



Preparing to Install the Cisco IP Phone on Your Network

Cisco IP Phones enable you to communicate using voice over a data network. To provide this capability, the IP Phones depend upon and interact with several other key Cisco IP Telephony components, including Cisco CallManager.

This chapter provides an overview of the interaction between Cisco IP Phone 7970 and other key components of the Voice over IP (VoIP) network.

This chapter includes the following topics:

- [Understanding Interactions with Other Cisco IP Telephony Products, page 2-1](#)
- [Providing Power to the Cisco IP Phone 7970, page 2-4](#)
- [Adding Phones to the Cisco CallManager Database, page 2-5](#)

Understanding Interactions with Other Cisco IP Telephony Products

To function in the IP telephony network, the Cisco IP Phone must be connected to a networking device, such as a Cisco Catalyst switch. You must also register the Cisco IP Phone with a Cisco CallManager system before sending and receiving calls.

This section includes the following topics:

- [Understanding How the Cisco IP Phone Interacts with Cisco CallManager, page 2-2](#)
- [Understanding How the Cisco IP Phone Interacts with the Cisco Catalyst Family of Switches, page 2-3](#)

Understanding How the Cisco IP Phone Interacts with Cisco CallManager

Cisco CallManager is an open and industry-standard call processing system. Cisco CallManager software runs on a Windows 2000 server and sets up and tears down calls between phones, integrating traditional PBX functionality with the corporate IP network. Cisco CallManager manages the components of the IP telephony system—the phones, access gateways, and the resources necessary for such features as call conferencing and route planning.

For information about configuring Cisco CallManager to work with the IP devices described in this chapter, refer to *Cisco CallManager Administration Guide* and the *Cisco CallManager System Guide*.



Note

If the Cisco IP Phone model that you want to configure does not appear in the Phone Type drop-down list in Cisco CallManager, go to the following URL and install the latest support patch for your version of Cisco CallManager:
<http://www.cisco.com/kobayashi/sw-center/sw-voice.shtml>

Related Topic

- [Telephony Features Available for the Phone, page 5-2](#)

Understanding How the Cisco IP Phone Interacts with the Cisco Catalyst Family of Switches

The Cisco IP Phone 7970 has an internal Ethernet switch, enabling it to route incoming traffic to the phone, to the access port (labeled 10/100 PC on the phone), or to the network port (labeled 10/100 SW on the phone). If a computer is connected to the access port, the computer and the phone share the same physical link to the switch and share the same port on the switch.

This shared physical link has the following implications for the VLAN configuration on the network:

- The current VLANs might be configured on an IP subnet basis. However, additional IP addresses might not be available to assign the phone to the same subnet as other devices connected to the same port.
- Data traffic present on the VLAN-supported phones might reduce the quality of Voice-over-IP traffic.

You can resolve these issues by isolating the voice traffic onto a separate VLAN on each of the ports connected to a phone. The switch port configured for the phone connection would have separate VLANs configured for carrying:

- Voice traffic to and from the IP phone (auxiliary VLAN)
- Data traffic to and from the PC connected to the switch through the access port of the IP phone (native VLAN)

Isolating the phones on a separate, auxiliary VLAN increases the quality of the voice traffic and allows a large number of phones to be added to an existing network where there are not enough IP addresses for each phone.

For more information, refer to the documentation included with the Cisco Catalyst switch.

Related Topic

- [Network Configuration Menu, page 4-4](#)

Providing Power to the Cisco IP Phone 7970

With its backlit color display and touchscreen, the Cisco IP Phone 7970 requires more power than other Cisco IP Phones. The following power guidelines apply to the Cisco IP Phone 7970:

- To operate in full-power mode, the Cisco IP Phone 7970 requires a Cisco-approved external power supply.
- Current in-line power solutions do not provide sufficient power to the Cisco IP Phone 7970 to operate in full-power mode. If you use this phone with existing in-line power solutions:
 - The display brightness of the LCD screen may appear noticeably dimmed. The Brightness control on the phone (**Settings > User Preferences > Brightness**) will not allow you to set the brightness higher than the low-power mode allows.
 - You cannot use an external microphone or external speakers with the phone. When the phone uses in-line power, the audio settings (**Settings > Audio Preferences**) are disabled to prevent the selection of external devices. For details about supported microphone and speakers, refer to the [“External Speakers and Microphone” section on page 3-4](#).
- The Cisco IP Phone 7970 cannot use an older external power supply (CP-CUBE-PWR).

The Cisco IP Phone 7970 uses a new power supply, CP-PWR-CUBE-2 (341-0081-01). The older power supply, CP-PWR-CUBE= (34-1537-01), does not provide sufficient power to the Cisco IP Phone 7970 and will not connect to the phone. You can use the new power supply with other Cisco IP Phones.

- The Cisco IP Phone 7970 cannot use the inline power patch panel, WS-PWR-PANEL.

This power source is not compatible with the Cisco IP Phone 7970.

- Any changes to the phone’s current power source cause the phone to restart.

If the phone starts up using in-line power and is then connected to an external power supply, the phone will restart. If the phone starts up using an external power supply but loses that connection and switches to in-line power, the phone will restart.

Adding Phones to the Cisco CallManager Database

Before installing the Cisco IP phone, you must choose a method for adding phones to the Cisco CallManager database. The following sections describe these methods:

- [Adding Phones with Auto-Registration, page 2-6](#)
- [Adding Phones with Auto-Registration and TAPS, page 2-6](#)
- [Adding Phones with Cisco CallManager Administration, page 2-7](#)
- [Adding Phones with BAT, page 2-8](#)

[Table 2-1](#) provides an overview of these methods for adding phones to the Cisco CallManager database.

Table 2-1 *Methods for Adding Phones to the Cisco CallManager Database*

Method	Requires MAC Address?	Notes
Auto-registration	No	Results in automatic assignment of directory numbers
Auto-registration with TAPS	No	Requires auto-registration and the Bulk Administration Tool (BAT); updates information in the Cisco IP Phone and in Cisco CallManager Administration
Using the Cisco CallManager Administration	Yes	Requires phones to be added individually
Using BAT only	Yes	Allows for simultaneous registration of multiple phones

Adding Phones with Auto-Registration

You can add phones with auto-registration without needing to gather MAC addresses from the phones.

When auto-registration is enabled, Cisco CallManager begins the automatic startup process to obtain a directory number. During auto-registration, Cisco CallManager automatically assigns the next available sequential directory number to the phone.

When you use this method, Cisco CallManager automatically assigns directory numbers to new phones as they register with Cisco CallManager.

You can use auto-registration to quickly enter phones into the Cisco CallManager database. You can then modify any settings, such as the directory numbers, from Cisco CallManager. Additionally, you can move auto-registered phones to new locations and assign them to different device pools without affecting their directory numbers.

Auto-registration is disabled by default.

For information about enabling and configuring auto-registration, refer to *Cisco CallManager Administration Guide*.

Related Topics

- [Adding Phones with Auto-Registration and TAPS, page 2-6](#)
- [Adding Phones with Cisco CallManager Administration, page 2-7](#)
- [Adding Phones with BAT, page 2-8](#)

Adding Phones with Auto-Registration and TAPS

You can add phones with auto-registration and TAPS without first gathering MAC addresses from phones.

TAPS, the Tool for Auto-Registered Phones Support, works with the Bulk Administration Tool (BAT) to update phones that were already added to the Cisco CallManager database with dummy MAC addresses. Use TAPS to update MAC addresses and download pre-defined configurations for phones.

To implement TAPS, you or the end-user dial a TAPS directory number and follow voice prompts. When the process is complete, the phone will have downloaded its directory number and other settings, and the phone will be updated in Cisco CallManager Administration with the correct MAC address.

You must make sure that Auto-registration is enabled in Cisco CallManager Administration (System > Cisco CallManager) for TAPS to function.

Refer to the *Bulk Administration Tool User Guide for Cisco CallManager* for detailed instructions about both BAT and TAPS.

Related Topics

- [Adding Phones with Auto-Registration, page 2-6](#)
- [Adding Phones with Cisco CallManager Administration, page 2-7](#)
- [Adding Phones with BAT, page 2-8](#)

Adding Phones with Cisco CallManager Administration

You can add phones individually to the Cisco CallManager database using Cisco CallManager Administration. To do so, you first need to obtain the MAC address for each phone.

You can determine a phone's MAC address from the phone itself or from the phone's web page. To determine the MAC address from the phone, choose **Settings > Model Information** and look at the MAC Address field. To determine the MAC address from the phone's web page, display the web page and click the **Device Information** hyperlink (see the "[Accessing the Web Page for a Phone](#)" section on page 8-2 for more information).

After you have collected MAC addresses, choose **Device > Add a New Device** in Cisco CallManager Administration to begin.

For complete instructions and conceptual information about Cisco CallManager, refer to the *Cisco CallManager Administration Guide* and the *Cisco CallManager System Guide*.

Related Topics

- [Adding Phones with Auto-Registration, page 2-6](#)
- [Adding Phones with Auto-Registration and TAPS, page 2-6](#)
- [Adding Phones with BAT, page 2-8](#)

Adding Phones with BAT

The Cisco Bulk Administration Tool (BAT) is a plug-in application for Cisco CallManager that enables you to perform batch operations, including registration, on multiple phones.

To add phones using BAT only (not in conjunction with TAPS), you first need to obtain the appropriate MAC address for each phone.

You can determine a phone's MAC address from the phone itself or from the phone's web page. To determine the MAC address from the phone, choose **Settings > Model Information** and look at the MAC Address field. To determine the MAC address from the phone's web page, display the web page and click the **Device Information** hyperlink (see the [“Accessing the Web Page for a Phone” section on page 8-2](#) for more information).

For detailed instructions about using BAT, refer to *Cisco CallManager Administration Guide* and the *Bulk Administration Tool Guide for Cisco CallManager*.

Related Topics

- [Adding Phones with Auto-Registration, page 2-6](#)
- [Adding Phones with Auto-Registration and TAPS, page 2-6](#)
- [Adding Phones with Cisco CallManager Administration, page 2-7](#)