hp StorageWorks

HAFM server installation guide

Part Number: AA-RT4KB-TE

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This document describes how to install and configure the HP notebook PC to function as the High Availability Fabric Manager (HAFM) server.

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About this Guide

This installation guide provides information to help you:

- Set up the HP notebook PC.

- Configure the HP notebook PC to function as a High Availability Fabric Manager (HAFM) server.

- Install the HAFM server and its slide out shelf into a supported equipment cabinet.

- Contact technical support for additional assistance.

Intended Audience

This book is intended for use by administrators who are experienced with the following:

- Fibre Channel technology

- StorageWorks Fibre Channel Switches by HP

Related Documentation

For a list of corresponding documentation, see the Related Documents section of the Release Notes that came with this product.

For the latest information, documentation, and firmware releases, please visit the HP StorageWorks website:

http://h18006.www1.hp.com/storage/saninfrastructure.html

For information about Fibre Channel standards, visit the Fibre Channel Industry Association website, located at http://www.fibrechannel.org.

Document Conventions

The conventions included in Table 1 apply.

Table 1: Document Conventions

Element	Convention
Cross-reference links	Blue text: Figure 1
Key names, menu items, buttons, and dialog box titles	**Bold**
File names, application names, and text emphasis	*Italics*
User input, command names, system responses (output and messages)	`Monospace font` `COMMAND NAMES` are uppercase unless they are case sensitive
Variables	*Monospace, italic font*
Website addresses	Sans serif font (http://thenew.hp.com)

Symbols in Text

These symbols may be found in the text of this guide. They have the following meanings.

> ⚠ **WARNING: Text set off in this manner indicates that failure to follow directions in the warning could result in bodily harm or loss of life.**

> △ **CAUTION:** Text set off in this manner indicates that failure to follow directions could result in damage to equipment or data.

IMPORTANT: Text set off in this manner presents clarifying information or specific instructions.

NOTE: Text set off in this manner presents commentary, sidelights, or interesting points of information.

Symbols on Equipment

Any enclosed surface or area of the equipment marked with these symbols indicates the presence of electrical shock hazards. Enclosed area contains no operator serviceable parts.

WARNING: To reduce the risk of injury from electrical shock hazards, do not open this enclosure.

Any RJ-45 receptacle marked with these symbols indicates a network interface connection.

WARNING: To reduce the risk of electrical shock, fire, or damage to the equipment, do not plug telephone or telecommunications connectors into this receptacle.

Any surface or area of the equipment marked with these symbols indicates the presence of a hot surface or hot component. Contact with this surface could result in injury.

WARNING: To reduce the risk of injury from a hot component, allow the surface to cool before touching.

Power supplies or systems marked with these symbols indicate the presence of multiple sources of power.

WARNING: To reduce the risk of injury from electrical shock, remove all power cords to completely disconnect power from the power supplies and systems.

Any product or assembly marked with these symbols indicates that the component exceeds the recommended weight for one individual to handle safely.

WARNING: To reduce the risk of personal injury or damage to the equipment, observe local occupational health and safety requirements and guidelines for manually handling material.

Rack Stability

⚠ **WARNING: To reduce the risk of personal injury or damage to the equipment, be sure that:**

- **The leveling jacks are extended to the floor.**
- **The full weight of the rack rests on the leveling jacks.**
- **In single rack installations, the stabilizing feet are attached to the rack.**
- **In multiple rack installations, the racks are coupled.**
- **Only one rack component is extended at any time. A rack may become unstable if more than one rack component is extended for any reason.**

Getting Help

If you still have a question after reading this guide, contact an HP authorized service provider or access our website: http://thenew.hp.com.

HP Technical Support

In North America, call technical support at 1-800-652-6672, available 24 hours a day, 7 days a week.

NOTE: For continuous quality improvement, calls may be recorded or monitored.

Outside North America, call technical support at the nearest location. Telephone numbers for worldwide technical support are listed on the HP website under support: http://thenew.hp.com/country/us/eng/support.html.

Be sure to have the following information available before calling:

- Technical support registration number (if applicable)
- Product serial numbers
- Product model names and numbers
- Applicable error messages
- Operating system type and revision level
- Detailed, specific questions

HP Website

The HP website has the latest information on this product, as well as the latest drivers. Access storage at: http://thenew.hp.com/country/us/eng/prodserv/storage.html. From this website, select the appropriate product or solution.

HP Authorized Reseller

For the name of your nearest HP Authorized Reseller:

* In the United States, call 1-800-345-1518

* In Canada, call 1-800-263-5868

* Elsewhere, see the HP website for locations and telephone numbers: http://thenew.hp.com.

1

Introduction

This document describes the setup and configuration requirements for the HP notebook PC to function as an HAFM server. This is to be used as a guide for configuring the PC, installing the software, installing the sliding shelf into a cabinet, and basic operation of the HAFM server application.

Introduction

The High Availability Fabric Manager (HAFM) server is a notebook PC with the HAFM application installed. The applications provide a graphical user interface (GUI) for operating and managing HP HA-Fabric Directors and Edge Switches.

NOTE: The HAFM server and related applications provide a GUI to monitor and manage HP products. The HAFM server is a dedicated hardware and software solution that should not be used for other tasks. HP tests the HAFM application installed on the HAFM server, but does not test for compatibility with other, third-party software. Modifications to the HAFM server hardware or installation of additional software (including patches or service packs) may interfere with normal operation.

The chapters in this document are as follows:

- "System Requirements" on page 2–1 describes the hardware requirements for HAFM server operation.

- "PC Setup and Configuration" on page 3–1 describes the hardware configuration and CMOS setup.

- "Windows 2000 Setup and Configuration" on page 4–1 describes operating system configuration.

- "Internet Information Server Setup and Configuration" on page 5–1 describes Web server and FTP server installation.

- "HAFM Management Applications Installation" on page 6–1 describes steps for installing HAFM software.

- "HAFM Server Configuration" on page 7–1 describes steps for connecting the HAFM server to a LAN and configuring its network information.

- "HAFM Operation" on page 8–1 describes operating the management services of the HAFM

- "Backing Up and Restoring the HAFM Server" on page 9–1 describes steps required to perform data backup and to restore the notebook to it's original configuration.

- "Sliding Shelf Installation for HAFM Server" on page 10–1 describes steps required to install the sliding shelf for the HAFM server in a cabinet.

2

System Requirements

This chapter describes the system requirements for a HAFM server PC platform along with the actual capabilities (compliance) of the HP notebook PC.

Requirements and Capabilities of the Notebook PC

Table 2–1 lists the minimum requirements and actual capabilities of the HAFM server.

Table 2–1: HAFM Server System Requirements

Minimum Requirement	Actual Capabilities
Intel 333 Mhz	800 Mhz Pentium III
128 MB RAM	160 MB RAM
4 GB hard drive	18 GB hard drive
Single Ethernet 10/100 Mbps interface	Internal 3Com 10/100 Mini PCI adapter
Zip Drive	Internal Zip Drive (100 MB media)
CD-ROM Drive	Compliant[1]
Modem	Internal 3Com 56K Mini PCI modem (COM3)
Color VGA 1024 x 768 resolution	Compliant
Video power down when lid is closed	Compliant
Auto boot when power is applied	Compliant

1. The CD-ROM is required for the initial install of HAFM and for subsequent updates. The Zip drive is required to be installed with media for normal operation, or to service HAFM.

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PC Setup and Configuration

The notebook PC must be set up with a specific configuration for it to function properly as an HAFM server. This level of setup must be performed any time a PC is configured from scratch.

This chapter describes the requirements for setting up disk partitions and configuring certain CMOS setup options.

Drive Assignments

The HAFM software requires the following logical disk drive assignments:

- C: Hard drive partition
- D: Internal Zip drive or Internal CD-ROM drive (used only for recovery or upgrade)

CMOS Setup

Certain options must be configured properly in the CMOS Setup Utility. The Setup Utility is entered by pressing the F2 key when prompted immediately after applying power to the HP notebook PC.

All options may be left at their default settings except for specific options under the Power (APM) tab as listed below in Table 3–1. Because the PC will always have an AC power source, there is no need to have any level of power saving options enabled. Furthermore, never allow the PC to enter Hibernate mode because the PC must continue to run 24x7 to monitor the switches.

Table 3–1: CMOS Settings

Option	Setting
Intel SpeedStep Mode:	[Performance]
Power Management Mode:	[Disabled]
Smart CPU Mode:	Off

Table 3–1: CMOS Settings (Continued)

Display Time-out:	Off
Suspend Time-out:	Off
Hibernate Time-out:	Off
Hard Disk Time-out:	Off
Time-out on AC:	[Disabled]
Lid Switch Mode:	[Turn Off LCD]
Resume On Serial Ring:	[Disabled]
Resume On Time of Day:	[Disabled]
Auto Suspend on Undock:	[Never]
Auto Turn-On on Dock:	[Enabled]

Install LAN Card (Optional)

If you are implementing a public/private LAN, before proceeding with the Microsoft Windows 2000 installation, install the customer-provided 3Com 10/100 Type III CardBus PC Card in the CardBus slot.

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Windows 2000 Setup and Configuration

To install and operate HAFM on the HP notebook PC, Windows 2000 must be installed. Windows 2000 is not factory installed on the HP notebook PC. To install Windows 2000, use the HP System Recovery CDs that come with the PC. See the README.TXT file on Disk 1 of these CDs for specific instructions on performing a factory installation. Note that the PC comes with recovery CDs for both Windows NT Workstation 4.0 (single CD) and Windows 2000 Professional (two CDs). Use the System Recovery CD for Windows 2000 Professional (the dual CD set).

Because this process requires the use of a CD-ROM drive, replace the internal Zip drive with an internal CD-ROM drive prior to performing the installation.

Power Options

The default power options selected during the Windows 2000 installation allow the system to enter standby and hibernate modes after a period of inactivity. Change these defaults to prevent the PC from ever entering either of these modes by selecting a pre-defined power scheme that never allows the system to enter standby or hibernate modes.

Changing the Default Power Options

To change the default power options, complete the following steps:

1. Choose **Start > Settings > Control Panel**. The **Control Panel** window displays.

2. Double-click **Power Options**. The **Power Options Properties** dialog box displays, as shown in Figure 4–1.
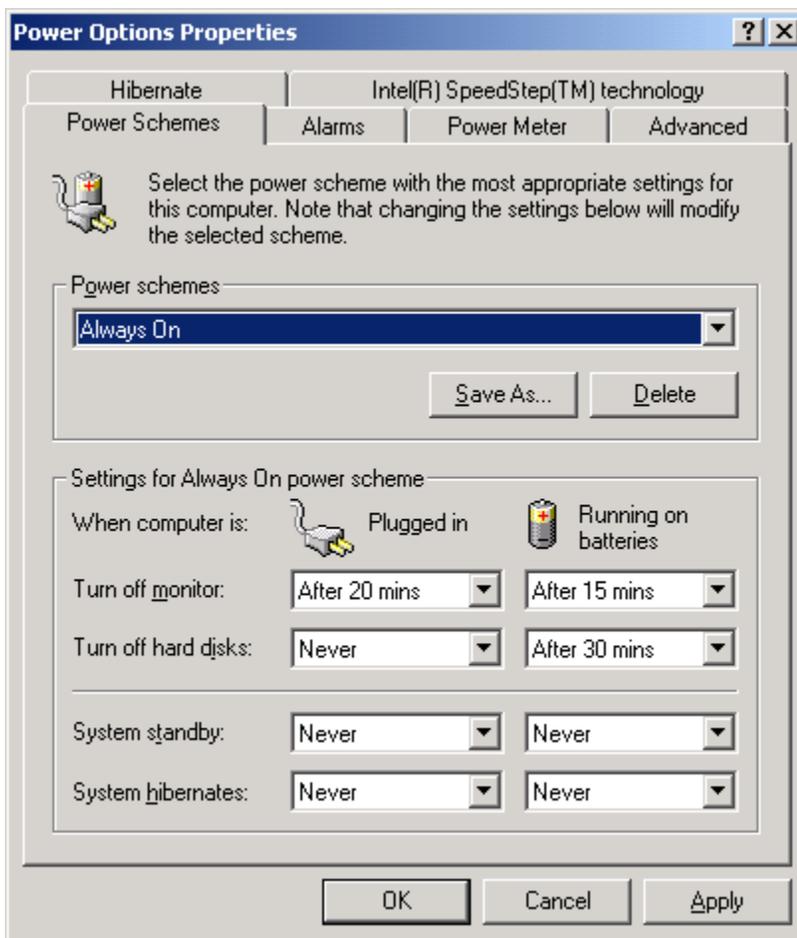
Figure 4–1: Power Options Properties window

3. Choose **Always On f**rom the **Power schemes** drop-down list.

4. Click **OK**.

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Internet Information Server Setup and Configuration

HAFM requires a standard Web server and FTP server to be installed and configured properly on the HP notebook PC. The Web server is used by the client application to access online help files, and the FTP server is used by the client application to move files back and forth between the client and server as necessary.

Windows 2000 includes a Web server and FTP server as part of an optional component called Internet Information Services (IIS). This component is not automatically installed during the system recovery process, and must be installed and configured separately.

To install IIS 5.0 and configure the Web server and FTP server appropriately for HAFM use, complete the steps described in the following section.

Installing IIS 5.0

To install the IIS, complete the following steps:

1. Choose **Start > Settings > Control Panel**. The **Control Panel** window displays.

2. Double-click **Add/Remove Programs**. The **Add/Remove Programs** window displays.

3. Click **Add/Remove Windows Components** on the left. The **Windows Components Wizard** window displays, as shown in Figure 5–1.

Figure 5–1: Windows Components Wizard window

4. Choose the **Internet Information Services (IIS)** check box.

5. Click **Details**. The **Internet Information Services (IIS)** dialog box displays.

6. Because certain extensions are not required for HAFM operation, clear the following check boxes:

    — **FrontPage 2000 Server Extensions**

    — **SMTP Service**

    — **Visual InterDev RAD Remote Deployment Support**

7. Click **OK**, then click **Next**.

8. When prompted with `Please insert the Compact Disc labeled 'Service Pack Files' into your CD-ROM drive`, click **OK**.

9. When prompted with `Insert Service Pack Files into the drive selected below`, type `c:\i386` and click **OK**.

Web Server Configuration

The Web server is used to download and install the HAFM application to remote workstations, and to provide access to online help information from the HAFM application once installed.

Installation of the HAFM software on the server automatically installs the appropriate Web files to the default Web publishing directory (c:\inetpub\wwwroot), and no additional Web server configuration is required specifically for HAFM use.

FTP Server Configuration

The FTP server requires the following configuration settings for HAFM to function properly:

• The FTP server home directory must be located at c:\inetpub\ftproot. This is the default configuration when IIS is first installed.

• The FTP server must accept anonymous connections. This is the default configuration when IIS is first installed.

• The FTP server home directory must have both read and write access permissions. Because the default setting for the home directory is read-only, complete the steps in "Configuring the FTP Server Home Directory for Read/Write Access" on page 5–4 to enable write permissions in the FTP server home directory.

• A virtual directory must be created to provide FTP read-only access to the HAFM program files. Complete the steps in "Configuring the FTP Server Home Directory for Read/Write Access" on page 5–4 to create the virtual directory.

Configuring the FTP Server Home Directory for Read/Write Access

To configure the FTP server home directory for read/write access and to create a new virtual directory for accessing the HAFM program files, complete the following steps.

1. Choose **Start > Settings > Control Panel**. The **Control Panel** window displays.

2. Double-click **Administrative Tools**. The **Administrative Tools** window displays.

3. Double-click **Internet Service Manager**. The **Internet Information Services** window displays.

4. Expand the tree in the **Internet Information Services** window to display the following two items:

   — Default FTP Site

   — Default Web Site

5. Right-click **Default FTP Site** and choose **Properties**. The **Default FTP Site Properties** dialog box displays.

6. Click the **Home Directory** tab in the **Default FTP Site Properties** dialog box.

7. Ensure the **Read** and **Write** check boxes are selected, and then click **OK**.

8. From the **Internet Information Services** window, right-click **Default FTP Site** and choose **New > Virtual Directory**. The **Virtual Directory Creation Wizard** displays.

9. Click **Next** in the **Virtual Directory Creation Wizard**.

10. Enter HAFMan in the **Alias** field, and then click **Next**.

11. Enter c:\Program Files\HAFM in the **Path** field, and then click **Next**.

NOTE: If HAFM has not yet been installed, you must manually create this folder before you will be allowed to create the virtual directory.

12. Ensure the **Read** check box is selected and the **Write** check box is cleared, and then click **Next**.

13. Click **Finish**.

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HAFM Management Applications Installation

This chapter describes the procedures required to install the HAFM software on the HP notebook PC.

Installing the HAFM Software

Install the HAFM software on the HP notebook PC by completing the following steps:

1. Insert the HAFM Applications CD into the CD-ROM drive and run the installation program named *HAFM_ServerInstall.exe*.

2. The installer program will guide you through the installation process.

Iomega QuikSync

Included in the HAFM application installation is the Iomega QuikSync application, which is used to automatically back up all HAFM data to a Zip drive. Because this application is installed and configured automatically, no additional configuration is necessary. When the entire HAFM server configuration procedure is complete, power off the PC. Replace the internal CD-ROM drive with an internal Zip drive and blank disk to allow the QuikSync application to function properly.

7

HAFM Server Configuration

This chapter describes how to connect the HAFM server to the LAN and configure its network information.

Connecting the HAFM Server to a LAN

You can connect the HAFM server to the single customer-supplied private corporate Ethernet LAN with or without an HP-supplied Ethernet hub. Optionally, you can configure a separate dedicated private LAN between the HAFM server and the switch products that it manages. The optional private LAN requires the installation of an additional customer-supplied PCMCIA NIC in the HAFM server. The dedicated private LAN precludes the use of the HP OpenView Storage Area Manager application.

To connect the HAFM server to the LAN, complete the following steps:

1. Connect one end of the Ethernet patch cable (supplied with the HAFM server) to the *rightmost* RJ-45 connector at the rear of the HAFM server (labeled *Public LAN Interface,* as shown in Figure 7–1. *Public* refers to sharing the LAN with devices other than the managed switch products).
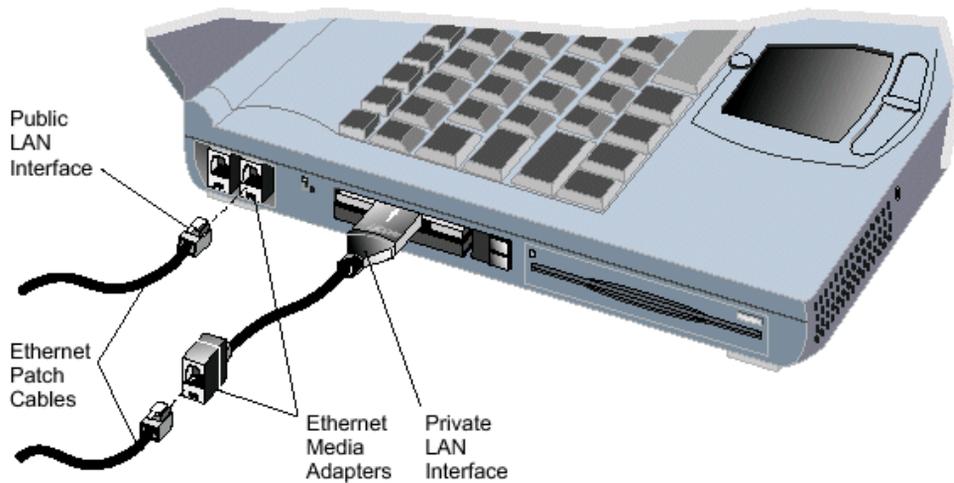
Figure 7–1: HAFM server LAN connections

2. HP recommends connecting the remaining end of the Ethernet cable to the LAN as follows:

   a. If the HAFM server is installed on a customer-supplied private corporate LAN segment, connect the cable to the LAN as directed by the customer's network administrator.

   b. If the HAFM server is installed on the HP-supplied Ethernet hub, connect the cable to any available hub port.

3. *Optionally*, connect the HAFM server and managed switch products to their own dedicated private LAN supplied by the customer, or to another Ethernet hub.

   a. Connect one end of a customer-supplied Ethernet patch cable to the RJ-45 connector of the Ethernet adapter card installed in the PCMCIA slot at the right side of the HAFM server (labeled *Private LAN Interface*, as shown in Figure 7–1).

   b. Connect the remaining end of the Ethernet cable to the dedicated private LAN or hub, as directed by the customer's network administrator.

Configure HAFM Server Network Information

Verify the type of LAN installation with the customer's network administrator. If the HAFM server is installed on a dedicated LAN, the network information does not require change, go to "Set HAFM Server Date and Time" on page 7–12.

If the HAFM server is installed on a public LAN segment, the following TCP/IP network information must be changed to conform to the customer's LAN addressing scheme:

- IP address.

- Subnet mask

- Gateway address—the address of the local router for the corporate intranet

- DNS host name

- DNS domain name

NOTE: At some customer installations, TCP/IP addresses for the HAFM server may be allocated automatically using DHCP.

To configure TCP/IP network information for the HAFM server:

1. Power on the HAFM server. The notebook PC performs a POST and starts the Windows 2000 operating system. After the operating system starts, the **Begin Logon** dialog box displays.

2. Press **Ctrl+Alt+Delete**. The **Logon Information** dialog box displays.

3. Type the default Windows 2000 user name and password and click **OK**.

NOTE: The default user name is *Administrator* and the password is set up during Windows 2000 installation. The user name and password are case-sensitive. Consult with the customer's network administrator to change the user name and password.

The Windows 2000 desktop opens and the **HAFM Login** dialog box displays, as shown in Figure 7–2.

Figure 7–2: HAFM Login dialog box

4. At the Windows 2000 desktop, choose **Start > Settings > Control Panel**. The **Control Panel** window displays.

5. Double-click **System**. The **System Properties** dialog box displays.

6. Click the **Network Identification** tab. The **Network Identification** tab displays, as shown in Figure 7–3.

   The **Full Computer Name** and **Workgroup (Domain)** fields display the names that were set up during Windows 2000 installation. Record this computer name for reference if the HAFM server hard drive fails and must be restored.
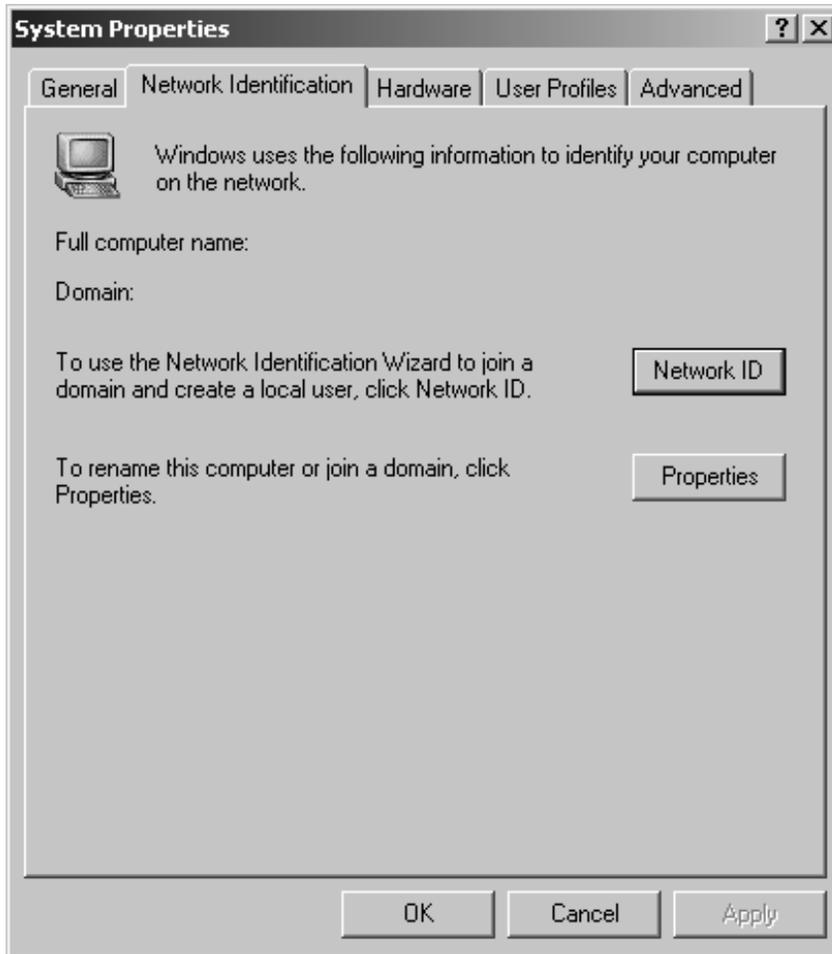
Figure 7–3: System Properties dialog box—Network Identification tab

7. If the HAFM server name does not require change, go to step 9. If the HAFM server is installed on a private corporate LAN and the computer name requires change, click **Properties**. The **Identification Changes** dialog box displays, as shown in Figure 7–4.

Figure 7–4: Identification Changes dialog box

8. Type a new computer name in the **Computer name** field and click **OK** to return to the **System Properties** dialog box. Record the changed computer name for reference if the HAFM server hard drive fails and must be restored.

9. Choose **Start > Settings > Network and Dial-up Connections**. The **Network and Dial-up Connections** window displays.

10. Double-click **Local Area Connection**. The **Local Area Connection Status** dialog box displays, as shown in Figure 7–5.
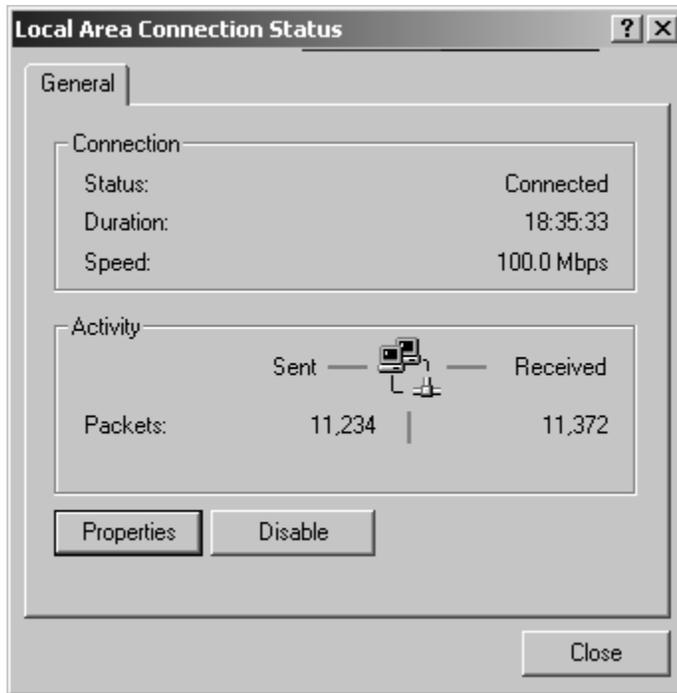
Figure 7–5: Local Area Connection Status dialog box

11. Click **Properties**. The **Local Area Connection Properties** dialog box displays, as shown in Figure 7–6.
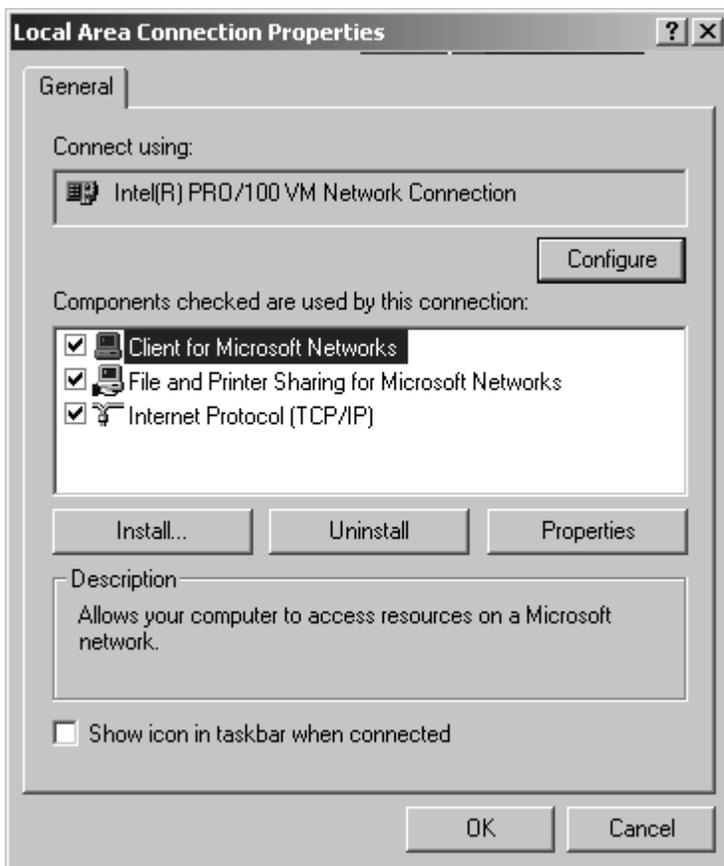
Figure 7–6: Local Area Connection Properties dialog box

NOTE: If there is more than one Ethernet connection available at the laptop (i.e., a PCMCIA NIC has been installed by the customer), choose the Ethernet connection embedded in the laptop in the **Connect using** field.

12. Double-click **Internet Protocol (TCP/IP)**. The **Internet Protocol (TCP/IP) Properties** dialog box displays, as shown in Figure 7–7.
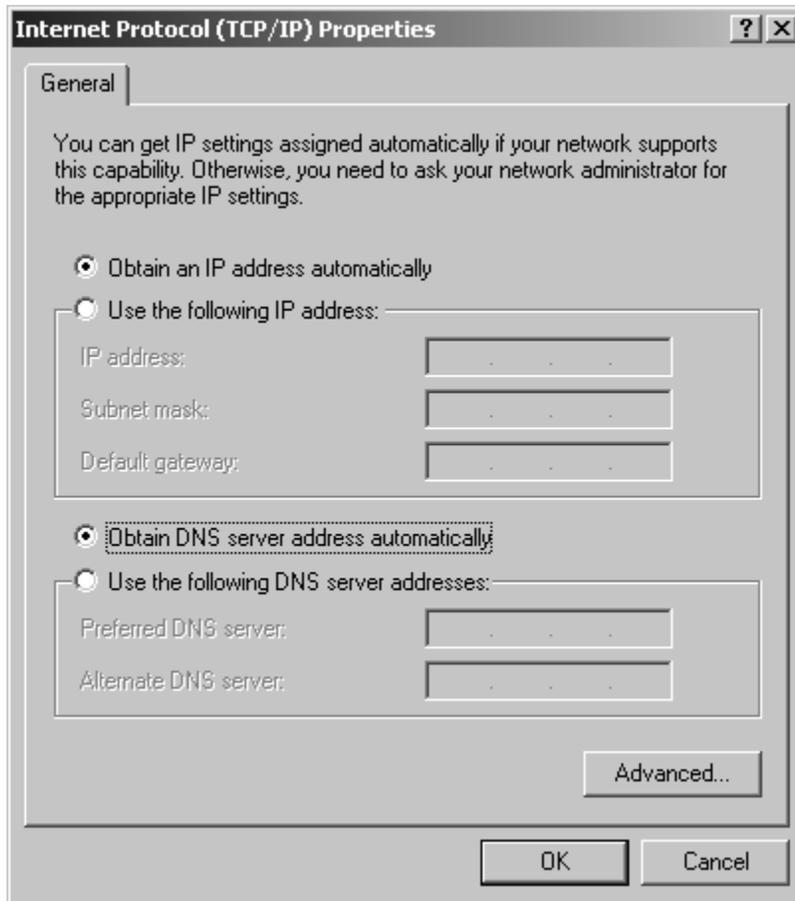
Figure 7–7: Internet Protocol (TCP/IP) Properties dialog box

13. If the IP address is allocated automatically using a DHCP server, click **Obtain an IP address automatically**.
    or
    If the IP address is assigned manually, click **Use the following IP address**. Enter the IP address, subnet mask, and default gateway address obtained from the customer's network administrator.

14. If the DNS address is allocated automatically using a DHCP server, click **Obtain DNS Server address automatically**.
    or
    If the IP address is assigned manually, click **Use the following DNS Server addresses**. Enter the IP address of the preferred and alternate DNS servers obtained from the customer's network administrator.

15. Click **Advanced**. The **Advanced TCP/IP Settings** dialog box displays with the **IP Settings** tab, as shown in Figure 7–8.
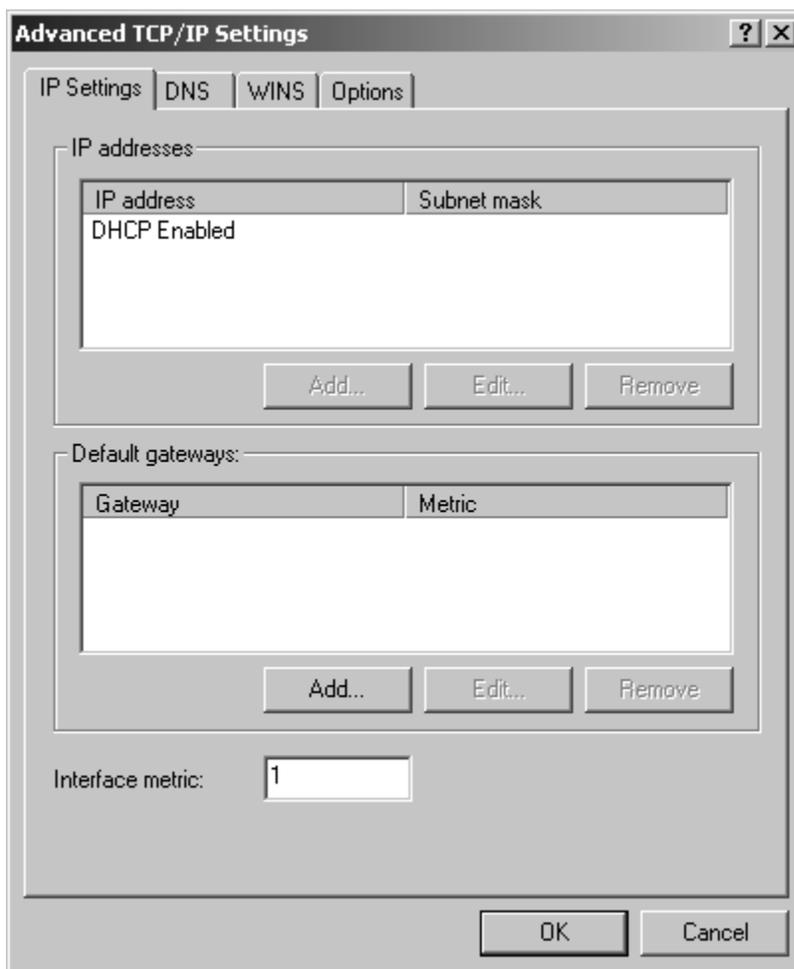
Figure 7–8: Advanced TCP/IP Settings dialog box—IP Settings tab

16. Click the **DNS** tab. The **DNS** tab displays, as shown in Figure 7–9.

Advanced TCP/IP Settings ? ✕

| IP Settings | DNS | WINS | Options |

DNS server addresses, in order of use:

⬆
⬇

Add...   Edit...   Remove

The following three settings are applied to all connections with TCP/IP enabled. For resolution of unqualified names:

◉ Append primary and connection specific DNS suffixes
  ☑ Append parent suffixes of the primary DNS suffix

◯ Append these DNS suffixes (in order):

⬆
⬇

Add...   Edit...   Remove

DNS suffix for this connection:

☑ Register this connection's addresses in DNS
☐ Use this connection's DNS suffix in DNS registration

OK   Cancel

Figure 7–9: Advanced TCP/IP Settings dialog box—DNS tab

17. Ensure the IP address of the DNS servers display as entered in step 14. Additional IP addresses for DNS servers can be added, if needed.

18. If the HAFM server is installed on a dedicated private LAN or hub for the HAFM server and the managed switch products, repeat steps 10-13. Choose the PCMCIA NIC Ethernet connection in step 12.

19. Click **OK** to close the **Advanced TCP/IP Settings** dialog box.

20. Click **OK** to close the **Internet Protocol (TCP/IP) Properties** dialog box.

21. Click **OK** to close the **Local Area Connection Properties** dialog box.

22. Click **Close** to close the **Local Area Connection Status** dialog box.

23. Close the **Network and Dial-up Connections** window and return to the Windows 2000 desktop.

24. Power off the HAFM server:

   a. Choose **Start** > **Shut Down**. The **Shut Down Windows** dialog box displays.

   b. At the **Shut Down Windows** dialog box, choose the **Shut down the Computer** option and click **Yes** to power off the PC.

Set HAFM Server Date and Time

The HAFM's audit and event logs are time-stamped with the date and time from the HAFM server. The switch's system clock is synchronized with date and time of the HAFM server by default. To set the date and time on the HAFM server, complete the following steps:

1. Power on the HAFM server. The notebook PC performs a POST and starts the Windows 2000 operating system. After the operating system starts, the **Begin Logon** dialog box displays.

2. Press **Ctrl+Alt+Delete** keys. The **Logon Information** dialog box displays.

3. Type the Windows 2000 user name and password and click **OK**.

NOTE: The default user name is *Administrator* and the password is set up during Windows 2000 installation. The user name and password are case-sensitive. Consult with the customer's network administrator to change the user name and password.

The Windows 2000 desktop opens and the **HAFM Login** dialog box displays, as shown in Figure 7–10.

Figure 7–10: HAFM Login dialog box

4. At the Windows 2000 desktop, choose **Start > Settings > Control Panel**. The **Control Panel** window displays.

5. Double-click **Date/Time**. The **Date/Time Properties** dialog box displays with the **Date & Time** page open, as shown in Figure 7–11.
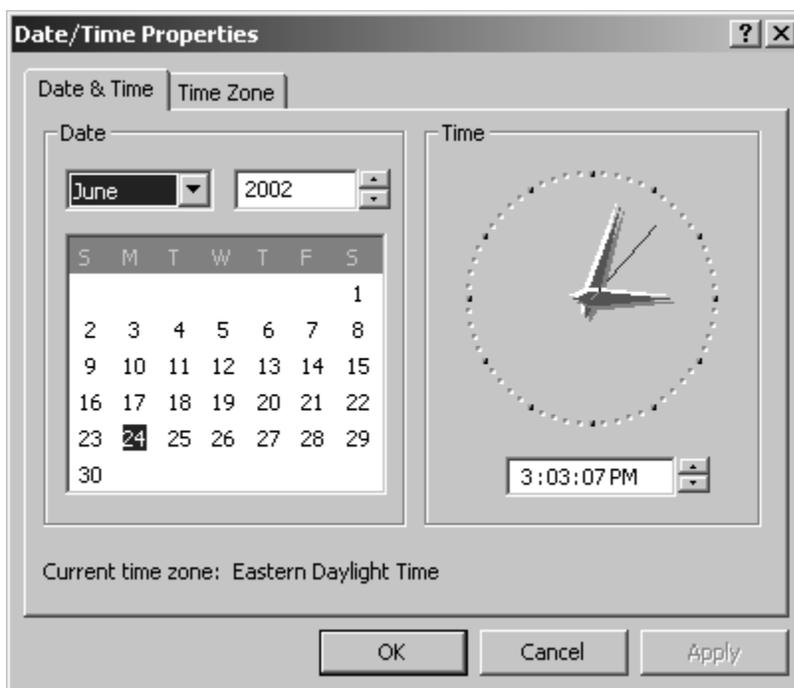
Figure 7–11: Date/Time Properties dialog box

NOTE: The **Time Zone** field must be set before the **Date & Time** field.

6. At the **Date/Time Properties** dialog box, click the **Time Zone** tab. The **Time Zone** tab displays, as shown in Figure 7–12.

Figure 7–12: Date/Time Properties dialog box—Time Zone tab

7. To change the time zone:

   a. Choose the appropriate time zone from the drop-down list at the top of the dialog box.

   b. If instructed by the customer's system administrator, select **Automatically adjust clock for daylight saving changes**.

   c. Click **Apply**. Record time zone and daylight savings information for reference if the HAFM server hard drive fails and must be restored.

8. Click the **Date & Time** tab. The **Date & Time** tab displays, as shown in Figure 7–11.

9. To change the date and time:

   a. Choose the month from the **Date** drop-down list box.

   b. Click the up or down arrow adjacent to the year field and select the year.

   c. Click the day on the calendar to select the date.

   d. Click in the time field and enter the desired time.

   e. Click the up or down arrow adjacent to the time field and select **AM** or **PM**.

   f. Click **Apply**.

10. Click **OK** to close the **Date/Time Properties** dialog box.

11. Close the **Control Panel** window.

Configure and Enable Call-Home Features

There are two call-home features provided. The HAFM server has a call-home feature that provides automatic dial-out through the modem to a service support facility to report Director problems. This is provided in the shipped software.

Alternatively, the Proactive Services Call-Home feature reports events via the LAN to a SANworks Management Appliance or other server running the HP Proactive Services software. HP Proactive Services software is offered at no additional charge for subsystems covered under an on-site warranty or on-site storage hardware support contract. To order Proactive Services software, contact your Hewlett-Packard customer service representative.

A choice of only one Call-Home feature must be selected when HAFM is installed. The following sections describe configuring both call-home features.

IMPORTANT: As shipped, the software includes the call-home via dial-out feature. In order to use the Proactive Services call-home, you must also order the Proactive Services software. You can use either feature, but not both.

Configure the Call-Home via Dial-out Feature

The HAFM server has a call-home feature that provides automatic dial-out through the modem to a service support facility to report Director, Edge Switch, or HAFM server problems. The problem is logged into the support facility's tracking system for resolution.

NOTE: These procedural steps are valid only for an initial installation. Several dialog boxes appearing in this procedure are configured only once per installation.

To configure the call-home feature, complete the following instructions for Windows 2000:

1. Ensure an analog telephone cable is routed and connected to the modem.

2. Log on to Windows 2000 as Administrator, and then double-click **Call-Home Setup** that displays on the Windows desktop to begin the configuration. If this is the first time call-home setup is attempted, the **Network Connection Wizard** dialog box displays, as shown in Figure 7–13.
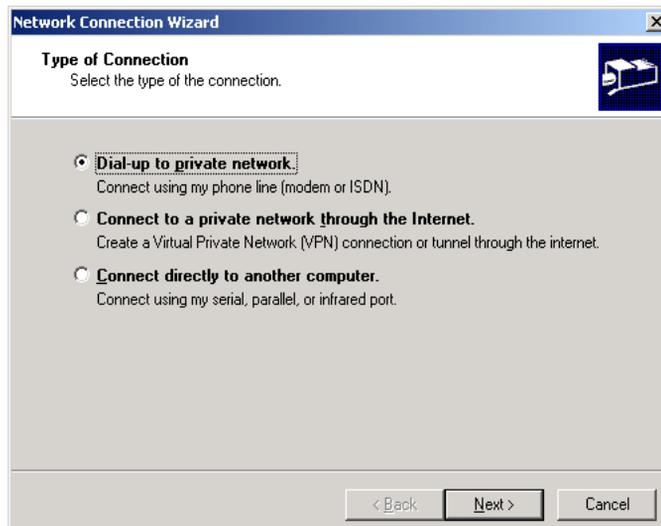
Figure 7–13: Type of Connection window

3. Select the **Dial-up to private network** option, and then click **Next**. The **Phone Number to Dial** window displays, as shown in Figure 7–14.
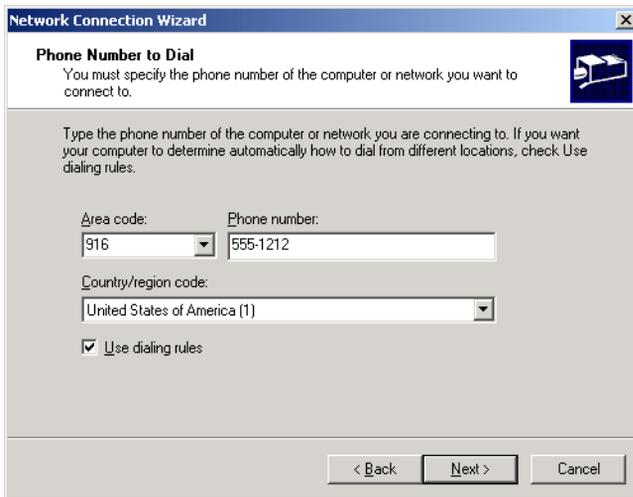
Figure 7–14: Phone Number to Dial window

4. Select the **Use dialing rules** check box.

5. Enter information in the **Area code**, **Phone number**, and **Country/region code** fields, and then click **Next**.

Figure 7–15: Connection Availability window

6. Select the **For all users** option, and then click **Next**.

Figure 7–16: Ready to create your connection window

7. Enter the name of the connection, and then click **Finish**. The **Connect** dialog box displays.

8. Click **Dialing Rules**. The **Phone and Modem Options** dialog box displays.

9. Select a location and click **Edit**. The **Edit Location** dialog box displays.

10. Click the **Calling Card** tab, choose **None**, and then click **OK** twice to return to the **Connect** dialog box.

11. Unless instructed otherwise, leave the default phone number configured, click **Cancel**, and go to step 15.

NOTE: Do not change any configuration defaults for the Phone book entry.

12. If instructed by the customer to use a different phone number, click **Properties**.

13. Change only the **Area code** and **Phone number** as instructed.

14. Click **OK** to close the dialog box, and then click **Cancel** to close the **Connect** dialog box.

15. If remote dial-in support is not to be permitted for the installation, go to "Test Remote Notification" on page 7–22 for instructions on testing the LAN-based call-home feature, if installed.

16. If remote dial-in support is to be provided, and if the phone line connected to the HAFM server is an outside line, configure the phone number used for dial-in. Perform the following to configure the phone number:

   a. Choose **Start** > **Programs > Accessories > Command Prompt**. The **Command Prompt** window displays.

   b. In the **Command Prompt** window, type the following command to configure the local phone number:

      c:\program files\HAFM\rns -p *##########*

      where *##########* is the phone number of the line connected to the HAFM server.

      The phone number string must include the area code (or country code if applicable) and must not contain any spaces (dashes and parenthesis are acceptable). If the phone number for the line connected to the HAFM server changes, repeat this command with the new phone number.

   c. Type exit to close the **Command Prompt** window.

Configuring Windows 2000 to Enable a Dial-up Connection

Configure Windows 2000 to enable a dial-up connection for the built-in service user account. The default configuration does not allow any remote dial-in to the HAFM server. Perform the following to enable a dial-up connection to the HAFM server:

1. Choose **Start** > **Settings** > **Control Panel**. The **Control Panel** window displays.

2. Double-click **Administrative Tools**. The **Administrative Tools** window displays.

3. Double-click **Computer Management**. The **Computer Management** window displays.

4. Click A**ctive Directory Users and Computers** to display a list of users.

5. Right-click the **Service** user name in the list of users and then click **Properties > Dial-in**.

6. Click **Allow access** to grant the user permission to dial in, and then click **OK**.

7. Click the close (**X**) button at the upper right corner of the window to close the window and return to the Windows desktop. See "Test Remote Notification" on page 7–22 for instructions on testing the call-home feature.

Configure and Enable the Proactive Services Call-Home via LAN Feature

The HAFM server call-home feature provides automatic event notification to a support center for reporting Director problems. In order to report events, this feature requires the HAFM server to have a valid LAN connection to a SANworks Management Appliance or other server running the HP Proactive Services software.

IMPORTANT: To order Proactive Services software, contact your HP customer service representative.

Use these steps to configure call-home on the HAFM server.

NOTE: These steps are valid *only* for an initial installation.

1. Verify that the server is connected to a LAN with access to the server running the HP Proactive Services software.

2. Locate the *rns.properties* file in the following location:

   ```
   c:\Program Files\HAFM
   ```

   Following is an example of file contents:

   ```
   RnsDataDir=c:\HAFMData\RnsData
   RnsEventDir=c:\HAFMData\RnsData
   RnsLogDir=c:\HAFMData\Rnsdata

   CSGIpAddress=
   CSGPort=2069
   CSGExePath=/ms/eventAsync
   ```

3. Using any ASCII text editor, make the following changes to the *rns.properties* file:

   a. **CSGIpAddress**—Enter an IP address of the HP Services Gateway in appropriate format (xxx.xxx.xxx.xxx).

      You should only need to enter an IP address for CSGIpAddress, unless default values were changed on the HP Services Gateway.

   b. **CSGPort**—The port that data is sent to on the HP Services Gateway. By default, the value is set at 2069.

   c. **CSGExePath**—The executable path that is configured in conjunction with CSGIpAddress and CSGPort. By default, the path is set to /ms/eventAsync.

4. Reboot the HAFM server. Reboot is only necessary when the contents of the file *rns.properties* has been changed.

NOTE: Rebooting the HAFM server does not adversely effect the operation of the Director or fabric.

5. See "Test Remote Notification" on page 7–22 for instructions on testing the call-home feature.

Test Remote Notification

If the e-mail or one of the call-home notification features are enabled, set up the HAFM application to test these remote notification features. Because the features are configured at the HAFM application, call-home and e-mail notification are enabled for multiple Directors.

NOTE: Prior to using test remote notification, complete the steps in the previous sections, "Configure and Enable Call-Home Features" and either:
- Configure the Call-Home via Dial-out Feature, or
- Configure and Enable the Proactive Services Call-Home via LAN Feature.

Perform the following to test remote notification:

1. Enable call-home event notification through the HAFM server.

   a. In the **Products** or **Fabrics View** page, choose **Maintenance > Configure Call Home Event Notification**.

   b. The **HAFM Configure Call Home Event Notification** dialog box displays. If a check mark displays in the check box, call home is enabled. If a check mark does not display in the check box, click the box to add a check mark.

2. Open **Products View** page. Choose **Maintenance > Test Remote Notification**. The **Test Remote Notification** dialog box displays, as shown in Figure 7–17.
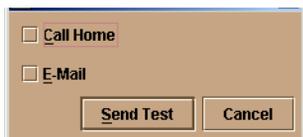
Figure 7–17: Test Remote Notification dialog box

3. Check the **Call-Home** and **E-Mail** check boxes.

4. Click **Send Test**. Call-home and e-mail test messages are transmitted and an **Information** dialog box displays.

5. Click **OK**.

6. Verify that the intended users received the Call-Home and e-mail notifications.

8

HAFM Operation

After installing and properly configuring Windows 2000, HAFM, and the Web and FTP servers, you must remove the internal CD-ROM drive from the HP notebook PC and replace it with the internal Zip drive and blank disk. Do this while the PC is powered off.

Because the HAFM server application is installed as a Windows 2000 service, operation automatically begins after a power-on or restart of the HP notebook PC. This is an important aspect of the HAFM server application because the application continuously monitors the status of the Fibre Channel Edge Switches, Directors, and fabrics, and alerts users through SNMP or e-mail if important system events occur, regardless of whether or not a user is logged on to Windows 2000. Additionally, the HAFM server can automatically phone home and notify HP Services when a switch requires service or a significant event occurs.

Once you have installed and configured the HAFM software, and you have rebooted the PC, the HAFM Services application automatically starts. When you log on to Windows 2000, two windows appear, the HAFM Services window and the HAFM Login window. These windows are described in "HAFM Services Window" on page 8–2 and "HAFM Login Window" on page 8–3, respectively.

To control the HAFM server, use the Windows Service Control Manager in the Administrative Tools folder under Control Panel. Because the application is installed as a Windows 2000 service, it automatically starts whenever the server PC is booted. Ordinarily, you should not need to stop the service or change its startup parameters, but if you do, it should be done as described in "Service Control Manager" on page 8–4.

HAFM Services Window

An example of the **HAFM Services** window is displayed in Figure 8–1. Its purpose is to display the operational status of the HAFM server. There are three potential states, which are represented by a graphical icon both in the window title bar and on the bottom status line of the window.

• Green Circle – Fully operational.

• Yellow Triangle – An internal problem has been detected, but operations continue.

• Red Diamond – A fatal problem has been detected and operations have ceased.
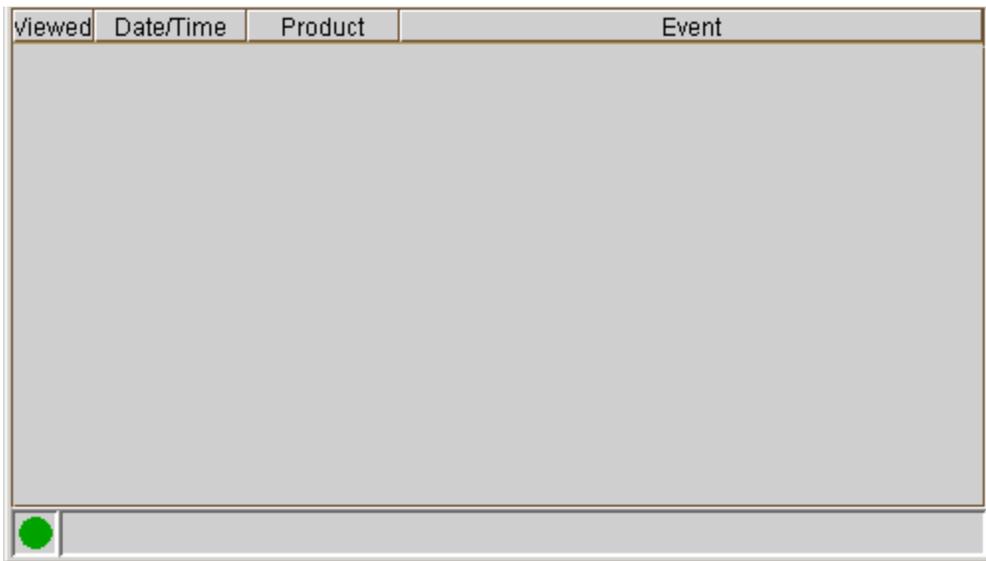
Figure 8–1: HAFM Services window

The **HAFM Services** window cannot be closed by clicking the **X** button in the upper-right corner of the window. The only way to close the window is to stop the HAFM Services as described in "Service Control Manager" on page 8–4.

HAFM Login Window

When HAFM Services starts, it automatically starts the HAFM user interface and displays the **HAFM Login** window. This window can be closed by clicking the **X** button in the upper-right corner of the window or by clicking **Exit**.
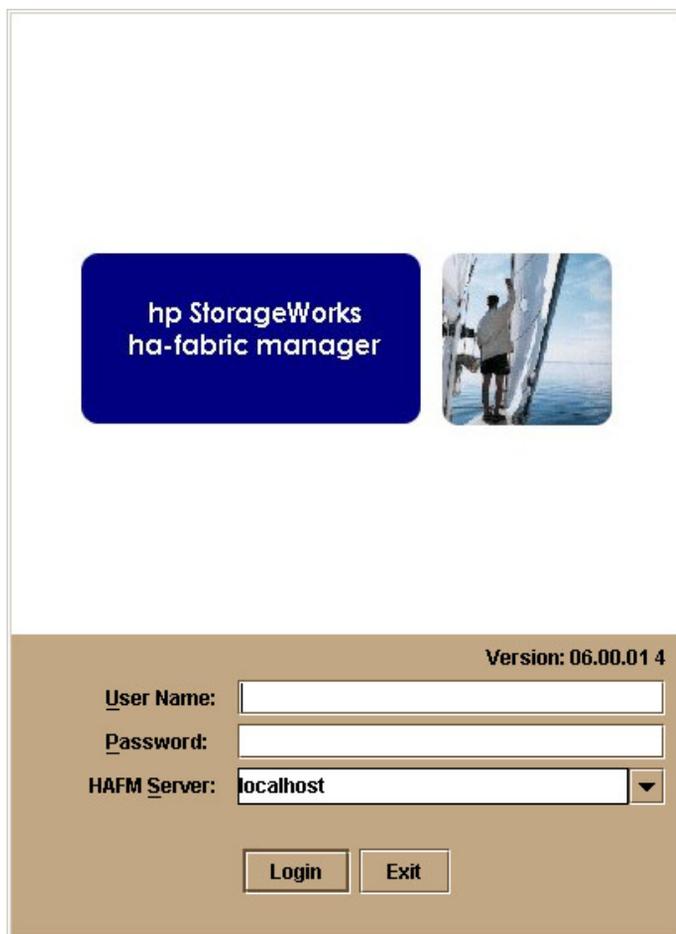
Figure 8–2: HAFM Login dialog box

For more information about the HAFM Login and operation of the HAFM user interface, please refer to the *hp StorageWorks ha-fabric manager user guide*.

Service Control Manager

To stop and start the HAFM Services application, use the **Start** menu of the HAFM server. Alternately, you can use the Windows Service Control Manager. Do not stop the application through the Windows Task Manager by ending the task.

Stopping and Starting the HAFM Server from a Local Client

To stop and start the HAFM Services application, complete the following steps:

1. Choose **Start > Programs > HAFM application**.

2. Click **Stop Services**.

3. To resume services, return to the **Start** menu, locate the HAFM application, and click **Start Services**.

Accessing the Service Control Manager

Alternatively, to access the Service Control Manager, complete the following steps:

1. Choose **Start > Settings > Control Panel**. The **Control Panel** window displays.

2. Double-click **Administrative Tools**. The **Administrative** window displays.

3. Double-click **Services**. The **Services** window displays, as shown in Figure 8–3.

From here, you can stop and start the service or change its startup parameters.
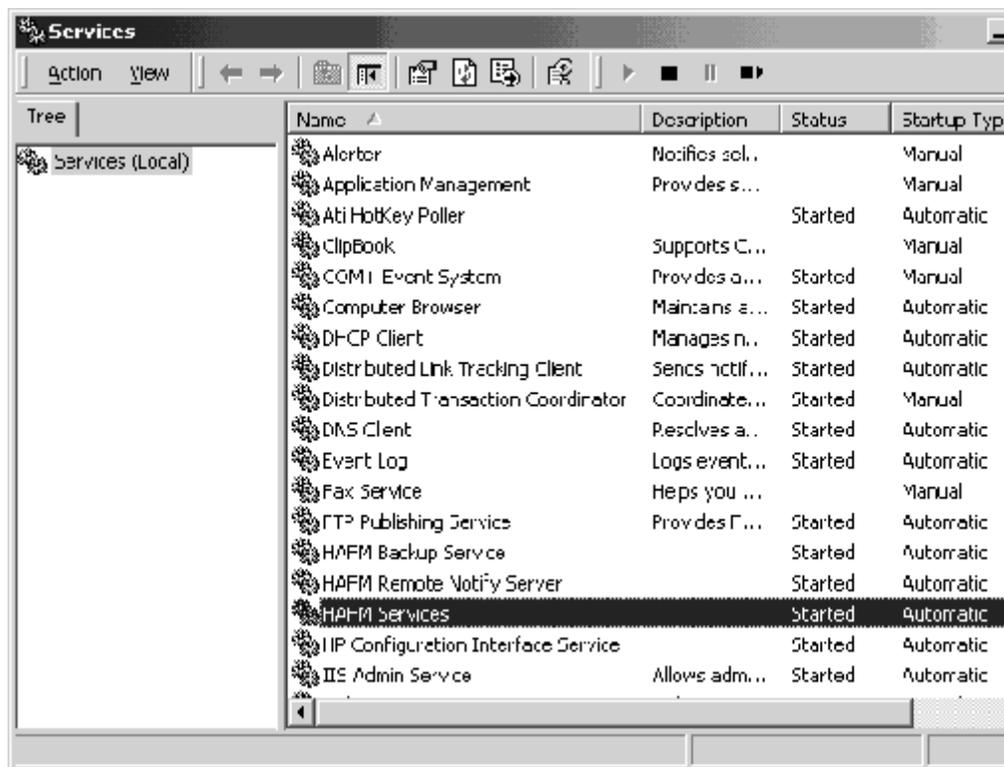
Figure 8–3: Services window

The HAFM service is called HAFM Services, as shown in .

Using HAFM Server to Manage the SAN

The HAFM server can be used to manage your SAN. For more information, see *hp StorageWorks ha-fabric manager user guide*.

9

Backing Up and Restoring the HAFM Server

This chapter contains information on how to back up the Director and Edge Switch product configuration data and how to restore the HAFM server.

Backing Up Configuration Data

Back up of critical HAFM configuration data is provided by a third-party application installed on the HAFM server, called Iomega QuikSync. QuikSync automatically mirrors the contents of the HAFMData directory on the HAFM server hard drive. If HAFMData directory contents change, or the HAFM server is rebooted, content on the external Zip drive is updated as well. The directory contains all HAFM configuration data and is used to restore the HAFM server operating environment in case of hard drive failure.

The HAFMData directory contains:

- HAFM configuration data (Director and Edge Switch definitions, user names and passwords, Director and Edge Switch date and time, operating mode, port configurations, operating parameters, SNMP recipients, and e-mail recipients).

- Log files (HAFM application, Director, and Edge Switch logs).

- Director and Edge Switch firmware versions stored in the firmware library.

- Configuration data for the Director and Edge Switch products are stored in nonvolatile RAM in these products and is backed up through HAFM. The data is recorded in the HAFMData directory each time a backup occurs.

The QuikSync application does not back up Windows 2000 operating system data, such as user names, passwords, PC date and time, and TCP/IP network information. This information was recorded while performing several installation tasks. See "Record or Verify HAFM Server Restore Information" on page 9–2.

Use the following procedure to back up critical HAFM configuration data:

1. Insert a blank Zip disk into the HAFM server's Zip drive.

2. Back up the Director and Edge Switch configuration file to the HAFM server. For instructions, see the appropriate Edge Switch or Director Service Manual or Product Manager User Guide.

3. If the **Hardware View** page for any Director or Edge Switch is open, click **Close** and return to the **Products View** page.

4. Close HAFM. Click **Product** on menu bar and choose **Exit** from the menu.

5. Use these steps to reboot the HAFM server:

   a. At the Windows 2000 desktop, choose **Start > Shut Down**. The **Shut Down Windows** dialog box displays.

   b. Choose **Restart** and click **OK**. The computer powers down and restarts. After the operating system starts, the **Begin Logon** dialog box displays.

   c. Press **Ctrl+Alt+Del**. The **Logon Information** dialog box displays.

   d. Type a Windows 2000 user name and password and click **OK**. The Windows 2000 desktop opens and the **HAFM Login** dialog box displays.

   e. Type the user name and password and select a local host from the **HAFM Server** drop-down list.

   f. Click **Login**. The **Products View** page displays.

Record or Verify HAFM Server Restore Information

Configuration information must be recorded to restore the HAFM server in case of hard drive failure. The Windows 2000 operating system and the HAFM applications must also be restored. Use these steps to record or verify HAFM server configuration information:

1. Verify that the following network configuration information is recorded:

   a. Computer name is recorded.

   b. Network addresses are recorded for the NIC installed in the server:

      IP address
      Subnet mask
      Gateway address

  c. DNS Server IP address is recorded.

2. Verify that the following date and time information is recorded:

  — Time zone

  — Daylight savings time setting, if appropriate

3. Verify that user information is recorded:

  — Record all new user information (name, description, checkbox selections) from the **New User** dialog box.

  — Record all changed user information (name, description, checkbox selections) from the **User Properties** dialog box.

4. Record the Product ID number as follows:

  a. Minimize the **Products View** page to view the Windows 2000 desktop.

  b. At the Windows 2000 desktop, choose **Start > Settings > Control Panel**. The **Control Panel** window displays.

  c. At the **Control Panel** window, double-click **System**. The **System Properties** window displays with the **General** page open. Record the Product ID number listed under the **Registered to:** heading.

  d. Click **Cancel** to close the **System Properties** window.

  e. Close the **Control Panel** window and return to the Windows 2000 desktop.

Restore the HAFM Server

Use these steps to restore the HAFM server:

1. Perform the Windows 2000 setup and configuration procedures described in Chapter 4.

2. Perform the Internet Information Server setup and configuration procedures described in Chapter 5.

3. Perform the HAFM Management application installation procedures described in Chapter 6.

4. Perform the HAFM server configuration procedures described in Chapter 7.

Install or Upgrade Software

This section describes the procedure to install or upgrade the HAFM application to the HAFM server.

The HAFM application is provided on the *hp StorageWorks ha-fabric manager applications* CD-ROM. Subsequent software versions for upgrading the Director are provided to customers through the *hp StorageWorks ha-fabric manager applications* CD-ROM.

NOTE: When installing or upgrading a software version, follow all procedural information in the Release Notes that accompany the software version. This information supplements information provided in this general procedure.

Use these steps to install or upgrade the HAFM application and associated applications to the HAFM server:

1. Log out of all HAFM sessions (local and remote).

2. Perform the following steps to obtain the new software version from the HP website. If you have a CD-ROM, go to step 3.

NOTE: The following path is subject to change.

   a. At the HAFM server or other PC with Internet access, open the HP website at: http://thenew.hp.com/country/us/eng/support.html.

   b. Click the **HAFM Downloads** folder in the left panel.

   c. Choose the **Director HAFM Version XX.YY.ZZ** entry, where *XX.YY.ZZ* is the desired version. The **File Download** dialog box displays.

   d. Click **Save**.

   e. Verify that the correct directory path is specified at the **Save in** field and the correct file is specified in the **File name** field. Click **Save**. The new HAFM version is downloaded and saved to the HAFM server or PC hard drive.

      If the new HAFM version was downloaded to a PC (not the HAFM server), transfer the HAFM version file to the HAFM server by CD ROM or other electronic means.

3. Insert the HAFM applications CD into the HAFM server's CD-ROM drive.

4. Click **Start > Run**. The **Run** dialog box displays.

5. At the **Run** dialog box, select the directory path (hard drive or CD-ROM drive) and filename of the executable file (*HAFM_ServerInstall.exe*) using **Browse.** The directory path and filename display in the **Open** field.

6. Click **OK**. A series of message boxes display as the InstallAnywhere third-party application prepares to install the HAFM software.

7. Follow the online instructions for the InstallAnywhere program. Click **Next**, **Install**, or **Done** as appropriate.

8. Reboot the HAFM server PC.

   a. Press **Ctrl+Alt+Del** to display the **Windows 2000 Logon Information** dialog box.

   b. Type the user name and password and click **OK**. The Windows 2000 desktop displays.

      NOTE: If required, obtain the user name and password from the customer or next level of support.

   The HAFM application automatically opens.

9. At the **HAFM application Login** screen, enter a user name, password, and HAFM server name (all are case sensitive), and click **Login**. The HAFM application opens and the **Products View** page displays.

   NOTE: The default user name is *Administrator* and the password is set up during Windows 2000 installation. The user name and password are case-sensitive. If required, obtain the user name, password, and HAFM server name from the customer or next level of support.

10

Sliding Shelf Installation for HAFM Server

This chapter contains information on how to install the optional sliding shelf for the HAFM server in an appropriate HP, or comparable, 19-inch Electronic Industries Association (EIA) rack, as follows:

- HP 9000, 10000 and 11000 series rack

- HP rack system/e or 19-inch EIA rack

NOTE: The installation of the HAFM server sliding shelf is not supported in the m-series cabinet.

Installing the Rear Mounting Brackets

Use the following procedure to install the rear mounting brackets for the HAFM server shelf:

1. Select a U slot above the switch.

NOTE: HP recommends that you select the U slot immediately above the switch. However, other U slots above the switch may also be used.

2. On each rack rear column, locate the hole that is 2 holes up from the EIA number of the selected U slot.

3. Line up this hole with the threaded hole on the rear mounting bracket's side.

4. Using a screw attach the bracket to the rack as shown in Figure 10–1.

NOTE: Figure 10–1 depicts the rear mounting bracket installation in an HP 9000, 10000 or 11000 series rack (square holes). If installing the bracket in a system/e rack (round holes), the square alignment washer is not required.

5. Attach another screw loosely in the hole on the inside face of the rear mounting bracket.
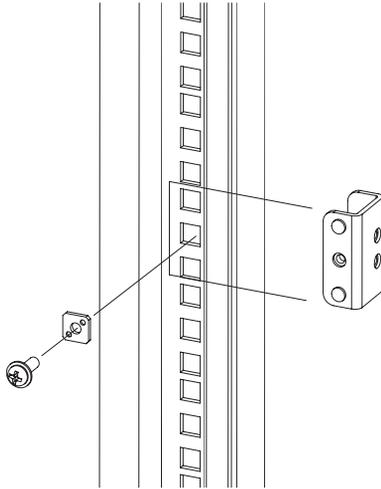
Figure 10–1: Installing the rear mounting brackets

6. If you are installing the sliding shelf into an:

    — HP 9000, 10000 or 11000 series cabinet, proceed to "Replacing Front Brackets (HP 9000, 10000 and 110000 Series Cabinets Only)" on page 10–2.

    — HP rack system/e or 19-inch EAI cabinet, proceed to "Installing and Securing the Shelf" on page 10–4.

Replacing Front Brackets (HP 9000, 10000 and 110000 Series Cabinets Only)

For the HP 9000, 10000 and 11000 series cabinets, you must remove the existing front bracket and install a longer front bracket for the sliding tray to function properly. Perform the following steps:

1. Remove the existing front brackets from the tray assembly:

    a. Unscrew the captive fastener (❶) from the front bracket (❷) as shown in Figure 10–2.

    b. Remove the front bracket from the tray assembly by removing three flat-head screws as shown in Figure 10–2.

c. Repeat step step a and step b to remove the bracket on the opposite side of the tray assembly.
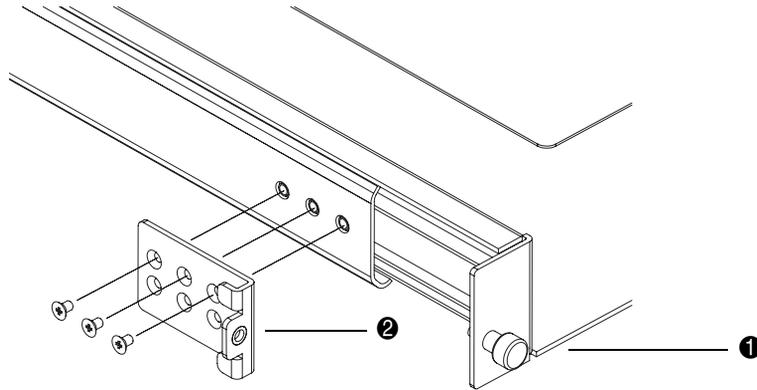
Figure 10–2: Removing the front bracket

2. Attach long front brackets to the tray assembly:

a. Attach a long front bracket (❶) to the tray assembly using the three flat-head screws, as shown in Figure 10–3.

b. Attach the captive fastener to the long front bracket (❷).
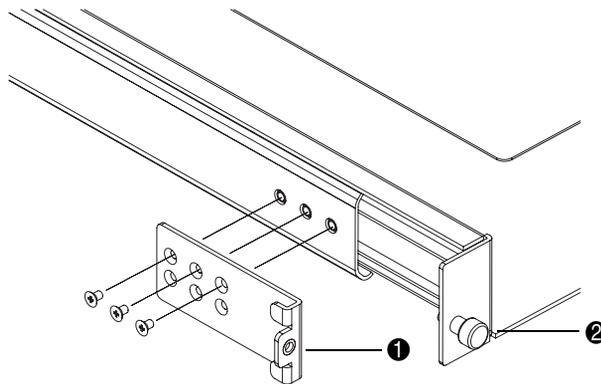
Figure 10–3: Attaching a long front bracket

Installing and Securing the Shelf

Use the following procedure to complete the shelf installation:

1. Insert the shelf into the rack so that both rail rear slots slide over the loose screws on inside face of each rear mounting bracket as shown in Figure 10–4.

2. Make sure that the sliding shelf and rails are horizontal at the rack front.

3. Push each of the rail front tabs into the corresponding holes on the rack columns.

4. At the back of the rack, tighten the screws that attach the sliding shelf rails to the rear mounting brackets.
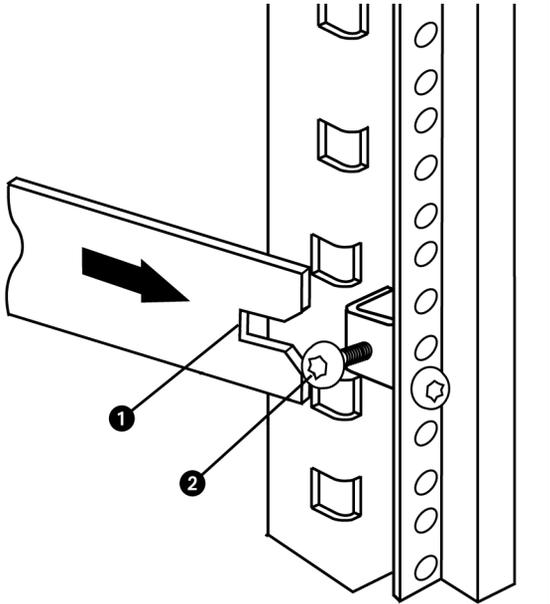
Figure 10–4: Attaching sliding shelf to rear mounting bracket

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