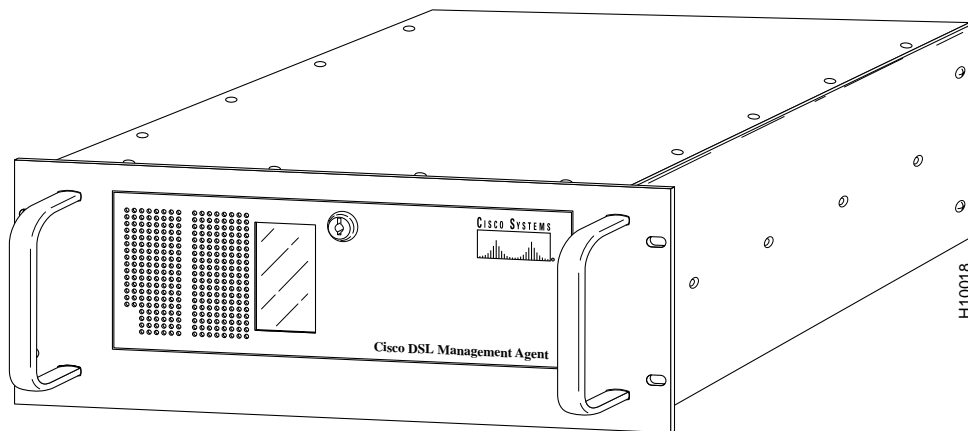# Installing the Cisco 90 Series DSL Management Agent

This chapter describes the installation procedure for the Cisco 90 Series DSL Management Agent. The DSL Management Agent is an embedded SNMP agent, and is connected to the Frame Relay network using EIA-530 or V.35 connections. It communicates to T1 digroups in one or more D4-compliant channel banks using Frame Relay PVCs.

The agent is also connected to an SNMP manager application through a TCP/IP Ethernet connection. Because it is connected to the SNMP manager using TCP/IP, you will need to acquire an IP address, subnet mask, and default gateway IP address from your system administrator before installing the Cisco 90 Series DSL Management Agent. (If the SNMP manager application is on the same Ethernet LAN as the DSL Management Agent, you don't need the default gateway IP address.)

The Cisco 90 Series DSL Management Agent is installed as a 19-in. rack-mounted system. (See Figure 2-1.)

Figure 2-1   Cisco 90 Series DSL Management Agent—Front View

Safety Considerations

Note   Read the *Regulatory Compliance and Safety Information for the Cisco 90 Series DSL Management Agent* document that shipped with the Cisco 90 Series DSL Management Agent before installing the unit. Although you probably read safety guidelines for the other products in your network, studying the material in this guide and the brief section that follows can help keep you safe and focused as you continue preparing your Cisco 90 Series DSL Management Agent for service.

Follow these guidelines to ensure general safety:

- Keep the chassis area clear and dust-free during and after installation.
- Keep tools away from walk areas where you and others could fall over them.
- Do not wear loose clothing that could get caught in the chassis.
- Wear safety glasses if you are working under any conditions that might be hazardous to your eyes.
- Do not perform any action that creates a potential hazard to people or makes the equipment unsafe.

Warning Before working on a system that has an on/off switch, turn OFF the power and unplug the power cord.

Warning Do not touch the power supply when the power cord is connected. For systems with a power switch, line voltages are present within the power supply even when the power switch is off and the power cord is connected. For systems without a power switch, line voltages are present within the power supply when the power cord is connected.

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

Warning This product relies on the building's installation for short-circuit (overcurrent) 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.

Warning This equipment is intended to be grounded. Ensure that the host is connected to earth ground during normal use.

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

Warning Before working on equipment that is connected to power lines, remove jewelry (including rings, necklaces, and watches). Metal objects will heat up when connected to power and ground and can cause serious burns or can weld the metal object to the terminals.

Warning The plug-socket combination must be accessible at all times because it serves as the main disconnecting device.

Installing the Cisco 90 Series DSL Management Agent

Each Cisco 90 Series system needs a Cisco 90 Series DSL Management Agent to allow it to be managed by an SNMP manager application. Except in very large installations, or where a redundant agent is desired, a single agent can manage all the D4 channel banks.

This section describes how to install the Cisco 90 Series DSL Management Agent. You will need a PC with a terminal emulator (such as HyperTerminal), or a terminal, to install and configure the Cisco 90 Series DSL Management Agent. The Cisco 90 Series DSL Management Agent provides a command line interface (CLI) that you use from your terminal emulator or terminal to configure the agent. For information on configuring the agent, refer to the "Configuring the Cisco 90 Series DSL Management Agent" chapter.

If you need to upgrade the agent software at any time, use the **upgrade** command from the agent CLI. The agent software upgrade process is described in the "Upgrading DSL Management Agent Software" appendix.

Required Equipment

The following equipment is required for the installation of the Cisco 90 Series DSL Management Agent:

- Cisco 90 Series DSL Management Agent (supplied).

- A V.35 or EIA-530 connection to a Frame Relay network.

- A V.35-to-EIA-530 adapter cable (supplied).

- A terminal or terminal emulator (such as HyperTerminal) running on your PC.

- An EIA/TIA-232 serial cable (supplied), which you can use to connect your terminal or PC to the agent's Console port. See Figure 2-3 for an illustration of the back panel of the agent.

- A 10BaseT connection to an Ethernet LAN.

- A 10BaseT Ethernet LAN cable.

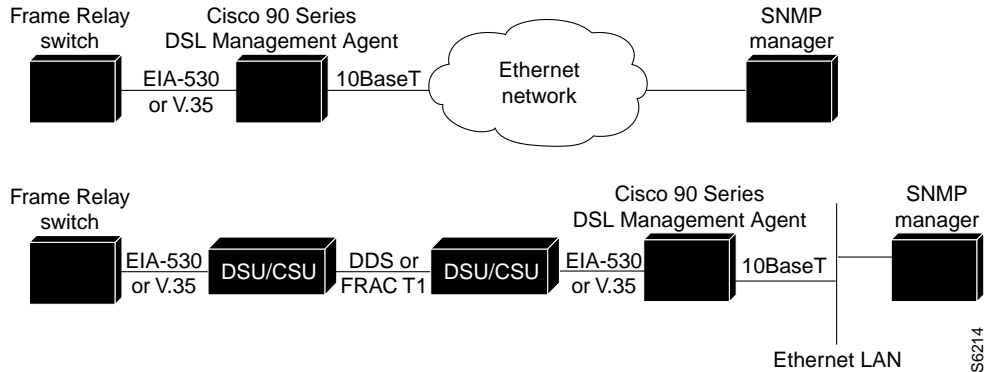## Locating the Cisco 90 Series DSL Management Agent

The Cisco 90 Series DSL Management Agent is typically centrally located near one of the switches in the Frame Relay network and connected to a V.35 or EIA-530 port on the switch. The location chosen must have Ethernet (TCP/IP) connectivity to the location(s) of the SNMP manager(s).

If a central location is not convenient, the agent can be located remotely and connected to the nearest Frame Relay switch using a DDS or Fractional T1 circuit. This may be attractive from a security perspective because it may allow the agent-to-manager SNMP traffic to be on the same LAN segment and separated by a firewall from other traffic.

Examples of these two choices are shown in Figure 2-2. Note that CSU/DSU is also called network terminating unit.

The optional backup Cisco 90 Series DSL Management Agent can be co-located with the main Cisco 90 Series DSL Management Agent or connected to a different Frame Relay switch in the network.

Figure 2-2   Locating the Cisco 90 Series DSL Management Agent

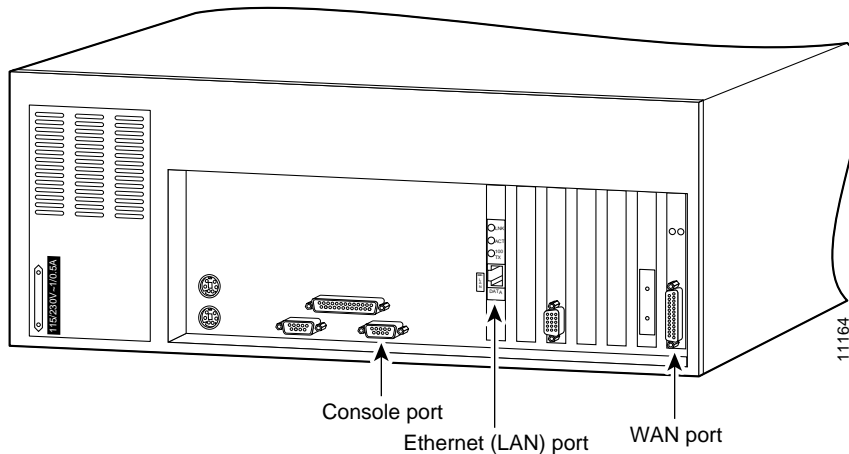## Installing the Cisco 90 Series DSL Management Agent

Install the Cisco 90 Series DSL Management Agent as follows:

Step 1   Unpack the Cisco 90 Series DSL Management Agent and place it where you want it to be located.

Step 2   If using a terminal to configure the agent, using the serial cable provided, connect the terminal's serial port (using a DB9 connector) to the Console port on the agent. Refer to Figure 2-3 for an illustration of the back panel of the agent.

If using a terminal emulator (such as HyperTerminal) on a PC to configure the agent, using the serial cable provided, connect the PC's serial port (using a DB9 connector) to the Console port on the agent. Refer to Figure 2-3 for an illustration of the back panel of the agent.

Figure 2-3   Cisco 90 Series DSL Management Agent—Back Panel

Console port
Ethernet (LAN) port   WAN port

Step 3   Connect the Cisco 90 Series DSL Management Agent's WAN port (an EIA-530 interface using a male DB-25 connector) to the Frame Relay switch or to a CSU/DSU using the V.35-to-EIA-530 adapter cable supplied.

A standard EIA-530 cable (not supplied) can be used if an EIA-530 connection is desired at the Frame Relay switch or CSU/DSU.
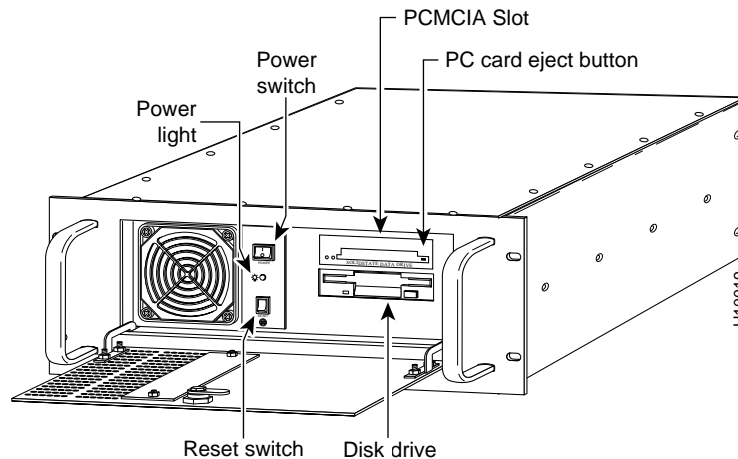
The Cisco 90 Series DSL Management Agent is configured as a data terminal equipment (DTE), so the Frame Relay switch or CSU/DSU must be configured as a data communications equipment (DCE).

The Cisco 90 Series DSL Management Agent expects to receive both transmit and receive clock from the DCE, so the Frame Relay switch or CSU/DSU must also be configured to source transmit clock (sometimes called external transmit clock). The port speed can range from 64 to 2048 kbps. In general, allow at least 4 kbps for each digroup to be managed.

The Frame Relay switch protocol should be configured to be the Frame Relay UNI (user to network interface) specification and running ANSI T1.617 Annex D local management protocol. The switch is set to be the network side and the agent is set to be the user side of the Annex D link (the agent polls the switch).

Step 4   Connect the Cisco 90 Series DSL Management Agent's 10-BaseT LAN port (an RJ-45 connector) to the local-area network (LAN) with access to the SNMP manager.

Step 5   Unlock the Cisco 90 Series DSL Management Agent front panel. (See Figure 2-4.)

Figure 2-4   Cisco 90 Series DSL Management Agent—Front Panel

Step 6   Insure that the PCMCIA Flash memory card containing the Cisco 90 Series DSL Management Agent software is already installed and firmly seated.

Caution   The PCMCIA Flash memory card is NOT hot-swappable—you should never remove the PCMCIA Flash memory card while the system is powered on. The agent's software may internally cache certain disk transfers and data, thus removing the disk can cause unpredictable results and may seriously corrupt data. You must always power down the agent before you remove the PCMCIA Flash memory card.

Step 7   Connect the power cord to the Cisco 90 Series DSL Management Agent and plug it into a 110-VAC source.

Warning   The plug-socket combination must be accessible at all times because it serves as the main disconnecting device.

Step 8 Turn ON the power switch.

After powering up the DSL Management Agent, you are ready to establish a terminal connection to the agent, described in "Setting Up a Terminal Session to the DSL Management Agent."

Setting Up a Terminal Session to the DSL Management Agent

After your PC or terminal is powered up, you are ready to set up a terminal session. You can do this by either using a terminal, or a terminal emulator utility, such as HyperTerminal, from your PC.

The steps here are general enough to apply to any terminal session.

Step 1 Set the following serial link parameters:

- Bits per second: 9600

- Data bits: 8

- Parity: None

- Stop bits: 1

- Flow control: Hardware

After setting these communication link parameters, your terminal connection to the agent should be established.

Step 2 Press **Return** or **Enter** to display the agent login banner:

```
90-Series DSL Management Agent CLI V1.0.0
Copyright (c) 1998 Cisco Systems, Inc. All Rights Reserved

Password:
```

Note It typically takes about one minute from the time the DSL Management Agent is powered on for the CLI prompt to appear. If the agent CLI prompt does not appear, verify that you selected the correct serial port, the agent is powered on, the cable connections are correct, and the PCMCIA Flash memory card is firmly seated in the slot.

Step 3 To log onto the agent CLI, use the default password **cisco.** You can change the password at any time after you are logged onto the agent CLI by using the **passwd** command.

When the `<Agent CLI>` prompt displays, you are ready to configure the Cisco 90 Series DSL Management Agent.

Verify that the WAN Connection to the Frame Relay Switch is Active

Step 1 Verify that the green LED on the WAN interface card is on.

If the green LED is not on, it indicates the WAN interface card is not receiving clock on the EIA-530/V.35 signal from the Frame Relay switch.

The red LED flashes when data is being transmitted.

Step 2 From the management station of the Frame Relay switch, verify that Annex-D is alive and functional on the link to the agent.

This completes the installation procedure for the Cisco 90 Series DSL Management Agent. For configuration instructions, proceed to the next chapter, "Configuring the Cisco 90 Series DSL Management Agent."