C H A P T E R **69**

Gateway Configuration

Cisco IP telephony gateways enable Cisco CallManager to communicate with non-IP telecommunications devices. Cisco CallManager supports several gateway types as described in the *Cisco CallManager System Guide*.

These sections provide information about using Cisco CallManager for working with and configuring Cisco gateways.

- Adding Gateways to Cisco CallManager, page 69-1
- Gateway Configuration Settings, page 69-13
- Port Configuration Settings, page 69-59
- Finding Specific Gateways, page 69-66
- Modifying Gateways and Ports, page 69-74
- Understanding Cisco CallManager Voice Gateways, *Cisco CallManager System Guide*

Adding Gateways to Cisco CallManager

To enable Cisco CallManager to manage IP telephony gateways in your network, you must first add each gateway to the Cisco CallManager configuration database. The procedures, windows, and configuration settings for adding a gateway vary according to the gateway model that you are adding.

The following procedure describes how to add a new gateway in Cisco CallManager.

Procedure

Step 1   To display the Find and List Gateways window, choose **Device > Gateway**.

Step 2   Click the **Add New** button. The Add a New Gateway window displays.

Step 3   From the Gateway Type drop-down list box, choose the gateway type that you want to add. The Device Protocol field may automatically get populated depending on gateway type that you choose.

Step 4   Click **Next**.

Step 5   In the following table, click the specific procedure for the gateway type that you are configuring. After you are in the correct procedure, start with the step where you enter the appropriate settings for that particular gateway type.

Table 69-1   Gateways

Type of Gateway	Procedure to Add
Cisco Voice Gateway 200 (VG200) VG224 Gateway Cisco IOS 269X, 26XX, 362X, 364X, 366X, 3725, 3745 Gateways Cisco 2801, 2811, 2821, 2851, 3825, 3845 Gateways Cisco Catalyst 4000 Access Gateway Module Cisco Catalyst 4224 Voice Gateway Switch Communication Media Module Cisco IAD2400	Adding a Cisco IOS MGCP Gateway, page 69-2
Cisco IOS 269X, 3725, 3745 Gateways	Adding a Cisco IOS SCCP Gateway, page 69-8
Cisco Catalyst 6000 E1 VoIP Gateway Cisco Catalyst 6000 T1 VoIP Gateway Cisco DT-24+ or DE-30+ Digital Access Trunk Gateway	Adding a Non-IOS MGCP Gateway, page 69-9
Other Cisco IOS Gateway that is configured in H.323 mode	Adding a Cisco IOS H.323 Gateway, page 69-10
Cisco Catalyst 6000 24 Port FXS Gateway	Adding an Analog Access Gateway and Ports, page 69-11
Cisco VG248 Gateway	Adding a Cisco VG248 Analog Phone Gateway, page 69-12

Adding a Cisco IOS MGCP Gateway

Use the following procedure to add and configure a Cisco IOS MGCP gateway to Cisco CallManager. The following Cisco IOS gateways support MGCP:

- CiscoVG200 Cisco IP Telephony Voice Gateway
- VG224 Gateway
- Cisco IOS 362x, 364x, 366x Gateways
- Cisco IOS 3725 and 3745 Gateways
- Cisco IOS 26xx and 269x Gateways
- Cisco 2801, 2811, 2821, 2851, 3825, 3845 Gateways
- Cisco Catalyst 4000 Access Gateway Module
- Cisco Catalyst 4224 Voice Gateway Switch
- Communication Media Module
- Cisco IAD2400 gateways

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Note   Like other IOS MGCP gateways, MRP/ASI gateways may work with a Cisco CallManager group that contains three Cisco CallManagers. ASI/MRP gateways testing occurs, however, with only one backup Cisco CallManager.

Before You Begin

Before configuring a Cisco IOS MGCP gateway for use with Cisco CallManager, you must configure the gateway by using the Cisco IOS command-line interface (CLI). For procedures and commands that are required to perform this configuration, refer to the configuration documentation that is supplied with the gateway.

Procedure

Step 1   To display the Find and List Gateways window, choose **Device > Gateway**.

Step 2   Click the **Add New** button. The Add a New Gateway window displays.

Step 3   From the Gateway Type drop-down list box, choose one of the following MGCP gateways:

- Cisco VG200
- VG224
- Cisco 362X, 364X, 366X gateways
- Cisco 3725 and 3745 gateways
- Cisco 26XX and 269X gateways
- Cisco 2801, 2811, 2821, 2851, 3825, 3845 Gateways
- Cisco Catalyst 4000 Access Gateway Module
- Cisco Catalyst 4224 Voice Gateway Switch
- Communication Media Module
- Cisco IAD2400 gateway

✎

Note   The Cisco Catalyst 6000 gateways also support MGCP but are configured differently. See the "Adding a Non-IOS MGCP Gateway" section on page 69-9.

Cisco IOS MGCP gateways support different device protocols for interfacing to the PSTN or other non-IP devices, depending on the gateway model and the type of installed network modules and voice interface cards (VICs). A subsequent web window provides configuration for these interfaces.

Step 4   Click **Next**.

Step 5   If a Protocol drop-down list box displays, choose **MGCP** and click **Next**. Otherwise, skip to Step 6.

Step 6   The appropriate Gateway Configuration window displays.

Enter the appropriate settings and choose the type of network modules that are installed in each slot, as described in the "MGCP Gateway Configuration Settings" section on page 69-14, including any product-specific configuration settings.

Step 7   Click **Save**.

The Gateway Configuration window updates and displays drop-down list boxes with options for configuring the type of voice interface cards (VICs) in each subunit of each network module.

The available choices depend on the type of network modules that are configured in the Gateway Configuration window.

Step 8   From the drop-down list boxes, choose the type of VICs that are installed in each subunit and click **Save**.

The window updates to add links for configuring endpoint information and ports for the chosen type of VICs.

Step 9   Click an endpoint identifier (for example, 1/0/0) to configure device protocol information and add ports for the installed types of VICs.

For detailed instructions, see the following procedures:

- Adding FXS Ports to an MGCP Gateway, page 69-4
- Adding FXO Ports to an MGCP Gateway, page 69-5
- Adding Digital Access T1 Ports to an MGCP Gateway, page 69-6
- Adding a Digital Access PRI Device to an MGCP Gateway, page 69-7
- Adding a BRI Port to an MGCP Gateway, page 69-7

Step 10   To reset the gateway and apply the changes, click **Reset**.

Step 11   Continue configuring endpoint information and ports as needed.

Step 12   After you finish configuring the endpoint and adding ports, you need to add the MGCP gateway device to a route group/route list or assign a route pattern to the gateway, so calls can be routed to the gateway.

> **Note**   You need to add the MGCP gateway to a route pattern only for outbound calling.

Adding Ports to an MGCP Gateway

The device protocols and port types that can be configured on MGCP gateways vary by the type of installed voice interface cards. This section contains the following procedures:

- Adding FXS Ports to an MGCP Gateway, page 69-4
- Adding FXO Ports to an MGCP Gateway, page 69-5
- Adding Digital Access T1 Ports to an MGCP Gateway, page 69-6
- Adding a Digital Access PRI Device to an MGCP Gateway, page 69-7
- Adding a BRI Port to an MGCP Gateway, page 69-7

Adding FXS Ports to an MGCP Gateway

You can use Foreign Exchange Station (FXS) ports to connect to any POTS device. Use this procedure to configure FXS ports on an MGCP gateway.

Before You Begin

You must add an MGCP gateway before configuring ports. See the "Adding a Cisco IOS MGCP Gateway" section on page 69-2 for instructions.

Procedure

Step 1   To display the Find and List Gateways window, choose **Device** > **Gateway** or skip to Step 4 if you have already located the MGCP gateway to which you want to add FXS ports.

Step 2   Enter the appropriate search criteria to locate the MGCP gateway to which you want to add FXS ports.

Step 3   Click the name of the desired gateway to display its MGCP configuration settings and endpoint identifiers.

Step 4   From the Gateway Configuration window, click the endpoint identifier for the FXS VIC that you want to configure.

The window refreshes and displays the Gateway Configuration window.

Step 5   Enter the appropriate **Gateway Information** and **Port Information** settings. See the following sections for details about these fields:

   • FXS/FXO Port Configuration Settings, page 69-16

   • POTS Port Configuration Settings, page 69-60

Step 6   Click **Save**.

> **Note**   After you insert a POTS port, the window refreshes and displays the POTS port information at the bottom of the window. An **Add a new DN** link displays below the new port.

Step 7   Click **Add a new DN** to add directory numbers to the POTS port or, if you configured another type of port, go to Step 9.

> **Note**   See the "Configuring a Directory Number" section on page 49-2 and "Directory Number Configuration Settings" section on page 49-6 for information about adding and configuring DNs.

Step 8   To return to the main MGCP gateway configuration window for the gateway to which you just added the ports, choose **Back to MGCP Configuration** in the Related Links drop-down list box and click **Go**.

Step 9   To reset the gateway and apply the changes, click **Reset**.

Step 10   Repeat Step 4 through Step 8 to add additional FXS ports.

Additional Information

See the "Related Topics" section on page 69-76.

Adding FXO Ports to an MGCP Gateway

You can use Foreign Exchange Office (FXO) ports for connecting to a central office or PBX. Use this procedure to add and configure FXO ports for loop start or ground start on an MGCP gateway.

> **Note**   Cisco CallManager assumes all loop-start trunks lack positive disconnect supervision. Configure trunks with positive disconnect supervision as ground start, so active calls can be maintained during a Cisco CallManager server failover.

Before You Begin

You must add an MGCP gateway before configuring ports. See the "Adding a Cisco IOS MGCP Gateway" section on page 69-2 for instructions.

Procedure

Step 1   To display the Find and List Gateways window, choose **Device** > **Gateway** or skip to Step 4 if you have already located the MGCP gateway to which you want to add FXO ports.

Step 2   Enter the appropriate search criteria to locate the MGCP gateway to which you want to add FXO ports and click **Find**. The search results window displays.

Step 3   Click the name of the desired gateway to display its MGCP configuration settings and endpoint identifiers.

Step 4   From the MGCP Configuration window, click the endpoint identifiers of the FXO port that you want to configure.

Step 5   From the Port Type drop-down list box, choose either **Ground Start** or **Loop Start**.

> **Note**   You must choose the same port type for both endpoint identifiers of the VIC-2FXO port. If you choose different port types, a message displays.

Step 6   Enter the appropriate **Gateway Configuration** and **Port Information** settings as described in the following sections:

   - FXS/FXO Port Configuration Settings, page 69-16
   - Loop-Start Port Configuration Settings, page 69-62
   - Ground-Start Port Configuration Settings, page 69-63

Step 7   Click **Save**.

Step 8   To return to the main MGCP gateway configuration window for the gateway to which you just added the ports, choose **Back to MGCP Configuration** in the Related Links drop-down list box and click **Go**.

Step 9   To reset the gateway and apply the changes, click **Reset**.

Step 10   To add more FXO ports, repeat Step 4 though Step 7.

Additional Information

See the "Related Topics" section on page 69-76.

Adding Digital Access T1 Ports to an MGCP Gateway

Use this procedure to add Digital Access T1 (T1-CAS) ports to an MGCP gateway.

Step 1   To display the Find and List Gateways window, choose **Device** > **Gateway** or skip to Step 4 if you have already located the MGCP gateway to which you want to add T1-CAS ports.

Step 2   To locate the MGCP gateway to which you want to add a Digital Access T1 (T1-CAS) port, enter the appropriate search criteria.

Step 3   To display its MGCP configuration settings and endpoint identifiers, click the name of the desired gateway.

Step 4	From the Gateway Configuration window, click the endpoint identifier of the Digital Access T1 (T1-CAS) port that you want to configure.
	In the Device Protocol drop-down list box that displays, choose **Digital Access T1** and click **Next**.
	See the "Port Configuration Settings" section on page 69-59 for the appropriate settings for the port type that you choose.
Step 5	Enter the appropriate Gateway Configuration settings. See the "Digital Access T1 Configuration Settings" section on page 69-40 for details.
Step 6	Click **Save**.
Step 7	To reset the gateway and apply the changes, click **Reset**.

Additional Information

See the "Related Topics" section on page 69-76.

Adding a Digital Access PRI Device to an MGCP Gateway

Step 1	To display the Find and List Gateways window, choose **Device** > **Gateway** or skip to Step 4 if you have already located the MGCP gateway to which you want to add a port.
Step 2	To locate the MGCP gateway to which you want to add a T1 PRI or E1 PRI port, enter the appropriate search criteria.
Step 3	To display the configuration information for the selected gateway, click the name of the desired gateway in the list.
Step 4	From the Gateway Configuration window, click the endpoint identifier of the T1 PRI or E1 PRI port that you want to configure.
Step 5	Configure the T1 PRI or E1 PRI device protocol settings. See the "Digital Access PRI Port Configuration Settings" section on page 69-20 for detailed field descriptions.
Step 6	Click **Save**.
Step 7	To reset the gateway and apply the changes, click **Reset**.

Additional Information

See the "Related Topics" section on page 69-76.

Adding a BRI Port to an MGCP Gateway

The device protocols and port types that you can configure on MGCP gateways vary by the type of installed voice interface cards (VICs). This section contains the procedures for adding a BRI port to an MGCP gateway.

Procedure

Step 1	To display the Find/List Gateways window, choose **Device** > **Gateway**, or if you have already located the MGCP gateway to which you want to add a port, skip to Step 4.
Step 2	To locate the MGCP gateway to which you want to add a BRI port, enter the appropriate search criteria.

Step 3   To display the configuration information for the chosen gateway, click the name of the desired gateway in the list.

Step 4   From the MGCP Configuration window, click the endpoint identifier of the BRI port that you want to configure.

Step 5   Configure the BRI device protocol settings. See the "BRI Gateway Configuration Settings" section on page 69-33 for detailed field descriptions.

Step 6   Click **Save**.

Step 7   To apply the changes, reset the gateway.

Additional Information

See the "Related Topics" section on page 69-76.

Adding a Cisco IOS SCCP Gateway

Use the following procedure to add and configure a Cisco IOS SCCP gateway to Cisco CallManager. The following Cisco IOS gateways support SCCP:

- Cisco IOS 269xGateways
- Cisco IOS 3725 and 3745 Gateways
- Cisco VG224 Gateway

Before You Begin

Configure a Cisco IOS SCCP gateway by adding the gateway first to Cisco CallManager. Afterward, configure the gateway by using the Cisco IOS command-line interface (CLI). For procedures and commands that are required to perform this configuration, refer to the configuration documentation that is supplied with the gateway.

Procedure

Step 1   Choose **Device > Gateway**.

The Find and List Gateway window displays.

Step 2   Click **Add New**.

The Add a New Gateway window displays.

Step 3   From the Gateway Type drop-down list box, choose one of the following SCCP gateways:

- Cisco IOS 269x Gateways
- Cisco IOS 3725 and 3745 Gateways

Step 4   From the Protocol drop-down list box, choose the SCCP protocol.

Cisco IOS SCCP gateways support SCCP for interfacing to the PSTN or other non-IP devices, depending on the gateway model and the type of installed network modules and voice interface cards (VICs). A subsequent web window provides configuration for the interface.

Step 5   Click **Next**.

The Gateway Configuration window displays for this SCCP gateway.

Step 6   Enter the appropriate settings and choose the type of network modules that are installed in each slot, as described in the "Cisco IOS SCCP Gateway Configuration Settings" section on page 69-57, including any product-specific configuration settings.

Step 7   Click **Save**.

The Gateway Configuration window updates and displays drop-down list boxes with options for configuring the type of voice interface cards (VICs) in each subunit of each network module.

The available choices depend on the type of network modules that are configured in the Gateway Configuration window.

Step 8   From the drop-down list boxes, choose the type of VICs that are installed in each subunit and click **Save**.

The window updates to add links for configuring endpoint information and ports for the chosen type of VICs.

Step 9   Click an endpoint identifier (for example, 1/0/0) to configure device protocol information, add ports for the installed types of VICs and add FXS/BRI port to a SCCP gateway. See the "Cisco IP Phone Configuration" section on page 70-1 and the "Phone Configuration Settings" section on page 70-6 for details of configuring the analog phones.

Step 10   Reset the gateway to apply the changes.

Step 11   Continue configuring endpoint information and ports as needed.

Adding a Non-IOS MGCP Gateway

Use the following procedure to add the following non-IOS Cisco MGCP gateways to Cisco CallManager:

- Cisco DT-24+ Gateway
- Cisco DE-30+ Gateway
- Cisco Catalyst 6000 E1 VoIP Gateway
- Cisco Catalyst 6000 T1 VoIP Gateway

Procedure

Step 1   To display the Find and List Gateways window, choose **Device > Gateway**.

Step 2   Click the **Add New** button.

The Add a New Gateway window displays.

Step 3   From the Gateway Type drop-down list box, choose one of the following digital gateways and click **Next**:

- Cisco DT-24+ Gateway
- Cisco DE-30+ Gateway
- Cisco Catalyst 6000 E1 VoIP Gateway
- Cisco Catalyst 6000 T1 VoIP Gateway

Step 4 From the drop-down list box, choose the appropriate device protocol for the type of interfaces that you are configuring on the gateway. The available choices vary according to gateway model:

- Cisco DT-24+ Gateway or Cisco Catalyst 6000 T1 VoIP Gateway—Choose either Digital Access PRI or Digital Access T1.

- Cisco DE-30+ Gateway or Cisco Catalyst 6000 E1 VoIP Gateway—The Digital Access PRI device protocol automatically gets chosen, and the Gateway Configuration window displays. Skip to Step 6.

Step 5 Click **Next**.

The Gateway Configuration window displays.

Step 6 Enter the appropriate settings, depending on whether you are configuring a Digital Access PRI interface or a Digital Access T1 interface as described in following sections:

- Digital Access PRI Port Configuration Settings, page 69-20

- Digital Access T1 Configuration Settings, page 69-40

Step 7 Click **Save**.

Step 8 If you are configuring a Digital Access T1 interface on a DT-24+ or Catalyst 6000 T1 VoIP Gateway, in the Ports pane that displays on the left side of the window, click **Add a New Port** link to configure ports.

See the "Adding Digital Access T1 Ports to an MGCP Gateway" section on page 69-6.

Step 9 To reset the gateway and apply the changes, click **Reset**.

Additional Information

See the "Related Topics" section on page 69-76.

Adding a Cisco IOS H.323 Gateway

Follow these procedures to add a Cisco IOS H.323 gateway to Cisco CallManager.

Before You Begin

Before configuring a Cisco IOS H.323 gateway for use with Cisco CallManager, you must configure the gateway by using the Cisco IOS command-line interface (CLI). Compared to MGCP gateways, H.323 gateways require more configuration on the gateway because the gateway must maintain the dial plan and route pattern. For procedures and commands that are required to perform this configuration, refer to the configuration documentation that is supplied with the gateway.

Procedure

Step 1 To display the Find and List Gateways window, choose **Device > Gateway**.

Step 2 Click the **Add New** button.

The Add a New Gateway window displays.

Step 3 From the Gateway Type drop-down list box, choose **H.323 Gateway**.

Step 4 Click **Next**.

Step 5 Enter the appropriate settings as described in "H.323 Gateway Configuration Settings" section on page 69-44.

Step 6   Click **Save**.

Step 7   To reset the gateway and apply the changes, click **Reset**.

Additional Information

See the "Related Topics" section on page 69-76.

Adding an Analog Access Gateway and Ports

Use the procedure in this section to add and configure ports for the following non-IOS Cisco analog access gateways:

- Cisco Catalyst 6000 24 Port FXS Gateway

Procedure

Step 1   To display the Find and List Gateways window, choose **Device > Gateway**.

Step 2   Click the **Add New** button.

The Add a New Gateway window displays.

Step 3   From the Gateway type drop-down list box, choose a supported analog gateway:

- Cisco Catalyst 6000 24 Port FXS Gateway

Step 4   Click **Next**.

The Gateway Configuration window displays.

Step 5   Enter the appropriate settings, as described in the "Analog Access Gateway Configuration Settings" section on page 69-53.

Step 6   Click **Save**.

Step 7   To add a port to this gateway, click the **Add a New Port** link in the Ports pane that displays on the left side of the window.

The Port Configuration window displays.

Step 8   From the drop-down list box, choose **POTS** as the port type and click **Next**.

Step 9   Enter the appropriate port configuration settings as described in the "POTS Port Configuration Settings" section on page 69-60.

Step 10   Click **Save**.

If you have inserted POTS ports, the window refreshes and displays the POTS port in the list on the left side of the window. An **Add DN** link displays to the right of the new port.

Step 11   To add a directory numbers to a POTS port, click **Add DN**.

For information about adding and configuring directory numbers, see the "Configuring a Directory Number" section on page 49-2 and the "Directory Number Configuration Settings" section on page 49-6.

Step 12   After you finish adding POTS ports and configuring directory numbers for the POTS ports, you can return to the Gateway Configuration window. In the Related Links drop-down list box, choose Configure Device and click **Go**.

Step 13   To apply the changes, click **Reset**.

Additional Information

See the "Related Topics" section on page 69-76.

Adding a Cisco VG248 Analog Phone Gateway

The Cisco VG248 Analog Phone Gateway, a standalone, rack-mounted, 48-FXS port product, allows on-premise analog telephones, fax machines, modems, voice-messaging systems, and speakerphones to register with one Cisco CallManager cluster.

The Cisco VG248 connects to a Cisco CallManager by using the Skinny Client Control Protocol to allow for enhanced features.

Cisco CallManager recognizes the Cisco VG248 as a gateway device, called a "Cisco VG248 Gateway." Additionally, Cisco CallManager treats each of the 48 ports as an individual device, similar to a Cisco IP Phone, called a "Cisco VGC Phone."

Use the following procedure to add a Cisco VG248 Gateway and to add and configure ports to the gateway.

Procedure

Step 1   To display the Find and List Gateways window, choose **Device > Gateway**.

Step 2   Click the **Add New** button.

The Add a New Gateway window displays.

Step 3   From the Gateway type drop-down list box, choose **Cisco VG248 Gateway**.

Step 4   Click **Next**.

The Gateway Configuration window displays.

Step 5   Enter the appropriate settings, as described in the "Cisco VG248 Gateway Configuration Settings" section on page 69-56.

Step 6   From the Configured Slots, VICs and Endpoints drop-down list box, choose 48_PORTS.

Step 7   Click **Save**.

The ports 0 through 48 display in the Configured Slots, VICs, and Endpoints area.

Step 8   Click a port.

The Phone Configuration window displays and lists the phone model as Cisco VGCPhone. From the Gateway Configuration window, the MAC address automatically displays.

Step 9   Enter the appropriate settings, as described in the "Phone Configuration Settings" section on page 70-6.

Step 10   Click **Save**.

Step 11   To configure a directory number for the port, click the **Add a New DN** link that displays in the Association Information area on the left side of the window.

The Directory Number Configuration window displays. For information about adding and configuring directory numbers, see the "Configuring a Directory Number" section on page 49-2.

Step 12   To configure more ports for the gateway, from the Related Link drop-down list box, choose the **Back to Gateway** link and click **Go**.

The Gateway Configuration window displays. To configure the phone settings and directory numbers for additional ports, repeat steps 8 through 11.

When you configure port 1, the **Create all Ports like Port 1** button displays on the Gateway Configuration window. This button allows you to configure ports 2 through 48 with the same parameters and settings as port 1, regardless of whether the ports are already configured.

Step 13   To apply the changes, click **Reset**.

Additional Information

See the "Related Topics" section on page 69-76.

Gateway Configuration Settings

See the following sections for tables that list detailed descriptions for all gateway configuration fields:

For detailed information about port configuration settings, see the "Port Configuration Settings" section on page 69-59.

MGCP Gateway Configuration Settings

Table 69-2 provides detailed descriptions for MGCP gateway configuration settings.

Table 69-2   *MGCP Gateway Configuration Settings*

Field	Description
Gateway Details	
Domain Name	Enter a name of up to 50 characters that identifies the Cisco MGCP gateway.
	Use the Domain Name Service (DNS) host name if it is configured to resolve correctly; otherwise, use the host name as defined on the Cisco MGCP gateway.
	If you are using the host name as it is configured on the IOS gateway, the name that you enter here must match exactly.
	For example, if the hostname is configured on the gateway to resolve to vg200-1 and the IP domain name is not configured, enter the hostname in this field (in this case, vg200-1).
	If the hostname is configured on the gateway as vg200-1 and the IP domain name is configured on the gateway as cisco.com, enter vg200-1.cisco.com in this field.
Description	Enter a description that clarifies the purpose of the device.
Cisco CallManager Group	From the drop-down list box, choose a Cisco CallManager redundancy group.
	A Cisco CallManager redundancy group includes a prioritized list of up to three Cisco CallManagers. The first Cisco CallManager in the list serves as the primary Cisco CallManager. If the primary Cisco CallManager is not available or fails, the gateway attempts to connect with the next Cisco CallManager in the list and so on.

Table 69-2   MGCP Gateway Configuration Settings (continued)

Field	Description
Configured Slots, VICs, and Endpoints	

Note You must specify the beginning port number for some VICs. For example, if the VIC in Subunit 0 begins at 0 and has two ports (0 and 1), the VIC in Subunit 1 must begin at a port number greater than 1 and have two ports (2 and 3 or 4 and 5).

Note The correct number of slots displays for each model of MGCP gateway. (The VG200 gateway has only one slot.)

Note To begin configuring ports on a module, select the module first, then click **Save**.

Field	Description
Module in Slot 0 Module in Slot 1 Module in Slot 2 Module in Slot 3 (and so on)	For each available slot on the chosen MGCP gateway, choose the type of module that is installed; for example: • NM-1V—Has one voice interface card (VIC) in Subunit 0 for FXS or FXO. When you use the VIC-2BRI-S/T-TE card with a NM-1V module, you can make two calls because the second BRI port is shut down. • NM-2V—Has two VICs, one in Subunit 0 and one in Subunit 1 for either FXS or FXO. When you use the VIC-2BRI-S/T-TE card with a NM-2V module, you can make four calls. If another VIC is in the second slot of the NM-2V, the second port on the VIC-2BRI-S/T-TE gets shut down. • NM-HDV—Has one VIC in Subunit 0 for either T1-CAS or T1-PRI, or E1-PRI. • NM-HDA—Has three VICs, one in Subunit 0, one in Subunit 1, and one in Subunit 2. • VWIC-SLOT—Has a slot for any of the following modules: VIC (FXS, FXO, or BRI), T1-CAS, T1-PRI, or E1-PRI. • AIM-VOICE-30—Has two VICs, one in Subunit 0 and one in Subunit 1 for T1-CAS, T1-PRI, or E1-PRI. • WS-X6600-24FXS—Has 24 FXS ports. • WS-X6600-6T1—Has six ports for T1 PRI or CAS. • WS-X6600-6E1—Has six ports for E1 PRI. • WS-SVC-CMM-MS—Has two port adapters, one for a T1 interface and one for an E1 interface for Europe and other countries. • None—Has no network modules installed.

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Table 69-2   MGCP Gateway Configuration Settings (continued)

Field	Description
Product-Specific Configuration	
Model-specific configuration fields defined by the gateway manufacturer	The gateway manufacturer specifies the model-specific fields under product-specific configuration. Because they are dynamically configured, they can change without notice.
	To view field descriptions and help for product-specific configuration items, click the "**?**" information icon to the right of the **Product Specific Configuration** heading to display help in a popup dialog box.
	If you need more information, refer to the documentation for the specific gateway that you are configuring or contact the manufacturer.

Additional Information

See the "Related Topics" section on page 69-76.

FXS/FXO Port Configuration Settings

Table 69-3 provides detailed descriptions for FXS/FXO port configuration settings.

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Note   For the VG200 gateway, not all switch emulation types support the network side. How you configure the gateway switch type determines whether you may or may not be able to set network side.

Table 69-3   FXS/FXO Port Configuration Settings

Field	Description
Device Information	
Description	Cisco CallManager generates a string that uniquely identifies the analog MGCP description.
	For example:
	AALN/S0/SU1/1@domain.com
	You can edit this field.
Device Pool	From the drop-down list box, choose the appropriate device pool.
	The device pool specifies a collection of properties for this device including CallManager Group, Date/Time Group, Region, and Calling Search Space for auto registration of devices.
Media Resource Group List	This list provides a prioritized grouping of media resource groups. An application chooses the required media resource, such as a Music On Hold server, from among the available media resources according to the priority order that is defined in a Media Resource Group List.

Table 69-3   FXS/FXO Port Configuration Settings (continued)

Field	Description
Packet Capture Mode (for Cisco IOS MGCP gateways only)	Configure this field only when you need to troubleshoot encrypted signaling information for the Cisco IOS MGCP gateway. Configuring packet capturing may cause call-processing interruptions. For more information on this field, refer to the *Cisco CallManager Security Guide*.
Packet Capture Duration (for Cisco IOS MGCP gateways only)	Configure this field only when you need to troubleshoot encrypted signaling information for the Cisco IOS MGCP gateway. Configuring packet capturing may cause call-processing interruptions. For more information on this field, refer to the *Cisco CallManager Security Guide*.
Calling Search Space	From the drop-down list box, choose the appropriate calling search space. A calling search space comprises a collection of route partitions that are searched to determine how a collected (originating) number should be routed.
	You can configure the number of calling search spaces that display in this drop-down list box by using the Max List Box Items enterprise parameter. If more calling search spaces exist than the Max List Box Items enterprise parameter specifies, the ellipsis button (**...**) displays next to the drop-down list box. Click the **...** button to display the Select Calling Search Space window. Enter a partial calling search space name in the **List items where Name contains** field. Click the desired calling search space name in the list of calling search spaces that displays in the **Select item to use** box and click **OK**.
	Note To set the maximum list box items, choose **System > Enterprise Parameters** and enter a value for Max List Box Items in the CCMAdmin Parameters pane.
AAR Calling Search Space	Choose the appropriate calling search space for the device to use when it performs automated alternate routing (AAR). The AAR calling search space specifies the collection of route partitions that are searched to determine how to route a collected (originating) number that is otherwise blocked due to insufficient bandwidth.
Location	Choose the appropriate location for this device. The location specifies the total bandwidth that is available for calls to and from this location. A location setting of None means that the locations feature does not keep track of the bandwidth that this device consumes.
AAR Group	Choose the automated alternate routing (AAR) group for this device. The AAR group provides the prefix digits that are used to route calls that are otherwise blocked due to insufficient bandwidth. An AAR group setting of None specifies that no rerouting of blocked calls will be attempted.

Table 69-3   FXS/FXO Port Configuration Settings (continued)

Field	Description
Network Locale	From the drop-down list box, choose the locale that is associated with the gateway. The network locale identifies a set of detailed information to support the hardware in a specific location. The network locale contains a definition of the tones and cadences that the device uses in a specific geographic area.
	Note Choose only a network locale that is already installed and that the associated devices support. The list contains all available network locales for this setting, but not all are necessarily installed. If the device is associated with a network locale that it does not support in the firmware, the device will fail to come up.
Transmit UTF-8 for Calling Party Name	This device uses the user locale setting of the device's device pool to determine whether to send Unicode and whether to translate received Unicode information.
	For the sending device, if you check this check box and the user locale setting in the device's device pool matches the terminating phone's user locale, the device sends Unicode. If the user locale settings do not match, the device sends ASCII.
	The receiving device translates incoming Unicode characters based on the user locale setting of the sending device's device pool. If the user locale setting matches the terminating phone's user locale, the phone displays the characters.
	Note The phone may display junk characters if the two ends of the trunk configure user locales that do not belong to the same language group.
Multilevel Precedence and Preemption (MLPP) Information	
MLPP Domain	From the drop-down list box, choose an MLPP domain to associate with this device. If you leave the value *<None>*, this device inherits its MLPP domain from the value set for the device's device pool. If the device pool does not have an MLPP Domain setting, this device inherits its MLPP Domain from the value set for the MLPP Domain Identifier enterprise parameter.

Table 69-3   FXS/FXO Port Configuration Settings (continued)

Field	Description
MLPP Indication	This setting is not available on all devices. If available, this setting specifies whether a device that can play precedence tones will use the capability when it places an MLPP precedence call. From the drop-down list box, choose a setting to assign to this device from the following options: • **Default**—This device inherits its MLPP indication setting from its device pool. • **Off**—This device does not handle nor process indication of an MLPP precedence call. • **On**—This device does handle and process indication of an MLPP precedence call. Note Do not configure a device with the following combination of settings: MLPP Indication is set to *Off or Default* (when default is *Off*) while MLPP Preemption is set to *Forceful*.
MLPP Preemption	This setting is not available on all devices. If available, this setting specifies whether a device that can preempt calls in progress will use the capability when it places an MLPP precedence call. From the drop-down list box, choose a setting to assign to this device from the following options: • **Default**—This device inherits its MLPP preemption setting from its device pool. • **Disabled**—This device does not allow preemption of lower precedence calls to take place when necessary for completion of higher-precedence calls. • **Forceful**—This device allows preemption of lower precedence calls to take place when necessary for completion of higher precedence calls. Note Do not configure a device with the following combination of settings: MLPP Indication is set to *Off or Default* (when default is *Off*) while MLPP Preemption is set to *Forceful*.
Port Information (POTS)	
Port Direction	Choose the direction of calls that are passing through this port: • Inbound—Use for incoming calls only. • Outbound—Use for outgoing calls. • Bothways—Use for inbound and outbound calls (default).
Prefix DN (for FXS ports)	Enter the prefix digits that are appended to the digits that this trunk receives on incoming calls. The Cisco CallManager adds prefix digits after first truncating the number in accordance with the Num Digits setting.

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Table 69-3   FXS/FXO Port Configuration Settings (continued)

Field	Description
Num Digits (for FXS ports)	Enter the number of significant digits to collect, from 0 to 32. Cisco CallManager counts significant digits from the right (last digit) of the number called. Use this field for the processing of incoming calls and to indicate the number of digits starting from the last digit of the called number that is used to route calls coming into the PRI span. See Prefix DN.
Expected Digits (for FXS ports)	Enter the number of digits that are expected on the inbound side of the trunk. For this rarely used field, leave zero as the default value if you are unsure.
SMDI Port Number (0-4096)	Use this field for analog access ports that connect to a voice-messaging system. Set the SMDI Port Number equal to the actual port number on the voice-messaging system to which the analog access port connects. **Note** Voice-mail logical ports typically must match physical ports for the voice-messaging system to operate correctly.
Unattended Port	Check this check box to indicate an unattended port on this device.
Product-Specific Configuration	
Model-specific configuration fields defined by the gateway manufacturer	The gateway manufacturer specifies the model-specific fields under product-specific configuration. Because they are dynamically configured, they can change without notice. To view field descriptions and help for product-specific configuration items, click the "**?**" information icon to the right of the **Product Specific Configuration** heading to display help in a popup dialog box. If you need more information, refer to the documentation for the specific gateway that you are configuring or contact the manufacturer.

Additional Information

See the "Related Topics" section on page 69-76.

Digital Access PRI Port Configuration Settings

Table 69-4 provides detailed descriptions for Digital Access PRI port configuration settings.

✎

Note   To determine whether your gateway supports the QSIG protocol, refer to the gateway product documentation. For information on QSIG support with Cisco CallManager, refer to the "Q.Signaling (QSIG)" section on page 40-6.

Table 69-4   Digital Access PRI Port Configuration Settings

Field	Description
Device Information	
Endpoint Name	For MGCP gateways, this display-only field contains a string that is generated by Cisco CallManager that uniquely identifies the MGCP endpoint.
	For example:
	S1/DS1-0@VG200-2
	S1 indicates slot 1, DS1-0 designates the digital interface, and @VG200-2 designates the MGCP domain name.
MAC Address	Enter MAC address of the gateway. The MAC address uniquely identifies the hardware device.
	You must enter a 12-hexadecimal character value.
Description	Enter a description that clarifies the purpose of the device.
Device Pool	From the drop-down list box, choose the appropriate device pool.
	The device pool specifies a collection of properties for this device including CallManager Group, Date/Time Group, Region, and Calling Search Space for auto-registration of devices.
Call Classification	This parameter determines whether an incoming call that is using this gateway is considered off the network (OffNet) or on the network (OnNet).
	When the Call Classification field is configured as Use System Default, the setting of the Cisco CallManager clusterwide service parameter, Call Classification, determines whether the gateway is OnNet or OffNet.
	This field provides an OnNet or OffNet alerting tone when the call is OnNet or OffNet, respectively.
Network Locale	From the drop-down list box, choose the locale that is associated with the gateway. The network locale identifies a set of detailed information to support the hardware in a specific location. The network locale contains a definition of the tones and cadences that are used by the device in a specific geographic area.
	Note Choose only a network locale that is already installed and supported by the associated devices. The list contains all available network locales for this setting, but not all are necessarily installed. If the device is associated with a network locale that it does not support in the firmware, the device will fail to come up.
Packet Capture Mode (for Cisco IOS MGCP gateways only)	Configure this field only when you need to troubleshoot encrypted signaling information for the Cisco IOS MGCP gateway. Configuring packet capturing may cause call-processing interruptions. For more information on this field, refer to the *Cisco CallManager Security Guide*.

Table 69-4   Digital Access PRI Port Configuration Settings (continued)

Field	Description
Packet Capture Duration (for Cisco IOS MGCP gateways only)	Configure this field only when you need to troubleshoot encrypted signaling information for the Cisco IOS MGCP gateway. Configuring packet capturing may cause call-processing interruptions. For more information on this field, refer to the *Cisco CallManager Security Guide*.
Media Resource Group List	This list provides a prioritized grouping of media resource groups. An application chooses the required media resource, such as a Music On Hold server, among the available media resources according to the priority order that is defined in a Media Resource List.
Location	Choose the appropriate location for this device. The location specifies the total bandwidth that is available for calls to and from this location. A location setting of None means that the locations feature does not keep track of the bandwidth that is consumed by this device.
AAR Group	Choose the automated alternate routing (AAR) group for this device. The AAR group provides the prefix digits that are used to route calls that are otherwise blocked due to insufficient bandwidth. An AAR group setting of None specifies that no rerouting of blocked calls will be attempted.
Load Information	Enter the appropriate firmware load information for the gateway. The value that you enter here overrides the default firmware load for this gateway type.
Transmit UTF-8 for Calling Party Name	This device uses the user locale setting of the device's device pool to determine whether to send Unicode and whether to translate received Unicode information. For the sending device, if you check this check box and the user locale setting in the device's device pool matches the terminating phone's user locale, the device sends Unicode. If the user locale settings do not match, the device sends ASCII. The receiving device translates incoming Unicode characters based on the user locale setting of the device pool to which the sending device belongs. If the user locale setting matches the terminating phone user locale, the phone displays the characters. **Note** The phone may display junk characters if the two ends of the trunk configure user locales that do not belong to the same language group.
V150 (subset)	Check this box to enable v150 (subset) modem relay support on the gateways. IP-STEs currently use this feature to support end-to-end secure calls to an ISDN-STE. (Applies only to T1 PRI and T1 CAS.) The default value specifies unchecked.

Table 69-4   Digital Access PRI Port Configuration Settings (continued)

Field	Description
Multilevel Precedence and Preemption (MLPP) Information	
MLPP Domain	From the drop-down list box, choose an MLPP domain to associate with this device. If you leave the value *<None>*, this device inherits its MLPP domain from the value that is set for the device's device pool. If the device pool does not have an MLPP Domain setting, this device inherits its MLPP Domain from the value that is set for the MLPP Domain Identifier enterprise parameter.
MLPP Indication	This setting is not available on all devices. If available, this setting specifies whether a device that can play precedence tones will use the capability when it places an MLPP precedence call.
	From the drop-down list box, choose a setting to assign to this device from the following options:
	• **Default**—This device inherits its MLPP indication setting from its device pool.
	• **Off**—This device does not handle nor process indication of an MLPP precedence call.
	• **On**—This device does handle and process indication of an MLPP precedence call.
	Note Do not configure a device with the following combination of settings: MLPP Indication is set to *Off or Default* (when default is *Off*) while MLPP Preemption is set to *Forceful*.
MLPP Preemption	This setting is not available on all devices. If available, this setting specifies whether a device that can preempt calls in progress will use the capability when it places an MLPP precedence call.
	From the drop-down list box, choose a setting to assign to this device from the following options:
	• **Default**—This device inherits its MLPP preemption setting from its device pool.
	• **Disabled**—This device does not allow preemption of lower precedence calls to take place when necessary for completion of higher precedence calls.
	• **Forceful**—This device allows preemption of lower precedence calls to take place when necessary for completion of higher precedence calls.
	Note Do not configure a device with the following combination of settings: MLPP Indication is set to *Off or Default* (when default is *Off*) while MLPP Preemption is set to *Forceful*.

Table 69-4   Digital Access PRI Port Configuration Settings (continued)

Field	Description
Interface Information	
PRI Protocol Type	Choose the communications protocol for the span.
	T1 PRI spans provide several options, depending on the carrier or switch; for example:
	• PRI 4ESS—AT&T Interexchange carrier
	• PRI 5E8 Custom—Cisco IP Phone
	• PRI 5E9—AT&T family local exchange switch or carrier
	• PRI DMS—MCI family local exchange switch or carrier; Canadian local exchange carrier
	• PRI ETSI SC—European local exchange carrier on T1; also, Japanese, Taiwan, Korean, and Hong Kong local exchange.
	• PRI NI2—AT&T family local exchange switch or carrier
	• PRI NTT—Japanese NTT exchange switch
	• PRI ISO QSIG T1—PBX T1 tie trunk using ISO QSIG
	• PRI ISO QSIG E1—PBX E1 tie trunk using ISO QSIG
	Determine the switch to which you are connecting and the preferred protocol; for example:
	• Nortel Meridian—DMS, 5E8 Custom
	• Lucent Definity—4ESS or 5E8
	• Madge (Teleos) box—5E8 Teleos
	• Intecom PBX—5E8 Intecom
Protocol Side	Choose the appropriate protocol side. This setting specifies whether the gateway connects to a Central Office/Network device or to a User device.
	Make sure that the two ends of the PRI connection use opposite settings. For example, if you connect to a PBX and the PBX uses User as its protocol side, choose Network for this device. Typically, use User for this option for central office connections.
Channel Selection Order	Choose the order in which channels or ports are enabled from first (lowest number port) to last (highest number port), or from last to first.
	Valid entries include TOP_DOWN (first to last) or BOTTOM_UP (last to first). If you are not sure which port order to use, choose TOP_DOWN.

Table 69-4   Digital Access PRI Port Configuration Settings (continued)

Field	Description
Channel IE Type	Choose one of the following values to specify whether channel selection is presented as a channel map or a slot map: • Timeslot Number—B-channel usage always indicates actual timeslot map format (such as 1-15 and 17-31 for E1). • Slotmap—B-channel usage always indicates a slot map format. • Use Number When 1B—Channel usage indicates a channel map for one B-channel but indicates a slot map if more than one B-channel exists. • Continuous Number—Configures a continuous range of slot numbers (1-30) as the E1 logical channel number instead of the noncontinuous actual timeslot number (1-15 and 17-31).
PCM Type	Specify the digital encoding format. Choose one of the following formats: • a-law: Use for Europe and the rest of the world. • mu-law: Use for North America, Hong Kong, Taiwan, and Japan.
Delay for first restart (1/8 sec ticks)	Enter the rate at which the spans are brought in service. The delay occurs when many PRI spans are enabled on a system and the Inhibit Restarts at PRI Initialization check box is unchecked. For example, set the first five cards to 0 and set the next five cards to 16. (Wait 2 seconds before bringing them in service.)
Delay between restarts (1/8 sec ticks)	Enter the time between restarts. The delay occurs when a PRI RESTART gets sent if the Inhibit Restarts check box is unchecked.
Inhibit restarts at PRI initialization	A RESTART or SERVICE message confirms the status of the ports on a PRI span. If RESTART or SERVICE messages are not sent, Cisco CallManager assumes the ports are in service. When the D-Channel successfully connects with another PRI D-Channel, it sends a RESTART or SERVICE message when this check box is unchecked.
Enable status poll	Check the check box to enable the Cisco CallManager advanced service parameter, Change B-Channel Maintenance Status. This service parameter allows you to take individual B-channels out of service for an MGCP T1/E1 PRI gateway in real time. Uncheck this check box to disable the service parameter "Change B-Channel Maintenance Status." **Note** Default leaves this field unchecked.
Unattended Port	Check this check box to indicate an unattended port on this device.

Table 69-4   Digital Access PRI Port Configuration Settings (continued)

Field	Description
Call Routing Information - Inbound Calls	
Significant Digits	Choose the number of significant digits to collect, from 0 to 32 or All. Cisco CallManager counts significant digits from the right (last digit) of the number that is called. If you choose *All*, the Cisco CallManager does not truncate the inbound number. EXAMPLE Digits received are 123456. Significant digits setting is 4. Digits translated are 3456. Use for the processing of incoming calls and to indicate the number of digits, starting from the last digit of the called number, that are used to route calls that are coming into the PRI span. See Prefix DN.
Calling Search Space	From the drop-down list box, choose the appropriate calling search space. A calling search space designates a collection of route partitions that are searched to determine how a collected (originating) number should be routed. You can configure the number of calling search spaces that display in this drop-down list box by using the Max List Box Items enterprise parameter. If more calling search spaces exist than the Max List Box Items enterprise parameter specifies, the ellipsis button (**...**) displays next to the drop-down list box. Click the **...** button to display the Select Calling Search Space window. Enter a partial calling search space name in the **List items where Name contains** field. Click the desired calling search space name in the list of calling search spaces that displays in the **Select item to use** box and click **OK**. **Note** To set the maximum list box items, choose **System > Enterprise Parameters** and choose **CCMAdmin Parameters**.
AAR Calling Search Space	Choose the appropriate calling search space for the device to use when automated alternate routing (AAR) is performed. The AAR calling search space specifies the collection of route partitions that are searched to determine how to route a collected (originating) number that is otherwise blocked due to insufficient bandwidth.
Prefix DN	Enter the prefix digits that are appended to the digits that this trunk receives on incoming calls. The Cisco CallManager adds prefix digits after first truncating the number in accordance with the Num Digits setting.

Table 69-4   Digital Access PRI Port Configuration Settings (continued)

Field	Description
Call Routing Information - Outbound Calls	
Calling Party Presentation	Choose whether you want the Cisco CallManager to allow or restrict the display of the calling party phone number.
	Choose *Default* if you do not want to change calling line ID presentation. Choose *Allowed* if you want Cisco CallManager to send "Calling Line ID Allowed" on outbound calls. Choose *Restricted* if you want Cisco CallManager to send "Calling Line ID Restricted" on outbound calls.
	For more information about this field, see Table 17-6 in the "Calling Party Number Transformations Settings" section in the *Cisco CallManager System Guide*.
Calling Party Selection	Any outbound call on a gateway can send directory number information. Choose which directory number is sent:
	• Originator—Send the directory number of the calling device.
	• First Redirect Number—Send the directory number of the redirecting device.
	• Last Redirect Number—Send the directory number of the last device to redirect the call.
	• First Redirect Number (External)—Send the directory number of the first redirecting device with the external phone mask applied.
	• Last Redirect Number (External)—Send the directory number of the last redirecting device with the external phone mask applied.

Table 69-4   *Digital Access PRI Port Configuration Settings (continued)*

Field	Description
Called party IE number type unknown	Choose the format for the number type in called party directory numbers.
	Cisco CallManager sets the called directory number (DN) type. Cisco recommends that you do not change the default value unless you have advanced experience with dialing plans such as NANP or the European dialing plan. You may need to change the default in Europe because Cisco CallManager does not recognize European national dialing patterns. You can also change this setting when you are connecting to a PBX that expects the called directory number to be encoded to a non-national type numbering plan.
	Choose one of the following options:
	• Cisco CallManager—Use when the Cisco CallManager sets the directory number type.
	• Unknown—Use when the dialing plan is unknown.
	• National—Use when you are dialing within the dialing plan for your country.
	• International—Use when you are dialing outside the dialing plan for your country.
	• Subscriber—Use when you are dialing a subscriber by using a shortened subscriber number.
Calling party IE number type unknown	Choose the format for the number type in calling party directory numbers.
	Cisco CallManager sets the calling directory number (DN) type. Cisco recommends that you do not change the default value unless you have advanced experience with dialing plans such as NANP or the European dialing plan. You may need to change the default in Europe because Cisco CallManager does not recognize European national dialing patterns. You can also change this setting when you are connecting to a PBX that expects the calling directory number to be encoded to a non-national type numbering plan.
	Choose one of the following options:
	• Cisco CallManager—Use when the Cisco CallManager sets the directory number type.
	• Unknown—Use when the dialing plan is unknown.
	• National—Use when you are dialing within the dialing plan for your country.
	• International—Use when you are dialing outside the dialing plan for your country.
	• Subscriber—Use when you are dialing a subscriber by using a shortened subscriber number.

Table 69-4   Digital Access PRI Port Configuration Settings (continued)

Field	Description
Called Numbering Plan	Choose the format for the numbering plan in called party directory numbers.
	Cisco CallManager sets the called DN numbering plan. Cisco recommends that you do not change the default value unless you have advanced experience with dialing plans such as NANP or the European dialing plan. You may need to change the default in Europe because Cisco CallManager does not recognize European national dialing patterns. You can also change this setting when you are connecting to PBXs by using routing as a non-national type number.
	Choose one of the following options:
	• Cisco CallManager—Use when the Cisco CallManager sets the Numbering Plan in the directory number.
	• ISDN—Use when you are dialing outside the dialing plan for your country.
	• National Standard—Use when you are dialing within the dialing plan for your country.
	• Private—Use when you are dialing within a private network.
	• Unknown—Use when the dialing plan is unknown.
Calling Numbering Plan	Choose the format for the numbering plan in calling party directory numbers.
	Cisco CallManager sets the calling DN numbering plan. Cisco recommends that you do not change the default value unless you have advanced experience with dialing plans such as NANP or the European dialing plan. You may need to change the default in Europe because Cisco CallManager does not recognize European national dialing patterns. You can also change this setting when you are connecting to PBXs by using routing as a non-national type number.
	Choose one of the following options:
	• Cisco CallManager—Use when the Cisco CallManager sets the Numbering Plan in the directory number.
	• ISDN—Use when you are dialing outside the dialing plan for your country.
	• National Standard—Use when you are dialing within the dialing plan for your country.
	• Private—Use when you are dialing within a private network.
	• Unknown—Use when the dialing plan is unknown.
Number of digits to strip	Choose the number of digits to strip on outbound calls, from 0 to 32.
	For example, when 8889725551234 is dialed, and the number of digits to strip is 3, Cisco CallManager strips 888 from the outbound number.

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Table 69-4   Digital Access PRI Port Configuration Settings (continued)

Field	Description
Caller ID DN	Enter the pattern that you want to use for calling line ID, from 0 to 24 digits. For example, in North America: • 555XXXX = Variable calling line ID, where X equals an extension number. The CO appends the number with the area code if you do not specify it. • 5555000 = Fixed calling line ID, where you want the Corporate number to be sent instead of the exact extension from which the call is placed. The CO appends the number with the area code if you do not specify it.
SMDI Base Port	Enter the first SMDI port number of the T1 span. If you set this parameter to a nonzero value and this gateway belongs to an unknown type of route list, route group, or route list, hunting does not continue past this span.
PRI Protocol Type Specific Information	
Display IE Delivery	Check the check box to enable delivery of the display information element (IE) in SETUP and NOTIFY messages (for DMS protocol) for the calling and connected party name delivery service.
Redirecting Number IE Delivery— Outbound	Check this check box to include the Redirecting Number IE in the outgoing SETUP message from the Cisco CallManager to indicate the first redirecting number and the redirecting reason of the call when the call is forwarded. Uncheck the check box to exclude the first redirecting number and the redirecting reason from the outgoing SETUP message. You use Redirecting Number IE for voice-messaging integration only. If your configured voice-messaging system supports Redirecting Number IE, you should check the check box.
Redirecting Number IE Delivery— Inbound	Check this check box to accept the Redirecting Number IE in the incoming SETUP message to the Cisco CallManager. Uncheck the check box to exclude the Redirecting Number IE in the incoming SETUP message to the Cisco CallManager. You use Redirecting Number IE for voice-messaging integration only. If your configured voice-messaging system supports Redirecting Number IE, you should check the check box.
Send Extra Leading Character in Display IE	Check this check box to include a special leading character byte (non ASCII, nondisplayable) in the DisplayIE field. Uncheck this check box to exclude this character byte from the Display IE field. This check box only applies to the DMS-100 protocol and the DMS-250 protocol. Default leaves this setting disabled (unchecked).

Table 69-4   Digital Access PRI Port Configuration Settings (continued)

Field	Description
Setup non-ISDN Progress Indicator IE Enable	Default leaves this setting disabled (unchecked).
	Enable this setting only if users are not receiving ringback tones on outbound calls.
	When this setting is enabled, the Cisco CallManager sends Q.931 Setup messages out digital (that is, non-H.323) gateways with the Progress Indicator field set to non-ISDN.
	This message notifies the destination device that the Cisco CallManager gateway is non-ISDN and that the destination device should play in-band ringback.
	This problem usually associates with Cisco CallManagers that connect to PBXs through digital gateways.
MCDN Channel Number Extension Bit Set to Zero	To set the channel number extension bit to zero, check the check box. To set the extension bit to 1, uncheck the check box.
	This setting only applies to the DMS-100 protocol
Send Calling Name in Facility IE	Check the check box to send the calling name in the Facility IE field. By default, the Cisco CallManager leaves the check box unchecked.
	Set this feature for a private network that has a PRI interface that is enabled for ISDN calling name delivery. When this check box is checked, the calling party's name gets sent in the Facility IE of the SETUP or FACILITY message, so the name can display on the called party's device.
	Set this feature for PRI trunks in a private network only. Do not set this feature for PRI trunks that are connected to the PSTN.
	Note This field applies to the NI2 protocol only.
Interface Identifier Present	Check the check box to indicate that an interface identifier is present. By default, the Cisco CallManager leaves the check box unchecked.
	This setting only applies to the DMS-100 protocol for digital access gateways in the Channel Identification information element (IE) of the SETUP, CALL PROCEEDING, ALERTING, and CONNECT messages.
Interface Identifier Value	Enter the value that was obtained from the PBX provider.
	This field applies to only the DMS-100 protocol. Valid values range from 0 through 255.

Table 69-4   Digital Access PRI Port Configuration Settings (continued)

Field	Description
Connected Line ID Presentation (QSIG Inbound Call)	Choose whether you want the Cisco CallManager to allow or block the connected party's phone number from displaying on an inbound caller's phone.
	This field applies only to gateways that are using QSIG protocol. The gateway applies this setting for incoming calls only.
	Choose *Default* if you do not want to change the connected line ID presentation. Choose *Allowed* if you want Cisco CallManager to send "Connected Line ID Allowed" to enable the connected party's number to display for the calling party. Choose *Restricted* if you want Cisco CallManager to send "Connected Line ID Restricted" to block the connected party's number from displaying for the calling party.
	For more information about this field, see Table 17-9 in the "Connected Party Presentation and Restriction Settings" section in the *Cisco CallManager System Guide*.
UUIE Configuration	
Passing Precedence Level Through UUIE	Check this check box to enable passing MLPP information through the PRI 4ESS UUIE field. This box is used for interworking with DRSN switch.
	The system makes this check box available only if the PRI Protocol Type value of PRI 4ESS is specified for this gateway.
	The default value specifies unchecked.
Security Access Level	Enter the value for the security access level. Valid values include 00 through 99. The system makes this field available only if the Passing Precedence Level Through UUIE check box is checked. The default value specifies 2.
Product-Specific Configuration	
Model-specific configuration fields that the gateway manufacturer defines	The gateway manufacturer specifies the model-specific fields under product-specific configuration. Because they are dynamically configured, they can change without notice.
	To view field descriptions and help for product-specific configuration items, click the "**?**" information icon to the right of the **Product Specific Configuration** heading to display help in a popup dialog box.
	If you need more information, refer to the documentation for the specific gateway that you are configuring or contact the manufacturer.

Additional Information

See the "Related Topics" section on page 69-76.

BRI Gateway Configuration Settings

Table 69-5 provides detailed descriptions for BRI configuration settings.

Table 69-5   BRI Gateway Configuration Settings

Field	Description
Device Information	
End-Point Name (MGCP gateways)	For MGCP gateways, this display-only field contains a string that Cisco CallManager generates that uniquely identifies the MGCP endpoint.
	For example:
	BRI/S1/SU0/P0@SC3640.cisco.com
	S1 indicates slot 1, SU0 indicates subunit 0, P0 indicates port 0, and @SC3640.cisco.com designates the MGCP domain name.
Description	Enter a description that clarifies the purpose of the device.
Device Pool	From the drop-down list box, choose the appropriate device pool.
	For this device, the device pool specifies a collection of properties that includes CallManager Group, Date/Time Group, Region, and Calling Search Space for auto-registration of devices.
Call Classification	This parameter determines whether an incoming call that is using this gateway is considered off the network (OffNet) or on the network (OnNet).
	When the Call Classification field is configured as Use System Default, the setting of the Cisco CallManager clusterwide service parameter, Call Classification, determines whether the gateway is OnNet or OffNet.
	This field provides an OnNet or OffNet alerting tone when the call is OnNet or OffNet, respectively.
Network Locale	From the drop-down list box, choose the locale that is associated with the gateway. The network locale identifies a set of detailed information to support the hardware in a specific location. The network locale contains a definition of the tones and cadences that devises use in a specific geographic area.
Packet Capture Mode (for Cisco IOS MGCP gateways only)	Configure this field only when you need to troubleshoot encrypted signaling information for the Cisco IOS MGCP gateway. Configuring packet capturing may cause call-processing interruptions. For more information on this field, refer to the *Cisco CallManager Security Guide*.
Packet Capture Duration (for Cisco IOS MGCP gateways only)	Configure this field only when you need to troubleshoot encrypted signaling information for the Cisco IOS MGCP gateway. Configuring packet capturing may cause call-processing interruptions. For more information on this field, refer to the *Cisco CallManager Security Guide*.

Table 69-5   BRI Gateway Configuration Settings (continued)

Field	Description
Media Resource Group List	This list provides a prioritized grouping of media resource groups. An application chooses the required media resource, such as a Music On Hold server, from among the available media resources according to the priority order that a Media Resource List defines.
Location	Choose the appropriate location for this device. The location specifies the total bandwidth that is available for calls to and from this location. A location setting of None means that the locations feature does not keep track of the bandwidth that this device consumes.
AAR Group	Choose the automated alternate routing (AAR) group for this device. The AAR group provides the prefix digits that are used to route calls that are otherwise blocked due to insufficient bandwidth. An AAR group setting of None specifies that no rerouting of blocked calls will be attempted.
Interface Information	
BRI Protocol	Choose the communications protocol for the span. BRI-NET3
Protocol Side	Choose the appropriate protocol side. This setting specifies whether the gateway connects to a Central Office/Network device or to a User device. **Note** BRI supports only the User side.
Channel Selection Order	Choose the order in which channels or ports are enabled from first (lowest number port) to last (highest number port) or from last to first. Valid entries include TOP_DOWN (first to last) or BOTTOM_UP (last to first). If you are not sure which port order to use, choose TOP_DOWN.
PCM Type	Specify the digital encoding format. Choose one of the following formats: • a-law: Use for Europe and the rest of the world. • mu-law: Use for North America, Hong Kong, Taiwan, and Japan.
Delay for First Restart (1/8 sec ticks)	Enter the rate at which the spans are brought in service. The delay occurs when many BRI spans are enabled on a system and the Inhibit Restarts at BRI Initialization check box is unchecked. For example, set the first five cards to 0 and set the next five cards to 16. (Wait 2 seconds before bringing them in service.)
Delay Between Restarts (1/8 sec ticks)	Enter the time between restarts. The delay occurs when a BRI RESTART gets sent if the Inhibit Restarts check box is unchecked.

Table 69-5   BRI Gateway Configuration Settings (continued)

Field	Description
Inhibit Restarts at BRI Initialization	A RESTART message confirms the status of the ports on a BRI span. If RESTART messages are not sent, Cisco CallManager assumes that the ports are in service.
	When the data link successfully connects with another BRI data link, it sends a RESTART message when this check box is unchecked.
Enable Status Poll	Check the check box to view the B-channel status in the debug window.
Establish Datalink on First Call	Cisco CallManager establishes the data link to the gateway when the gateway registers with Cisco CallManager.
	When you configure the gateway and switch to negotiate the TEI (terminal endpoint identifier) on the first call, you can check the check box to establish the data link on the first call.
	Note Default leaves the check box unchecked.
Call Routing Information - Inbound Calls	
Significant Digits	Choose the number of significant digits to collect, from 0 to 32 or All. Cisco CallManager counts significant digits from the right (last digit) of the number called. If you choose *All*, the Cisco CallManager does not truncate the inbound number.
| | ```
EXAMPLE
Digits received are 123456.
Significant digits setting is 4.
Digits translated are 3456.
``` |
	Use for the processing of incoming calls and to indicate the number of digits, starting from the last digit of the called number, that are used to route calls that are coming into the BRI span. See Prefix DN.
Calling Search Space	Choose the appropriate calling search space. A calling search space designates a collection of route partitions that are searched to determine how a collected (originating) number should be routed.
AAR Calling Search Space	Choose the appropriate calling search space for the device to use when automated alternate routing (AAR) is performed. The AAR calling search space specifies the collection of route partitions that are searched to determine how to route a collected (originating) number that is otherwise blocked due to insufficient bandwidth.
Prefix DN	Enter the prefix digits that are appended to the digits that this trunk receives on incoming calls.
	The Cisco CallManager adds prefix digits after first truncating the number in accordance with the Num Digits setting.

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Table 69-5   BRI Gateway Configuration Settings (continued)

Field	Description
Call Routing Information - Outbound Calls	
Calling Party Presentation	Choose whether you want the Cisco CallManager to transmit or block caller ID. Choose *Default* if you do not want to change calling party presentation. Choose *Allowed* if you want Cisco CallManager to send caller ID. Choose *Restricted* if you do not want Cisco CallManager to send caller ID.
Calling Party Selection	Any outbound call on a gateway can send directory number information. Choose which directory number is sent: • Originator—Send the directory number of the calling device. • First Redirect Number—Send the directory number of the redirecting device. • Last Redirect Number—Send the directory number of the last device to redirect the call. • First Redirecting Party (External)—Send the directory number of the first redirecting device with the external phone mask applied. • Last Redirecting Party (External)—Send the directory number of the last redirecting device with the external phone mask applied.
Called party IE number type unknown	Choose the format for the number type in called party directory numbers. Cisco CallManager sets the called directory number (DN) type. Cisco recommends that you do not change the default value unless you have advanced experience with dialing plans such as NANP or the European dialing plan. You may need to change the default in Europe because Cisco CallManager does not recognize European national dialing patterns. You can also change this setting when you are connecting to a PBX that expects the called directory number to be encoded to a non-national numbering plan type. Choose one of the following options: • CallManager—The Cisco CallManager sets the directory number type. • International—Use when you are dialing outside the dialing plan for your country. • National—Use when you are dialing within the dialing plan for your country. • Unknown—The dialing plan is unknown. • Subscriber—Use when you are dialing a subscriber by using a shortened subscriber number.

Table 69-5   BRI Gateway Configuration Settings (continued)

Field	Description
Calling party IE number type unknown	Choose the format for the number type in calling party directory numbers.
	Cisco CallManager sets the calling directory number (DN) type. Cisco recommends that you do not change the default value unless you have advanced experience with dialing plans such as NANP or the European dialing plan. You may need to change the default in Europe because Cisco CallManager does not recognize European national dialing patterns. You can also change this setting when you are connecting to a PBX that expects the calling directory number to be encoded to a non-national numbering plan type.
	Choose one of the following options:
	• CallManager—The Cisco CallManager sets the directory number type.
	• International—Use when you are dialing outside the dialing plan for your country.
	• National—Use when you are dialing within the dialing plan for your country.
	• Unknown—The dialing plan is unknown.
	• Subscriber—Use when you are dialing a subscriber by using a shortened subscriber number.
Called Numbering Plan	Choose the format for the numbering plan in called party directory numbers.
	Cisco CallManager sets the called DN numbering plan. Cisco recommends that you do not change the default value unless you have advanced experience with dialing plans such as NANP or the European dialing plan. You may need to change the default in Europe because Cisco CallManager does not recognize European national dialing patterns. You can also change this setting when you are connecting to PBXs by using routing as a non-national type number.
	Choose one of the following options:
	• CallManager—The Cisco CallManager sets the Numbering Plan in the directory number.
	• ISDN—Use when you are dialing outside the dialing plan for your country.
	• National Standard—Use when you are dialing within the dialing plan for your country.
	• Private—Use when you are dialing within a private network.
	• Unknown—The dialing plan is unknown.
	• Subscriber—Use when you are dialing a subscriber by using a shortened subscriber number.

Table 69-5   BRI Gateway Configuration Settings (continued)

Field	Description
Calling Numbering Plan	Choose the format for the numbering plan in calling party directory numbers.
	Cisco CallManager sets the calling DN numbering plan. Cisco recommends that you do not change the default value unless you have advanced experience with dialing plans such as NANP or the European dialing plan. You may need to change the default in Europe because Cisco CallManager does not recognize European national dialing patterns. You can also change this setting when you are connecting to PBXs by using routing as a non-national type number.
	Choose one of the following options:
	• CallManager—The Cisco CallManager sets the Numbering Plan in the directory number.
	• ISDN—Use when you are dialing outside the dialing plan for your country.
	• National Standard—Use when you are dialing within the dialing plan for your country.
	• Private—Use when you are dialing within a private network.
	• Unknown—The dialing plan is unknown.
	• Subscriber—Use when you are dialing a subscriber by using a shortened subscriber number.
Number of digits to strip	Choose the number of digits to strip on outbound calls, from 0 to 32.
	For example, when 8889725551234 is dialed, and the number of digits to strip is 3, Cisco CallManager strips 888 from the outbound number.
Caller ID DN	Enter the pattern that you want to use for caller ID, from 0 to 24 digits.
	For example, in North America:
	• 555XXXX = Variable caller ID, where X equals an extension number. The CO appends the number with the area code if you do not specify it.
	• 5555000 = Fixed caller ID, where you want the Corporate number to be sent instead of the exact extension from which the call is placed. The CO appends the number with the area code if you do not specify it.

Table 69-5   BRI Gateway Configuration Settings (continued)

Field	Description
BRI Protocol Type Specific Information	
Redirecting Number IE Delivery— Outbound	Check this check box to include the Redirecting Number IE in the outgoing SETUP message from the Cisco CallManager to indicate the first redirecting number and the redirecting reason of the call when the call is forwarded.
	Uncheck the check box to exclude the first redirecting number and the redirecting reason from the outgoing SETUP message.
	You use Redirecting Number IE for voice-messaging integration only. If your configured voice-messaging system supports Redirecting Number IE, you should check the check box.
	Note Default leaves the check box checked.
Redirecting Number IE Delivery— Inbound	Check this check box to accept the Redirecting Number IE in the incoming SETUP message to the Cisco CallManager.
	Uncheck the check box to exclude the Redirecting Number IE in the incoming SETUP message to the Cisco CallManager.
	You use Redirecting Number IE for voice-messaging integration only. If your configured voice-messaging system supports Redirecting Number IE, you should check the check box.
	Note Default leaves the check box checked.
Setup non-ISDN Progress Indicator IE Enable	Default leaves this setting disabled (unchecked).
	Enable this setting only if users are not receiving ringback tones on outbound calls.
	When this setting is enabled, the Cisco CallManager sends Q.931 Setup messages out digital (that is, non-H.323) gateways with the Progress Indicator field set to non-ISDN.
	This message notifies the destination device that the Cisco CallManager gateway is non-ISDN and that the destination device should play in-band ringback.
	This problem usually associates with Cisco CallManagers that connect to PBXs through digital gateways.
Product-Specific Configuration	
Model-specific configuration fields that are defined by the gateway manufacturer	The model-specific fields under product-specific configuration define the gateway manufacturer. Because they are dynamically configured, they can change without notice.
	To view field descriptions and help for product-specific configuration items, click the "**?**" information icon to the right of the **Product Specific Configuration** heading to display help in a popup dialog box.
	If you need more information, refer to the documentation for the specific gateway that you are configuring or contact the manufacturer.

Additional Information

See the "Related Topics" section on page 69-76.

Digital Access T1 Configuration Settings

Table 69-6 provides detailed descriptions for Digital Access T1 configuration settings.

Table 69-6   Digital Access T1 Configuration Settings

Field	Description
MAC Address (non-IOS gateway)	Enter MAC address of the gateway. The MAC address uniquely identifies the hardware device. You must enter a 12-hexadecimal character value.
Domain Name	For MGCP gateways, this display-only field contains a string that Cisco CallManager generates that uniquely identifies the MGCP digital interface. For example: S1/DS1-0@VG200-2 S1 indicates slot 1, DS1-0 designates the digital interface, and @VG200-2 designates the MGCP domain name.
Note Enter either a MAC address or a domain name, whichever applies.	
Description	Enter a description that clarifies the purpose of the device.
Device Pool	From the drop-down list box, choose the appropriate device pool. The device pool specifies a collection of properties for this device including CallManager Group, Date/Time Group, Region, and Calling Search Space for auto-registration of devices.
Call Classification	This parameter determines whether an incoming call that is using this gateway is considered off the network (OffNet) or on the network (OnNet). When the Call Classification field is configured as Use System Default, the setting of the Cisco CallManager clusterwide service parameter, Call Classification, determines whether the gateway is OnNet or OffNet. This field provides an OnNet or OffNet alerting tone when the call is OnNet or OffNet, respectively.
Media Resource Group List	This list provides a prioritized grouping of media resource groups. An application chooses the required media resource, such as a Music On Hold server, from among the available media resources according to the priority order that is defined in a Media Resource List.
Packet Capture Mode (for Cisco IOS MGCP gateways only)	Configure this field only when you need to troubleshoot encrypted signaling information for the Cisco IOS MGCP gateway. Configuring packet capturing may cause call-processing interruptions. For more information on this field, refer to the *Cisco CallManager Security Guide*.

Table 69-6   Digital Access T1 Configuration Settings (continued)

Field	Description
Packet Capture Duration (for Cisco IOS MGCP gateways only)	Configure this field only when you need to troubleshoot encrypted signaling information for the Cisco IOS MGCP gateway. Configuring packet capturing may cause call-processing interruptions. For more information on this field, refer to the *Cisco CallManager Security Guide*.
Calling Search Space	From the drop-down list box, choose the appropriate calling search space. A calling search space designates a collection of route partitions that are searched to determine how a collected (originating) number should be routed.
	You can configure the number of calling search spaces that display in this drop-down list box by using the Max List Box Items enterprise parameter. If more calling search spaces exist than the Max List Box Items enterprise parameter specifies, the ellipsis button (**...**) displays next to the drop-down list box. Click the **...** button to display the Select Calling Search Space window. Enter a partial calling search space name in the **List items where Name contains** field. Click the desired calling search space name in the list of calling search spaces that displays in the **Select item to use** box and click **OK**.
	Note To set the maximum list box items, choose **System > Enterprise Parameters** and choose **CCMAdmin Parameters**.
AAR Calling Search Space	Choose the appropriate calling search space for the device to use when automated alternate routing (AAR) is performed. The AAR calling search space specifies the collection of route partitions that are searched to determine how to route a collected (originating) number that is otherwise blocked due to insufficient bandwidth.
Location	Choose the appropriate location for this device. The location specifies the total bandwidth that is available for calls to and from this location. A location setting of None means that the locations feature does not keep track of the bandwidth that this device consumes.
AAR Group	Choose the automated alternate routing (AAR) group for this device. The AAR group provides the prefix digits that are used to route calls that are otherwise blocked due to insufficient bandwidth. An AAR group setting of None specifies that no rerouting of blocked calls will be attempted.
MLPP Domain	From the drop-down list box, choose an MLPP domain to associate with this device. If you leave the value *<None>*, this device inherits its MLPP domain from the value that was set for the device's device pool. If the device pool does not have an MLPP Domain setting, this device inherits its MLPP Domain from the value that was set for the MLPP Domain Identifier enterprise parameter.

Table 69-6   Digital Access T1 Configuration Settings (continued)

Field	Description
MLPP Indication	This setting is not available on all devices. If available, this setting specifies whether a device that play precedence tones will use the capability when it places an MLPP precedence call.
	From the drop-down list box, choose a setting to assign to this device from the following options:
	• **Default**—This device inherits its MLPP indication setting from its device pool.
	• **Off**—This device does not handle nor process indication of an MLPP precedence call.
	• **On**—This device does handle and process indication of an MLPP precedence call.
	Note Do not configure a device with the following combination of settings: MLPP Indication is set to *Off or Default* (when default is *Off*) while MLPP Preemption is set to *Forceful*.
MLPP Preemption	This setting is not available on all devices. If available, this setting specifies whether a device that is capable of preempting calls in progress will use the capability when it places an MLPP precedence call.
	From the drop-down list box, choose a setting to assign to this device from the following options:
	• **Default**—This device inherits its MLPP preemption setting from its device pool.
	• **Disabled**—This device does not allow preemption of lower precedence calls to take place when necessary for completion of higher precedence calls.
	• **Forceful**—This device allows preemption of lower precedence calls to take place when necessary for completion of higher precedence calls.
	Note Do not configure a device with the following combination of settings: MLPP Indication is set to *Off or Default* (when default is *Off*) while MLPP Preemption is set to *Forceful*.
Handle DTMF Precedence Signals	Check this box to enable this gateway to interpret special DTMF signals as MLPP precedence levels.
Load Information	Enter the appropriate firmware load information for the gateway.
	The values that you enter here override the default values for this gateway.
Port Selection Order	Choose the order in which channels or ports are allocated for outbound calls from first (lowest number port) to last (highest number port) or from last to first.
	Valid entries include Top Down (first to last) or Bottom Up (last to first). If you are not sure which port order to use, choose Top Down.

Table 69-6   Digital Access T1 Configuration Settings (continued)

Field	Description
Digit Sending	Choose one of the following digit-sending types for out-dialing: • DTMF—Dual-tone multifrequency. Normal touchtone dialing • MF—Multifrequency • PULSE—Pulse (rotary) dialing
Network Locale	From the drop-down list box, choose the locale that is associated with the gateway. The network locale identifies a set of detailed information to support the hardware in a specific location. The network locale contains a definition of the tones and cadences that the device uses in a specific geographic area. **Note** Choose only a network locale that is already installed and supported by the associated devices. The list contains all available network locales for this setting, but not all are necessarily installed. If the device is associated with a network locale that it does not support in the firmware, the device will fail to come up.
SMDI Base Port	Enter the first SMDI port number of the T1 span. If you set this parameter to a nonzero value and this gateway belongs to an unknown type of route list, route group, or route list, hunting does not continue past this span.
V150 (subset)	Check this box to enable v150 (subset) modem relay support on the gateways. This feature is currently used by IP-STEs to support end-to-end secure calls to an ISDN-STE. (Applies only to T1 PRI and T1 CAS.) The default value specifies unchecked.
Product-Specific Configuration	
Model-specific configuration fields that the gateway manufacturer defines	The gateway manufacturer specifies the model-specific fields under product-specific configuration. Because they are dynamically configured, they can change without notice. To view field descriptions and help for product-specific configuration items, click the "**?**" information icon to the right of the **Product Specific Configuration** heading to display help in a popup dialog box. If you need more information, refer to the documentation for the specific gateway that you are configuring or contact the manufacturer.

Additional Information

See the .

H.323 Gateway Configuration Settings

Table 69-7 lists configuration settings for H.323 gateways.

Table 69-7   *H.323 Gateway Configuration Settings*

Field	Description
Device Information	
Device Name	Enter a unique name that Cisco CallManager uses to identify the device. Use either the IP address or the host name as the device name.
Description	Enter a description that clarifies the purpose of the device.
Device Pool	From the drop-down list box, choose the appropriate device pool. The device pool specifies a collection of properties for this device including CallManager Group, Date/Time Group, Region, and Calling Search Space for auto-registration of devices.
Call Classification	This parameter determines whether an incoming call that is using this gateway is considered off the network (OffNet) or on the network (OnNet). When the Call Classification field is configured as Use System Default, the setting of the Cisco CallManager clusterwide service parameter, Call Classification, determines whether the gateway is OnNet or OffNet. This field provides an OnNet or OffNet alerting tone when the call is OnNet or OffNet, respectively.
Media Resource Group List	This list provides a prioritized grouping of media resource groups. An application chooses the required media resource, such as a Music On Hold server, among the available media resources according to the priority order that a Media Resource Group List defines.
Packet Capture Mode	Configure this field only when you need to troubleshoot encrypted signaling information for the H.323 gateway. Configuring packet capturing may cause call-processing interruptions. For more information on this field, refer to the *Cisco CallManager Security Guide*.
Packet Capture Duration	Configure this field only when you need to troubleshoot encrypted signaling information for the H.323 gateway. Configuring packet capturing may cause call-processing interruptions. For more information on this field, refer to the *Cisco CallManager Security Guide*.
Location	Choose the appropriate location for this device. The location specifies the total bandwidth that is available for calls to and from this location. A location setting of None means that the locations feature does not keep track of the bandwidth that this device consumes.

Table 69-7   *H.323 Gateway Configuration Settings (continued)*

Field	Description
AAR Group	Choose the automated alternate routing (AAR) group for this device. The AAR group provides the prefix digits that are used to route calls that are otherwise blocked due to insufficient bandwidth. An AAR group setting of None specifies that no rerouting of blocked calls will be attempted.
Tunneled Protocol	Choose the **QSIG** option if you want to use H.323 gateways to transport (tunnel) non-H.323 protocol information in H.323 signaling messages from Cisco CallManager to other Annex M.1-compliant H.323 PINXs. QSIG tunneling supports the following features: Call Completion, Call Diversion, Call Transfer, Identification Services, Message Waiting Indication, and Path Replacement. Note Refer to the *Cisco CallManager Compatibility Matrix* for information about Annex M.1 feature compatibility with third-party vendor(s).
Signaling Port	This field applies only to H.323 devices. The value designates the H.225 signaling port that this device uses. Default value specifies 1720. Valid values range from 1 to 65535.
Media Termination Point Required	If you want a Media Termination Point to implement features that H.323 does not support (such as hold and transfer), check the check box. Use this check box only for H.323 clients and H.323 devices that do not support the H.245 Empty Capabilities Set message. If you check this check box to require an MTP and this device becomes the endpoint of a video call, the call will be audio only.
Retry Video Call as Audio	This check box applies only to video endpoints that receive a call. By default, the system checks this check box to specify that this device should immediately retry a video call as an audio call (if it cannot connect as a video call) prior to sending the call to call control for rerouting. If you uncheck this check box, a video call that fails to connect as video does not try to establish as an audio call. The call then fails to call control. Call control reroutes the call within the route/hunt list. If Automatic Alternate Routing (AAR) is configured and enabled, call control also reroutes the call between route/hunt lists.

Table 69-7   H.323 Gateway Configuration Settings (continued)

Field	Description
Wait for Far End H.245 Terminal Capability Set	This field applies only to H.323 devices. By default, system checks this check box to specify that Cisco CallManager needs to receive the far-end H.245 Terminal Capability Set before it sends its H.245 Terminal Capability Set. Unchecking this check box specifies that Cisco CallManager should initiate capabilities exchange. **Note** Uncheck this check box to allow calls through H.320 gateways for ISDN calls to and from other H.323 and H.320 endpoints.
Path Replacement Support	This check box displays if you choose the QSIG option from the Tunneled Protocol drop-down list box. This setting works with QSIG tunneling (Annex M.1) to ensure that non-H.323 information gets sent on the leg of the call that uses path replacement. **Note** The default setting leaves the check box unchecked. When you choose the QSIG Tunneled Protocol option, the system automatically checks the check box.
Transmit UTF-8 for Calling Party Name	This device uses the user locale setting of the device's device pool to determine whether to send unicode and whether to translate received unicode information. For the sending device, if you check this check box and the user locale setting in the device's device pool matches the terminating phone's user locale, the device sends unicode. If the user locale settings do not match, the device sends ASCII. The receiving device translates incoming unicode characters based on the user locale setting of the sending device's device pool. If the user locale setting matches the terminating phone's user locale, the phone displays the characters. **Note** The phone may display junk characters if the two ends of the trunk configure user locales that do not belong to the same language group.

Table 69-7   *H.323 Gateway Configuration Settings (continued)*

Field	Description
SRTP Allowed	Check the SRTP Allowed check box if you want Cisco CallManager to allow secure and nonsecure calls over the gateway.
	If you do not check this check box, Cisco CallManager prevents SRTP negotiation with the gateway and uses RTP.
	⚠ **Caution** If you check this check box, Cisco strongly recommends that you configure IPSec, so you do not expose keys and other security-related information during call negotiations. If you do not configure IPSec correctly, signaling between Cisco CallManager and the gateway is nonsecure.
	For more information on encryption for gateways, refer to the *Cisco CallManager Security Guide*.
Multilevel Precedence and Preemption (MLPP) Information	
MLPP Domain	From the drop-down list box, choose an MLPP domain to associate with this device. If you leave the value *<None>*, this device inherits its MLPP domain from the value that was set for the device's device pool. If the device pool does not have an MLPP Domain setting, this device inherits its MLPP Domain from the value that was set for the MLPP Domain Identifier enterprise parameter.
MLPP Indication	This device type does not have this setting.
MLPP Preemption	This device type does not have this setting.
Call Routing Information - Inbound Calls	
Significant Digits	Significant digits represent the number of final digits that are retained on inbound calls. Use for the processing of incoming calls and to indicate the number of digits that are used to route calls coming into the device.
	Choose the number of significant digits to collect, from 0 to 32. Cisco CallManager counts significant digits from the right (last digit) of the number called.

Table 69-7   H.323 Gateway Configuration Settings (continued)

Field	Description
Calling Search Space	From the drop-down list box, choose the appropriate calling search space. A calling search space specifies the collection of Route Partitions that are searched to determine how a collected (originating) number should be routed.
	You can configure the number of calling search spaces that display in this drop-down list box by using the Max List Box Items enterprise parameter. If more calling search spaces exist than the Max List Box Items enterprise parameter specifies, the ellipsis button (**...**) displays next to the drop-down list box. Click the **...** button to display the Select Calling Search Space window. Enter a partial calling search space name in the **List items where Name contains** field. Click the desired calling search space name in the list of calling search spaces that displays in the **Select item to use** box and click **OK**.
	Note To set the maximum list box items, choose **System > Enterprise Parameters** and choose **CCMAdmin Parameters**.
AAR Calling Search Space	Choose the appropriate calling search space for the device to use when it performs automated alternate routing (AAR). The AAR calling search space specifies the collection of route partitions that are searched to determine how to route a collected (originating) number that is otherwise blocked due to insufficient bandwidth.
Prefix DN	Enter the prefix digits that are appended to the called party number on incoming calls.
	Cisco CallManager adds prefix digits after first truncating the number in accordance with the Significant Digits setting.
Redirecting Number IE Delivery—Inbound	Check this check box to accept the Redirecting Number IE in the incoming SETUP message to the Cisco CallManager.
	Uncheck the check box to exclude the Redirecting Number IE in the incoming SETUP message to the Cisco CallManager.
	You use Redirecting Number IE for voice-messaging integration only. If your configured voice-messaging system supports Redirecting Number IE, you should check the check box.
Enable Inbound FastStart	Check this check box to enable the H.323 FastStart call connections on incoming calls.
	By default, the check box remains unchecked for the H.323 gateway.
	For intercluster calls, you must check the Enable Inbound FastStart check box on Cisco CallManager servers in other clusters for the outbound FastStart feature to work.
	Note If you updated Cisco CallManager 3.3(2) servers in other clusters with support patch B, do not enable inbound FastStart because 3.3(2)spB does not support the inbound FastStart feature over intercluster trunks.

Table 69-7   H.323 Gateway Configuration Settings (continued)

Field	Description
Call Routing Information - Outbound Calls	
Calling Party Selection	Any outbound call on a gateway can send directory number information. Choose which directory number is sent: • Originator—Send the directory number of the calling device. • First Redirect Number—Send the directory number of the redirecting device. • Last Redirect Number—Send the directory number of the last device to redirect the call. • First Redirect Number (External)—Send the directory number of the first redirecting device with the external phone mask applied. • Last Redirect Number (External)—Send the directory number of the last redirecting device with the external phone mask applied.
Calling Party Presentation	Choose whether you want the Cisco CallManager to allow or restrict the display of the calling party phone number. Choose *Default* if you do not want to change calling line ID presentation. Choose *Allowed* if you want Cisco CallManager to send "Calling Line ID Allowed" on outbound calls. Choose *Restricted* if you want Cisco CallManager to send "Calling Line ID Restricted" on outbound calls. For more information about this field, see Table 17-6 in the "Calling Party Number Transformations Settings" section in the *Cisco CallManager System Guide*.

Table 69-7   H.323 Gateway Configuration Settings (continued)

Field	Description
Called party IE Number Type Unknown	Choose the format for the number type in called party directory numbers.
	Cisco CallManager sets the called directory number (DN) type. Cisco recommends that you do not change the default value unless you have advanced experience with dialing plans such as NANP or the European dialing plan. You may need to change the default in Europe because Cisco CallManager does not recognize European national dialing patterns. You can also change this setting when you are connecting to a PBX that expects the called directory number to be encoded to a non-national type numbering plan.
	Choose one of the following options:
	• Cisco CallManager—Use when the Cisco CallManager sets the directory number type.
	• Unknown—This option specifies that the dialing plan is unknown.
	• National—Use when you are dialing within the dialing plan for your country.
	• International—Use when you are dialing outside the dialing plan for your country.
	• Subscriber—Use when you are dialing a subscriber by using a shortened subscriber number.

Table 69-7   H.323 Gateway Configuration Settings (continued)

Field	Description
Calling party IE Number Type Unknown	Choose the format for the number type in calling party directory numbers.
	Cisco CallManager sets the calling directory number (DN) type. Cisco recommends that you do not change the default value unless you have advanced experience with dialing plans such as NANP or the European dialing plan. You may need to change the default in Europe because Cisco CallManager does not recognize European national dialing patterns. You can also change this setting when you are connecting to a PBX that expects the calling directory number to be encoded to a non-national type numbering plan.
	Choose one of the following options:
	• Cisco CallManager—Use when the Cisco CallManager sets the directory number type.
	• Unknown—This option specifies that the dialing plan is unknown.
	• National—Use when you are dialing within the dialing plan for your country.
	• International—Use when you are dialing outside the dialing plan for your country.
	• Subscriber—Use when you are dialing a subscriber by using a shortened subscriber number.
Called Numbering Plan	Choose the format for the numbering plan in called party directory numbers.
	Cisco CallManager sets the called DN numbering plan. Cisco recommends that you do not change the default value unless you have advanced experience with dialing plans such as NANP or the European dialing plan. You may need to change the default in Europe because Cisco CallManager does not recognize European national dialing patterns. You can also change this setting when you are connecting to PBXs by using routing as a non-national type number.
	Choose one of the following options:
	• Cisco CallManager—Use when the Cisco CallManager sets the Numbering Plan in the directory number.
	• ISDN—Use when you are dialing outside the dialing plan for your country.
	• National Standard—Use when you are dialing within the dialing plan for your country.
	• Private—Use when you are dialing within a private network.
	• Unknown—This option specifies that the dialing plan is unknown.

Table 69-7   H.323 Gateway Configuration Settings (continued)

Field	Description
Calling Numbering Plan	Choose the format for the numbering plan in calling party directory numbers.
	Cisco CallManager sets the calling DN numbering plan. Cisco recommends that you do not change the default value unless you have advanced experience with dialing plans such as NANP or the European dialing plan. You may need to change the default in Europe because Cisco CallManager does not recognize European national dialing patterns. You can also change this setting when you are connecting to PBXs by using routing as a non-national type number.
	Choose one of the following options:
	• Cisco CallManager—Use when the Cisco CallManager sets the Numbering Plan in the directory number.
	• ISDN—Use when you are dialing outside the dialing plan for your country.
	• National Standard—Use when you are dialing within the dialing plan for your country.
	• Private—Use when you are dialing within a private network.
	• Unknown—This option specifies that the dialing plan is unknown.
Caller ID DN	Enter the pattern that you want to use for calling line ID, from 0 to 24 digits.
	For example, in North America:
	• 555XXXX = Variable calling line ID, where X equals an extension number. The CO appends the number with the area code if you do not specify it.
	• 5555000 = Fixed calling line ID. Use when you want the Corporate number to be sent instead of the exact extension from which the call is placed. The CO appends the number with the area code if you do not specify it.
Display IE Delivery	Check the check box to enable delivery of the display IE in SETUP, CONNECT, and NOTIFY messages for the calling and called party name delivery service.
Redirecting Number IE Delivery—Outbound	Check this check box to include the Redirecting Number IE in the outgoing SETUP message from the Cisco CallManager to indicate the first redirecting number and the redirecting reason of the call when the call is forwarded.
	Uncheck the check box to exclude the first redirecting number and the redirecting reason from the outgoing SETUP message.
	You use Redirecting Number IE for voice-messaging integration only. If your configured voice-messaging system supports Redirecting Number IE, you should check the check box.

Table 69-7   H.323 Gateway Configuration Settings (continued)

Field	Description
Enable Outbound FastStart	Check this check box to enable the H.323 FastStart feature on outgoing calls.
	By default, the check box remains unchecked for the H.323 gateway or trunk.
	Note When you check the Enable Outbound FastStart check box, you must set the Media Termination Point Required, Media Resource Group Lists, and Codec for Outbound FastStart.
Codec For Outbound FastStart	Use the drop-down list box to choose the codec for use with the H.323 device for an outbound FastStart call:
	• G711 u-law 64K (default)
	• G711 a-law 64K
	• G723
	• G729
	• G729AnnexA
	• G729AnnexB
	• G729AnnexA-AnnexB
	Note When you check the Enable Outbound FastStart check box, you must choose the codec for supporting outbound FastStart calls. You may need to click **Save** prior to choosing the Codec For Outbound FastStart.

Additional Information

See the "Related Topics" section on page 69-76.

Analog Access Gateway Configuration Settings

Table 69-8 lists configuration settings for Analog Access gateways (Cisco Catalyst 6000 24 port FXS Gateway).

Table 69-8   Analog Access Gateway Configuration Settings

Field	Description
Device Information	
MAC Address	Enter MAC address of the gateway. The MAC address uniquely identifies the hardware device.
	You must enter a 12-hexadecimal character value.
Description	Enter the purpose of the device.

Table 69-8   Analog Access Gateway Configuration Settings (continued)

Field	Description
Device Pool	From the drop-down list box, choose the appropriate device pool.
	The device pool specifies a collection of properties for this device including CallManager Group, Date/Time Group, Region, and Calling Search Space for auto-registration of devices.
Media Resource Group List	This list provides a prioritized grouping of media resource groups. An application chooses the required media resource, such as a Music On Hold server, from among the available media resources according to the priority order that a Media Resource Group List defines.
Calling Search Space	From the drop-down list box, choose the appropriate calling search space. The calling search space specifies a collection of partitions that are searched to determine how a collected (originating) number should be routed.
	You can configure the number of calling search spaces that display in this drop-down list box by using the Max List Box Items enterprise parameter. If more calling search spaces exist than the Max List Box Items enterprise parameter specifies, the ellipsis button (**...**) displays next to the drop-down list box. Click the **...** button to display the Select Calling Search Space window. Enter a partial calling search space name in the **List items where Name contains** field. Click the desired calling search space name in the list of calling search spaces that displays in the **Select item to use** box and click **OK**.
	Note To set the maximum list box items, choose **System > Enterprise Parameters** and choose **CCMAdmin Parameters**.
AAR Calling Search Space	Choose the appropriate calling search space for the device to use when it performs automated alternate routing (AAR). The AAR calling search space specifies the collection of route partitions that are searched to determine how to route a collected (originating) number that is otherwise blocked due to insufficient bandwidth.
Location	Choose the appropriate location for this device. The location specifies the total bandwidth that is available for calls to and from this location. A location setting of None means that the locations feature does not keep track of the bandwidth that this device consumes.
AAR Group	Choose the automated alternate routing (AAR) group for this device. The AAR group provides the prefix digits that are used to route calls that are otherwise blocked due to insufficient bandwidth. An AAR group setting of None specifies that no rerouting of blocked calls will be attempted.

Table 69-8   Analog Access Gateway Configuration Settings (continued)

Field	Description
Network Locale	From the drop-down list box, choose the locale that is associated with the gateway. The network locale identifies a set of detailed information to support the hardware in a specific location. The network locale contains a definition of the tones and cadences that the device uses in a specific geographic area.
	Note Choose only a network locale that is already installed and supported by the associated devices. The list contains all available network locales for this setting, but not all are necessarily installed. If the device is associated with a network locale that it does not support in the firmware, the device will fail to come up.
Port Selection Order	Choose the order in which ports are chosen. If you are not sure which port order to use, choose Top Down:
	• Top Down—Selects ports in descending order, from port 1 to port 8.
	• Bottom Up—Selects ports in ascending order, from port 8 to port 1.
Load Information	Enter the appropriate firmware load information for the gateway.
	The value that you enter here overrides the default firmware load for this gateway type.
Transmit UTF-8 for Calling Party Name	This device uses the user locale setting of the device's device pool to determine whether to send unicode and whether to translate received unicode information.
	For the sending device, if you check this check box and the user locale setting in the device's device pool matches the terminating phone's user locale, the device sends unicode. If the user locale settings do not match, the device sends ASCII.
	The receiving device translates incoming unicode characters based on the user locale setting of the sending device's device pool. If the user locale setting matches the terminating phone's user locale, the phone displays the characters.
	Note The phone may display junk characters if the two ends of the trunk configure user locales that do not belong to the same language group.
Multilevel Precedence and Preemption (MLPP) Information	
MLPP Domain	From the drop-down list box, choose an MLPP domain to associate with this device. If you leave the value *<None>*, this device inherits its MLPP domain from the value that was set for the device's device pool. If the device pool does not have an MLPP Domain setting, this device inherits its MLPP Domain from the value that was set for the MLPP Domain Identifier enterprise parameter.
MLPP Indication	This device type does not have this setting.
MLPP Preemption	This setting does not have this device type.

Table 69-8   Analog Access Gateway Configuration Settings (continued)

Field	Description
Product-Specific Configuration	
Model-specific configuration fields that the gateway manufacturer defines	The gateway manufacturer specifies the model-specific fields under product-specific configuration. Because they are dynamically configured, they can change without notice.
	To view field descriptions and help for product-specific configuration items, click the "**?**" information icon to the right of the **Product Specific Configuration** heading to display help in a popup dialog box.
	If you need more information, refer to the documentation for the specific gateway that you are configuring or contact the manufacturer.

Additional Information

Cisco VG248 Gateway Configuration Settings

Table 69-9 lists configuration settings for the Cisco VG248 Gateways.

Table 69-9   Cisco VG248 Gateway Configuration Settings

Field	Description
MAC Address (Last 10 Characters)	Enter the last 10 digits of the Media Access Control (MAC) address for the Cisco VG248.
	Only one MAC address exists for the Cisco VG248 Analog Phone Gateway, but Cisco CallManager requires unique MAC addresses for all devices. When only 10 digits of the MAC address are entered, Cisco CallManager can use the MAC address for the gateway and append additional information to it to create the MAC addresses for the VGC phones.
	The conversion of the MAC address for each device occurs by adding the two-digit port number to the end of the MAC address (to the right of the number) and adding VGC at the beginning of the MAC address.

	`EXAMPLE`
	`MAC Address for the Cisco VG248 is`
	`0039A44218`
	`the MAC address for registered port 12 in`
	`Cisco CallManager is`
	`VGC0039A4421812`

Description	Cisco CallManager automatically provides this information by adding VGCGW immediately in front of the MAC address.
Load Information	Enter the firmware version for the Cisco VG248 that is being configured; otherwise, leave blank to use the default.

Table 69-9   Cisco VG248 Gateway Configuration Settings (continued)

Field	Description
Configured Slots, VICs and Endpoints	
Note To begin configuring ports on a module, select the module first, then click **Save**.	
48_PORTS	From the list of endpoint identifiers, choose one of the ports to configure the VGC_Phone ports.

Additional Information

See the "Related Topics" section on page 69-76.

Cisco IOS SCCP Gateway Configuration Settings

Table 69-10 lists configuration settings for the Cisco IOS SCCP gateways.

Table 69-10 Cisco IOS SCCP Gateway Configuration Settings

Field	Description
MAC Address (last 10 Characters)	Enter the last 10 digits of the Media Access Control (MAC) address for the gateway. Use the MAC address of the interface that the *sccp local* IOS command specifies on the gateway. Valid characters include the digits 0 through 9 and the uppercase characters A through F.
	The conversion of the MAC address for each device occurs by adding the three-digit mapping of the slot/subunit/port to the end of the MAC address (to the right of the number).

	`EXAMPLE`
	`MAC Address for the gateway is`
	`0006D7E5C7`
	`The MAC address in Cisco CallManager is`
	`0006D7E5C7281`
	`where 281 is the three-digit mapping of the`
	`slot/subunit/port.`
	The values 2,8 and 1 can be hex digits and each do not necessarily correspond to slot, subunit and port values.

	The system inserts the following two-character strings before the MAC address to indicate the phone device types:
	• BR—BRI phone
	• AN—Analog phone
	The system also inserts SKIGW for the gateway name.
Description	Cisco CallManager automatically provides this information by adding SKIGW immediately in front of the MAC address. You can override the description.

Table 69-10 Cisco IOS SCCP Gateway Configuration Settings (continued)

Field	Description
Cisco CallManager Group	From the drop-down list box, choose a Cisco CallManager redundancy group.
	A Cisco CallManager redundancy group includes a prioritized list of up to three Cisco CallManagers. The first Cisco CallManager in the list serves as the primary Cisco CallManager. If the primary Cisco CallManager is not available or fails, the gateway attempts to connect with the next Cisco CallManager in the list, and so on.

Configured Slots, VICS and Endpoints

Note   You must specify the beginning port number for some VICs. For example, if the VIC in Subunit 0 begins at 0 and has two ports (0 and 1); then, the VIC in Subunit 1 must begin at a port number greater than 1 and have two ports (2 and 3 or 4 and 5).

Note   The correct number of slots displays for each model of SCCP gateway.

Note   To begin configuring ports on a module, select the module first, then click **Save**.

Module in Slot 0 Module in Slot 1 Module in Slot 2 Module in Slot 3 (and so on)	For each available slot on the chosen SCCP gateway, choose the type of module that is installed. The following modules are supported.
	Network Modules (with VIC slots):
	• NM-2V—Has two VICs, one in Subunit 0 and one in Subunit 1 for FXS-SCCP.
	• NM-HD-2V—Has two VIC slots, one in Subunit 0 and one in Subunit 1 for FXS-SCCP or for BRI-NT/TE-SCCP.
	• NM-HD-2VE—Has two VIC slots, one in Subunit 0 and one in Subunit 1 for FXS-SCCP or for BRI-NT/TE-SCCP
	Network Modules (no VIC slots):
	• NM-HDA-4FXS—Has 4 FXS directly without VIC and can be extended by up to two expansion modules EM-HDA-8FXS to support 16 FXS ports.
	• EM-HDA-8FXS—Expansion module for the NM-HDA-4FXS
	Voice Interface Cards:
	• VIC-2FXS
	• VIC-4FXS
	• VIC2-2FXS
	• VIC2-2BRI-NT/TE

Table 69-10 Cisco IOS SCCP Gateway Configuration Settings (continued)

Field	Description
	At the slot level, there are four options. • NM-2V—Two subunits with option VIC-2FXS-SCCP • NM-HD-2V—Two subunits with options VIC-4FXS-SCCP, VIC2-2FXS-SCCP, VIC2-2BRI-NT/TE-SCCP • NM-HD-2VE—Two subunits with options VIC-4FXS-SCCP, VIC2-2FXS-SCCP, VIC2-2BRI-NT/TE-SCCP • NM-HDA—Three subunits with options NM-HDA-4FXS-SCCP, EM-8FXS-EM0-SCCP, EM-8FXS-EM1-SCCP In NM-HDA, these options do not represent true VICs. The VIC2-2BRI-NT/TE represents the only VIC for BRI SCCP phones. VG224 GW differs from all others. The following option supports only one slot: • ANALOG—One subunit option 24FXS-SCCP (supports 24 FXS ports) The option **None** means there is no network modules installed.
Product Specific Configuration	
Model-specific configuration fields defined by the gateway manufacturer	The gateway manufacturer specifies the model-specific fields under product-specific configuration. Because they are dynamically configured, they can change without notice. To view field descriptions and help for product-specific configuration items, click the "**?**" information icon to the right of the **Product Specific Configuration** heading to display help in a popup dialog box. If you need more information, refer to the documentation for the specific gateway that you are configuring or contact the manufacturer.

Additional Information

See the "Related Topics" section on page 69-76.

Port Configuration Settings

See the following sections for tables that list detailed descriptions for all port type configuration fields:

For detailed information about gateway configuration settings, see the Gateway Configuration Settings, page 69-13.

POTS Port Configuration Settings

Table 69-11 describes the POTS port configuration settings.

Table 69-11   POTS Port Configuration Settings

Field	Description
Port Selection	
Port Type	For POTS ports, this field displays *POTS*.
Beginning Port Number Ending Port Number	Choose whether you want to add and configure all available ports, a single port, or a range of ports by setting values for the **Beginning Port Number** and **Ending Port Number** fields: • To specify a range of ports, choose appropriate values for **Beginning Port Number** and **Ending Port Number**. • To create a single port, choose the same number in the **Beginning Port Number** and **Ending Port Number** fields. • To add all available ports, choose **All Ports** for both the **Beginning Port Number** and **Ending Port Number** fields.
Port Details	
Port Direction	Choose the direction of calls that pass through this port: • Inbound—Use for incoming calls only. • Outbound—Use for outgoing calls. • Bothways—Use for inbound and outbound calls (default).
Audio Signal Adjustment into IP Network	This field specifies the gain or loss that is applied to the received audio signal relative to the port application type. **Note** Improper gain setting may cause audio echo. Use caution when you are adjusting this setting.
Audio Signal Adjustment from IP Network	This field specifies the gain or loss that is applied to the transmitted audio signal relative to the port application type. **Note** Improper gain setting may cause audio echo. Use caution when you are adjusting this setting.
Prefix DN	Enter the prefix digits that are appended to the digits that this trunk receives on incoming calls. The Cisco CallManager adds prefix digits after it truncates the number in accordance with the Num Digits setting.
Num Digits	Enter the number of significant digits to collect, from 0 to 32. Cisco CallManager counts significant digits from the right (last digit) of the number that is called. Use this field for the processing of incoming calls and to indicate the number of digits starting from the last digit of the called number that are used to route calls that are coming into the PRI span. See Prefix DN.

Table 69-11   POTS Port Configuration Settings (continued)

Field	Description
Expected Digits	Enter the number of digits that are expected on the inbound side of the trunk. For this rarely used field, leave zero as the default value if you are unsure.
Call Restart Timer (1000-5000 ms)	Call Restart Timer (1000-5000 ms); ms indicates time in milliseconds.
Offhook Validation Timer (100-1000 ms)	Offhook Validation Timer (100-1000 ms); ms indicates time in milliseconds.
Onhook Validation Timer (100-1000 ms)	Onhook Validation Timer (100-1000 ms); ms indicates time in milliseconds.
Hookflash Timer (100-1500 ms)	Hookflash Timer (100-1500 ms); ms indicates time in milliseconds.
SMDI Port Number (0-4096)	Use this field for analog access ports that connect to a voice-messaging system. Set the SMDI Port Number equal to the actual port number on the voice-messaging system to which the analog access port connects. **Note** Voice-mail logical ports typically must match physical ports for the voice-messaging system to operate correctly.
Unattended Port	Check this check box to indicate an unattended port on this device.
Product-Specific Configuration	
Model-specific configuration fields that the gateway manufacturer defines	The gateway manufacturer specifies the model-specific fields under product-specific configuration. Because they are dynamically configured, they can change without notice. To view field descriptions and help for product-specific configuration items, click the "**?**" information icon to the right of the **Product Specific Configuration** heading to display help in a popup dialog box. If you need more information, refer to the documentation for the specific gateway that you are configuring or contact the manufacturer.

Additional Information

See the "Related Topics" section on page 69-76.

Loop-Start Port Configuration Settings

Table 69-12 describes the loop-start port configuration settings.

Table 69-12   Loop-Start Port Configuration Settings

Field	Description
Port Type	From the Port Type drop-down list box, choose **Loop Start**.
Beginning Port Number Ending Port Number	Choose whether you want to add and configure all available ports, a single port, or a range of ports by setting values for the **Port Number** and **End Port Number** fields: • To specify a range of ports, choose appropriate values for **Beginning Port Number** and **Ending Port Number**. • To create a single port, choose the same number in the **Beginning Port Number** and **Ending Port Number** fields. • To add all available ports, choose **All Ports** for both the **Beginning Port Number** and **Ending Port Number** fields.
Port Direction	Choose the direction of calls that pass through this port: • Inbound—Use for incoming calls only. • Outbound—Use for outgoing calls. • Both Ways—Use for inbound and outbound calls.
Attendant DN	Enter the directory number to which you want incoming calls routed; for example, zero or a directory number for an attendant.
Unattended Port	Check this check box to indicate an unattended port on this device.
Product-Specific Configurations	
Model-specific configuration fields that the gateway manufacturer defines	The gateway manufacturer specifies the model-specific fields under product-specific configuration. Because they are dynamically configured, they can change without notice. To view field descriptions and help for product-specific configuration items, click the "**?**" information icon to the right of the **Product Specific Configuration** heading to display help in a popup dialog box. If you need more information, refer to the documentation for the specific gateway that you are configuring or contact the manufacturer.

Additional Information

See the "Related Topics" section on page 69-76.

Ground-Start Port Configuration Settings

Table 69-13 describes the ground-start port configuration settings.

Table 69-13   Ground-Start Port Configuration Settings

Field	Description
Port Type	From the Port Type drop-down list box, choose **Ground Start**.
Beginning Port Number Ending Port Number	Choose whether you want to add and configure all available ports, a single port, or a range of ports by setting values for the **Beginning Port Number** and **Ending Port Number** fields: • To specify a range of ports, choose appropriate values for **Beginning Port Number** and **Ending Port Number**. • To create a single port, choose the same number in the **Beginning Port Number** and **Ending Port Number** fields. • To add all available ports, choose **All Ports** for both the **Beginning Port Number** and **Ending Port Number** fields.
Port Direction	Choose the direction of calls that pass through this port: • Inbound—Use for incoming calls only. • Outbound—Use for outgoing calls. • Both Ways—Use for inbound and outbound calls.
Attendant DN	Enter the number to which you want incoming calls to be routed; for example, zero or a directory number for an attendant.
Unattended Port	Check this check box to indicate an unattended port on this device.
Product-Specific Configuration	
Model-specific configuration fields that the gateway manufacturer defines	The gateway manufacturer specifies the model-specific fields under product-specific configuration. Because they are dynamically configured, they can change without notice. To view field descriptions and help for product-specific configuration items, click the "**?**" information icon to the right of the **Product Specific Configuration** heading to display help in a popup dialog box. If you need more information, refer to the documentation for the specific gateway that you are configuring or contact the manufacturer.

Additional Information

See the "Related Topics" section on page 69-76.

E & M Port Configuration Settings

E & M (Ear and Mouth) ports allow connection for PBX trunk lines (tie lines). E & M designates a signaling technique for two-wire, four-wire, and six-wire telephone and trunk interfaces.

Table 69-14 describes the E & M port configuration settings.

Table 69-14   E & M Port Configuration Settings

Field	Description
Port Type	From the Port Type drop-down list box, choose **EANDM**.
Beginning Port Number Ending Port Number	Choose whether you want to add and configure all available ports, a single port, or a range of ports by setting values for the **Beginning Port Number** and **Ending Port Number** fields: • To specify a range of ports, choose appropriate values for **Beginning Port Number** and **Ending Port Number**. • To create a single port, choose the same number in the **Beginning Port Number** and **Ending Port Number** fields. • To add all available ports, choose **All Ports** for both the **Beginning Port Number** and **Ending Port Number** fields.
Port Details	
Port Direction	Choose the direction of calls that pass through this port: • Inbound—Use for incoming calls only. • Outbound—Use for outgoing calls. • Both Ways—Use for inbound and outbound calls.
Calling Party Selection	Any outbound call on a gateway can send directory number information. Choose which directory number is sent: • Originator—Send the directory number of the calling device. • First Redirect Number—Send the directory number of the redirecting device. • Last Redirect Number—Send the directory number of the last device to redirect the call. • First Redirect Number (External)—Send the directory number of the first redirecting device with the external phone mask applied. • Last Redirect Number (External)—Send the directory number of the last redirecting device with the external phone mask applied.
Caller ID Type	Choose the caller ID type: • ANI—Choose this type to use the Asynchronous Network Interface (ANI) caller ID type. • DNIS—Choose this type to use the Dialed Number Identification Service (DNIS) caller ID type.

Table 69-14   *E & M Port Configuration Settings (continued)*

Field	Description
Caller ID DN	Enter the pattern that you want to use for calling line ID, from 0 to 24 digits. For example, in North America: • 555XXXX = Variable calling line ID, where X equals an extension number. The CO appends the number with the area code if you do not specify it. • 5555000 = Fixed calling line ID, where you want the Corporate number to be sent instead of the exact extension from which the call is placed. The CO appends the number with the area code if you do not specify it.
Prefix DN	Enter the prefix digits that are appended to the called party number on incoming calls. The Cisco CallManager adds prefix digits after first truncating the number in accordance with the Num Digits setting.
Num Digits	Choose the number of significant digits to collect, from 0 to 32. Cisco CallManager counts significant digits from the right (last digit) of the number that is called. Use this field if you check the Sig Digits check box. Use this field for the processing of incoming calls and to indicate the number of digits starting from the last digit of the called number that are used to route calls that are coming into the PRI span. See Prefix DN and Sig Digits.
Expected Digits	Enter the number of digits that are expected on the inbound side of the trunk. If you are unsure, leave zero as the default value for this rarely used field.
Product-Specific Configuration	
Model-specific configuration fields that the gateway manufacturer defines	The gateway manufacturer specifies the model-specific fields under product-specific configuration. Because they are dynamically configured, they can change without notice. To view field descriptions and help for product-specific configuration items, click the "**?**" information icon to the right of the **Product Specific Configuration** heading to display help in a popup dialog box. If you need more information, refer to the documentation for the specific gateway that you are configuring or contact the manufacturer.

Additional Information

See the "Related Topics" section on page 69-76.

Finding Specific Gateways

Because you might have hundreds of gateways in your network, Cisco CallManager lets you use specific criteria to locate specific gateways. Use these sections to find specific gateways:

Note During your work in a browser session, Cisco CallManager Administration retains your gateway search preferences. If you navigate to other menu items and return to this menu item, Cisco CallManager Administration retains your gateway search preferences until you modify your search or close the browser.

Searching by Device Name

Use this procedure if you know the device name of a specific gateway or if you want to get a listing of all gateways that are registered with Cisco CallManager.

Procedure

Step 1 Choose **Device > Gateway**.

The Find and List Gateway window displays.

Step 2 From the drop-down list box, choose **Name**; then, choose one of the following criteria:

- begins with
- contains
- ends with
- is exactly
- is not empty
- is empty

Step 3 Specify the appropriate search text, if applicable. You can also specify how many items per page to display and whether to hide or show endpoints.

Step 4 Click **Find**.

A list of discovered gateways displays by

- Device icon
- Device Name
- Description (if applicable)

- Device Pool (if applicable)

- Status

- IP Address

Tip   To search for directory numbers within the search results, click the **Search Within Results** check box and enter your search criteria as described in the previous step.

Note   You can delete or reset multiple gateways from the Find and List Gateways window by checking the check boxes next to the appropriate gateways and clicking **Delete Selected** to delete the gateways or clicking **Reset Selected** to reset the gateways. You can choose all the gateways in the window by checking the check box in the matching records title bar.

Additional Information

See the .

Searching by Description

Use this procedure if you know any key words that are used in the Description field of a specific gateway that is registered with Cisco CallManager.

Procedure

Step 1   Choose **Device > Gateway**.

The Find and List Gateways window displays.

Step 2   From the drop-down list box, choose **Description**; then, choose one of the following criteria:

- begins with

- contains

- ends with

- is exactly

- is not empty

- is empty

Step 3   Specify the appropriate search text, if applicable. You can also specify how many items per page to display and whether to hide or show endpoints.

Step 4   Click **Find**.

A list of discovered gateways displays by

- Device icon

- Device Name

- Description (if applicable)

- Device Pool

- Status

- IP Address

Tip   To search for directory numbers within the search results, click the **Search Within Results** check box and enter your search criteria as described in the previous step.

Note   You can delete or reset multiple gateways from the Find and List Gateways window by checking the check boxes next to the appropriate gateways and clicking **Delete Selected** to delete the gateways or clicking **Reset Selected** to reset the gateways. You can choose all the gateways in the window by checking the check box in the matching records title bar.

Additional Information

See the "Related Topics" section on page 69-76.

Searching by Directory Number/Route Pattern

Use this procedure to locate gateways that are assigned to a specific extension or range of extensions and that are registered with Cisco CallManager.

Procedure

Step 1   Choose **Device > Gateway**.

The Find and List Gateways window displays.

Step 2   From the drop-down list box, choose **DN/Route Pattern**; then, choose one of the following criteria:

- begins with

- contains

- ends with

- is exactly

- is not empty

- is empty

Step 3   Specify the appropriate search text, if applicable. You can also specify how many items per page to display and whether to hide or show endpoints.

Step 4   Click **Find**.

A list of discovered gateways displays by

- Device icon

- Device Name

- Description (if applicable)

- Extension (Ext.)

- Partition

- Status
- IP Address

Tip To search for directory numbers within the search results, click the **Search Within Results** check box and enter your search criteria as described in the previous step.

Note You can delete or reset multiple gateways from the Find and List Gateways window by checking the check boxes next to the appropriate gateways and clicking **Delete Selected** to delete the gateways or clicking **Reset Selected** to reset the gateways. You can choose all the gateways in the window by checking the check box in the matching records title bar.

Additional Information

Searching by Calling Search Space

Use this procedure to locate gateways that are assigned to a calling search space and that are registered with Cisco CallManager.

Procedure

Step 1 Choose **Device > Gateway**.

The Find and List Gateways window displays.

Step 2 From the drop-down list box, choose **Calling Search Space**; then, choose one of the following criteria:

- begins with
- contains
- ends with
- is exactly
- is not empty
- is empty

Step 3 Specify the appropriate search text, if applicable. You can also specify how many items per page to display and whether to hide or show endpoints.

Tip You can locate an existing calling search space by choosing one from the drop-down list box under the **Find** button. This action automatically inserts the name of the calling search space that you choose into the **Find** field.

Step 4   Click **Find**.

A list of discovered gateways displays by

- Device icon
- Device Name
- Description (if applicable)
- Calling Search Space
- Status
- IP Address

Tip   To search for directory numbers within the search results, click the **Search Within Results** check box and enter your search criteria as described in the previous step.

Note   You can delete or reset multiple gateways from the Find and List Gateways window by checking the check boxes next to the appropriate gateways and clicking **Delete Selected** to delete the gateways or clicking **Reset Selected** to reset the gateways. You can choose all the gateways in the window by checking the check box in the matching records title bar.

Additional Information

See the .

Searching by Device Pool

Use this procedure to locate gateways that are assigned to a specific device pool and that are registered with Cisco CallManager.

Procedure

Step 1   Choose **Device > Gateway**.

The Find and List Gateways window displays.

Step 2   From the drop-down list box, choose **Device Pool**; then, choose one of the following criteria:

- begins with
- contains
- ends with
- is exactly
- is not empty
- is empty

Step 3   Specify the appropriate search text, if applicable. You can also specify how many items per page to display and whether to hide or show endpoints.

Tip   You can locate an existing device pool by choosing one from the drop-down list box under the **Find** button. This action automatically inserts the name of the device pool that you choose into the **Find** field.

Step 4   Click **Find**.

A list of discovered gateways displays by

- Device icon
- Device Name
- Description (if applicable)
- Device Pool
- Status
- IP Address

Tip   To search for directory numbers within the search results, click the **Search Within Results** check box and enter your search criteria as described in the previous step.

Note   You can delete or reset multiple gateways from the Find and List Gateways window by checking the check boxes next to the appropriate gateways and clicking **Delete Selected** to delete the gateways or clicking **Reset Selected** to reset the gateways. You can choose all the gateways in the window by checking the check box in the matching records title bar.

Additional Information

See the "Related Topics" section on page 69-76.

Searching by Route Group

Use this procedure to locate gateways that are assigned to a specific route group and that are registered with Cisco CallManager.

Procedure

Step 1   Choose **Device > Gateway**.

The Find and List Gateways window displays.

Step 2   From the drop-down list box, choose **Route Group Name**; then, choose one of the following criteria:

- begins with
- contains
- ends with
- is exactly

- is not empty

- is empty

Step 3   Specify the appropriate search text, if applicable. You can also specify how many items per page to display and whether to hide or show endpoints.

Tip   You can locate an existing route group by choosing one from the drop-down list box under the **Find** button. This action automatically inserts the name of the route group that you choose into the **Find** field.

Step 4   Click **Find**.

A list of discovered gateways displays by

- Device icon

- Device Name (Port)

- Description (if applicable)

- Route Group (Priority)

- Status

- IP Address

Tip   To search for directory numbers within the search results, click the **Search Within Results** check box and enter your search criteria as described in the previous step.

Note   You can delete or reset multiple gateways from the Find and List Gateways window by checking the check boxes next to the appropriate gateways. Click **Delete Selected** to delete the gateways or click **Reset Selected** to reset the gateways. You can choose all the gateways in the window by checking the check box in the matching records title bar.

Additional Information

See the .

Searching by Device Type

Use this procedure if you know the device type of a specific gateway or if you want to get a listing of all gateways of a particular device type.

Procedure

Step 1   Choose **Device > Gateway**.

The Find and List Gateways window displays.

Step 2   From the drop-down list box, choose **Device Type**; then, choose one of the following criteria:

- begins with
- contains
- ends with
- is exactly
- is not empty
- is empty

Step 3   Specify the appropriate search text, if applicable. You can also specify how many items per page to display and whether to hide or show endpoints.

> **Tip**   You can locate an existing device type by choosing one from the drop-down list box under the **Find** button. This action automatically inserts the name of the device type that you choose into the **Find** field.

Step 4   Click **Find**.

A list of discovered gateways displays by

- Device icon
- Device Name
- Description (if applicable)
- Device Type
- Status
- IP Address

> **Tip**   To search for directory numbers within the search results, click the **Search Within Results** check box and enter your search criteria as described in the previous step.

> **Note**   You can delete or reset multiple gateways from the Find and List Gateways window by checking the check boxes next to the appropriate gateways and clicking **Delete Selected** to delete the gateways or clicking **Reset Selected** to reset the gateways. You can choose all the gateways in the window by checking the check box in the matching records title bar.

Additional Information

See the "Related Topics" section on page 69-76.

Modifying Gateways and Ports

Using Cisco CallManager, you perform the following tasks identically regardless of the gateway type:

- Using Dependency Records, page 69-74
- Deleting Gateways, page 69-74
- Resetting and Restarting Gateways, page 69-75
- Updating Gateways and Ports, page 69-76

Using Dependency Records

Gateways and ports use a variety of configuration information such as partitions, device pools, and directory numbers. Before updating or deleting gateways or ports, you can find configuration information about that gateway and port by using the Dependency Records link. To access the link, choose **Dependency Records** from the Related Links drop-down list box and click **Go**. For more information about this link, see the "Dependency Records" appendix.

Deleting Gateways

Complete the following steps to delete a gateway from Cisco CallManager.

Before You Begin

If you try to delete a gateway that a route group is using, Cisco CallManager displays a message. To find out which route groups are using the gateway, choose **Dependency Records** from the Related Links drop-down list box in the Gateway Configuration window and click **Go**. If the dependency records are not enabled for the system, the dependency records summary window displays a message. For more information about dependency records, see the "Accessing Dependency Records" section on page A-2. Before deleting a gateway that is currently in use, you must perform either or both of the following tasks:

- Assign a different gateway to any route groups that are using the gateway that you want to delete. See the "Adding Devices to a Route Group" section on page 33-5.
- Delete the route groups that are using the gateway that you want to delete. See the "Deleting a Route Group" section on page 33-6.

Procedure

Step 1   Choose **Device > Gateway**.

The Find and List Gateways window displays.

Step 2   To locate a specific gateway, enter search criteria.

Step 3   Click **Find**.

A list of discovered gateways that matches your search criteria displays.

Step 4   Check the check box next to the gateway that you want to delete.

Step 5   Click **Delete Selected**.

A message displays that states that you cannot undo this action.

Step 6 To delete the gateway, click **OK** or to cancel the operation, click **Cancel**.

> **Tip** You can delete all the gateways in the window by clicking **Select All** and then clicking **Delete Selected**.

Additional Information

See the "Related Topics" section on page 69-76.

Resetting and Restarting Gateways

Complete the following steps to reset or restart a gateway by using Cisco CallManager.

Procedure

Step 1 Choose **Device > Gateway**.

The Find and List Gateway window displays.

Step 2 To locate a specific gateway, enter search criteria.

Step 3 Click **Find**.

A list of discovered gateways that matches your search criteria displays.

Step 4 Check the check box next to the gateway that you want to reset.

Step 5 Click **Reset Selected**.

The Device Reset window displays.

Step 6 Click one of the following choices:

- **Restart**—Restarts a device without shutting it down.
- **Reset**—Shuts down a device and brings it back up.
- **Close**—Returns to the previous window without performing any action.

> **Note** Restarting or resetting an H.323 gateway does not physically restart/reset the gateway; it only reinitializes the configuration that was loaded by Cisco CallManager. When you reset any other gateway type, Cisco CallManager automatically drops the calls that are using the gateway. When you restart any other gateway type, Cisco CallManager attempts to preserve the calls that are using the gateway.

Additional Information

See the "Related Topics" section on page 69-76.

Updating Gateways and Ports

Complete the following steps to update a gateway or reconfigure gateway ports from Cisco CallManager.

Procedure

Step 1   Choose **Device > Gateway**.

The Find and List Gateways window displays.

Step 2   To locate a specific gateway, enter search criteria.

Step 3   Click **Find**.

A list of discovered devices displays.

Step 4   Click the **Device Name** of the gateway that you want to update.

The Gateway Configuration window displays.

Step 5   Update the appropriate gateway or port settings as described in the following sections.

To access gateway ports, click the icon of the gateway port or the MGCP endpoint link on the left side of the configuration window for the chosen gateway.

- MGCP Gateway Configuration Settings, page 69-14
- FXS/FXO Port Configuration Settings, page 69-16
- Digital Access PRI Port Configuration Settings, page 69-20
- Digital Access T1 Configuration Settings, page 69-40.
- Analog Access Gateway Configuration Settings, page 69-53
- Port Configuration Settings, page 69-59

Step 6   Click **Save**.

Step 7   To apply the changes, click **Reset** to reset the gateway.

Additional Information

See the .

Related Topics

All Gateway Types

Phones and Directory Numbers