Installing the Cisco MGCP IP Phone

This chapter contains the following sections:

Safety Notices

Read the following safety considerations before installing or using the Cisco MGCP IP phone. Translations of the warnings are available in Appendix A, "Translated Safety Warnings." Additionally, the *Regulatory Compliance and Safety Information for the Cisco IP Phone 7960, 7940, and 7910 Series* includes regulatory compliance information about your phone, which your system administrator can review.

Warning **This warning symbol means danger. You are in a situation that could cause bodily injury. Before you work on any equipment, be aware of the hazards involved with electrical circuitry and be familiar with standard practices for preventing accidents.**

Warning **Read the installation instructions before you connect the system to its power source.**

Warning **Ultimate disposal of this product should be handled according to all national laws and regulations.**

Warning **Do not work on the system or connect or disconnect cables during periods of lightning activity.**

Warning **To avoid electric shock, do not connect safety extra-low voltage (SELV) circuits to telephone network-voltage (TNV) circuits. LAN ports contain SELV circuits, and WAN ports contain TNV circuits. Some LAN and WAN ports use RJ-45 connectors. Use caution when connecting cables.**

The following warning applies when you use an external power supply.

Warning **This product depends on the building installation for short-circuit (over current) protection. Ensure that a fuse or circuit breaker no larger than 120 VAC, 15A U.S. (240 VAC, 10A international) is used on the phase conductors (all current-carrying conductors).**

Warning **The device is designed to work with TN power systems.**

Caution The Cisco MGCP IP phone is inoperable during a power outage if it is not supported by an uninterruptible power supply (UPS) when using either a local transformer or inline power on the LAN. This affects your ability to reach 911.

Prerequisites

For the Cisco MGCP IP phone to successfully operate as an MGCP endpoint in your network, your network must meet the following requirements:

- A working IP network is established.

  For more information about configuring IP, refer to *Cisco IOS IP Configuration Guide,* Release 12.2.

- VoIP is configured on your Cisco routers.

  For more information about configuring VoIP, refer to the *Cisco IOS Voice, Video, and Fax Configuration Guide,* Release 12.2 for the appropriate access platform.

- VoIP gateways are configured for MGCP.
- A TFTP server is active and contains the latest Cisco MGCP IP phone firmware image in its root directory.
- Your CA is configured and communicating with the Cisco MGCP IP phones.

Connecting the Cisco MGCP IP Phone

The Cisco MGCP IP phone has connections for connecting to the data network, for providing power to the phone, and for connecting a headset to the phone. Figure 2-1 illustrates the connections on the Cisco MGCP IP phone.

Figure 2-1 Cisco MGCP IP Phone Cable Connections

Connecting to the Network

The Cisco MGCP IP phone has two RJ-45 ports that each support 10/100 Mbps half- or full-duplex Ethernet connections to external devices—network port (labeled 10/100 SW) and access port (labeled 10/100 PC). You can use either Category 3 or 5 cabling for 10 Mpbs connections, but use Category 5 for 100 Mbps connections. On both the network port and access port, use full-duplex mode to avoid collisions.

Network Port (10/100 SW)

Use the network port to connect the phone to the network. You must use a straight-through cable on this port. The phone can also obtain inline power from the Cisco Catalyst switch over this connection. See the "Connecting to Power" section on page 2-3 for details.

Access Port (10/100 PC)

Use the access port to connect a network device, such as a computer, to the phone. You must use a straight-through cable on this port.

Connecting to Power

The Cisco MGCP IP phone can be powered by the following sources:

- External power source—Optional Cisco AC adaptor and power cord for connecting to a standard wall receptacle.
- WS-X6348-RJ45V 10/100 switching module—Provides inline power to the Cisco MGCP IP phone when connected to a Catalyst 3500, 4000, or 6000 family 10/100BASE-TX switching module.

  This module sends power on pins 1 & 2 and 3 & 6.

- WS-PWR-PANEL—Power patch panel provides power to the Cisco MGCP IP phone which allows the Cisco MGCP IP phone to be connected to existing Catalyst 4000, 5000, and 6000 family 10/100BASE-TX switching modules.

  This module sends power on pins 4, 5, 7, and 8.
- WS-X4148-RJ45V—48 port 10/100 Ethernet with inline power module for the Catalyst 4006.
- WS-X4095-PEM—VoIP DC Power Entry module for the Catalyst 4006.
- WS-X4608-2PSU and WS-X4608—External -48V DC power shelf common equipment for the Catalyst 4006 with two AC-to-DC PSUs and one empty bay for redundant option and the 110V 15A AC-to48V DC PSU redundant option for the power shelf
- WS-C3524-PWR-XL-EN—Catalyst 3524-PWR XL switch

Note Only the network port (labeled 10/100 SW) supports inline power from the Cisco Catalyst switches.

For redundancy, you can use the Cisco AC adapter even if you are using inline power from the Cisco Catalyst switches. The Cisco MGCP IP phone can share the power load being used from the inline power and external power source. If either the inline power or the external power goes down, the phone can switch entirely to the other power source.

To use this redundancy feature you *must* set the inline power mode to auto on the Cisco Catalyst switch. Next, connect the un-powered Cisco MGCP IP phone to the network. After the phone powers up, connect the external power supply to the phone.

Using a Headset

The Cisco IP Phone 7960 supports a four or six-wire headset jack. Specifically, the Cisco MGCP IP phone supports the following Plantronics headset models:

- Tristar Monaural
- Encore Monaural H91
- Encore Binaural H101

The Volume and Mute controls will also adjust volume to the earpiece and mute the speech path of the headset. The headset activation key is located on the front of the Cisco MGCP IP phone.

Note When using a headset, an amplifier is not required. However, a coil cord is required to connect the headset to the headset port on the back of your Cisco IP Phone 7940/7960. For information on ordering compatible headsets and coil cords for the Cisco IP phone 7940/7960, see http://cisco.getheadsets.com or http://vxicorp.com/cisco.

Using the Cisco MGCP IP Phone with a Catalyst Switch

To function in the IP telephony network, the Cisco MGCP IP phone must be connected to a networking device, such as a Catalyst switch, to obtain network connectivity.

The Cisco MGCP IP phone has an internal Ethernet switch, which enables it to switch traffic coming from the phone, access port, and the network port.

If a computer is connected to the access port, packets traveling to and from the computer and to and from the phone share the same physical link to the switch and the same port on the switch.

This configuration has these implications for the VLAN configuration on the network:

- The current VLANs might be configured on an IP subnet basis, and additional IP addresses might not be available to assign the phone to a port so that it belongs to the same subnet as other devices (PC) connected to the same port.
- Data traffic present on the VLAN supporting phones might reduce the quality of VoIP 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 connecting a phone would have separate VLANs configured for carrying:

- Voice traffic to and from the Cisco MGCP IP phone (auxiliary VLAN)
- Data traffic to and from the PC connected to the switch through the access port of the Cisco MGCP 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 more information, refer to the documentation included with the Cisco Catalyst switch or available online at the following URL:

http://www.cisco.com/univercd/home/index.htm