setup and Installation

Before setting up ISC TEM, the ISC software must be installed. To do so, see *Cisco IP Solution Center Installation Guide*, 4.0.

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*, 4.0.

For an explanation of license keys in ISC, see Cisco IP Solution Center Infrastructure Reference, 4.0.

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.

## **Creating a TE Provider**

After a provider and a region for that provider have been set up (see *Cisco IP Solution Center Infrastructure Reference, 4.0*), 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

• Inventory and	Service Inventory Service d Connection Manager	Design Monitoring Administration Flow Manager → Device Console → Engineering Management Lent Services	User: admin Customer: None
Selection Service Requests Traffic Engineering Management Inventory Manager	Provider Name *	Service Request Forms	Select
Topology Tool Devices Device Groups Customer Sites CPE Devices Provider Regions Provider Regions PE Devices Access Domains Resource Pools CE Routing Communities VPNs AAA Servers Named Physical Circuits NPC Rinos	TE Providers     View TE Providers     View TE Providers     TE Topology     View TE Topology     Applet     TE Hodes     View TE Nodes     View TE Links     View TE Links     View TE Links     Manage TE Shared Risk	Assign TE Resources     Assign or Manage TE Resources on     Devices Interfaces     Create Managed TE Tunnel     Create or Edit SR for Managed Traffic     Engineering Tunnels     Create Unmanaged TE Tunnel     Create or Edit SR for Unmanaged Traffic     Engineering Tunnels     Create TE Backup Tunnel     Create TE Backup Tunnel     Create or Edit SR for Traffic Engineerin     Backup Tunnels     TE Traffic Admission     Assign Traffic to Traffic Engineered	fic
	Link Groups	<b>⊷</b> ** Tunnels	

Step 2 Click **TE Providers**.

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

Figure 2-3 TE Providers

T	ΕI	Provi	ders			
				Show Providers with Provider Name matching	Find	
2				Showin	ig 1 - 1 of 1 record	
	#			Provider Name	System Lock Status	
	1.		PAD0		Unlocked	
		Rowsp	er page: 10 💌	∎∢ ∢ Go to page: 1	of 1 💿 🖓 🕅	
				Create Edit Delete	Manage Lock	2760

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

Create/Edit TE Provider		
Provider Name *:		Select
Primary Route Generation Parameters:		
Default Primary RG Timeout (sec) *:	100	
Backup Route Generation Parameters:		
Backup RG Timeout (sec) *:	1000	
FRR Protection Type *:	Sub Pool	
Default Link Speed Factor *:	1.00	
Minimum Bandwidth Limit (kbps) *:	10	
Max. Load Balancing Tunnel Count *:	1	
Disasuaru Default Daramatara		
Discovery Default Parameters:		
Region for TE Devices *:		Select
Customer for Primary Tunnels:		Select
	Save	Cancel
		<u>.</u>
Note: * - Required Field		12261

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 Provider for Create TE Provider window shown in Figure 2-5 appears.

Step 4 Add primary and backup route generation parameters. To understand Fast Re-Route (FRR) protection pools, see Bandwidth Pools, page 1-4.

Figure 2-5 Provider for Create TE Provider

:	Show Providers with Provider Name matching	
	Showing 1 - 1 of 1 reco	rd
#	Provider Name	
1.	© PADO	
	Rows per page: 10 💌 🛛 🕼 🖓 Go to page: 1 💿 🕅	0
ß	Select Cancel	658
		122

- 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 Provider for Create TE 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 Region for Create TE Provider window shown in Figure 2-6 appears.



Figure 2-6 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 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 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.