hp StorageWorks NAS 1500s

This installation guide provides information about deploying the HP StorageWorks NAS 1500s.

NAS 1500s Installation Guide
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About This Guide

This installation guide provides information to help you deploy the HP StorageWorks NAS 1500s.

"About This Guide" topics include:

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■ Rack stability, page 11

■ Getting help, page 11

Overview

This section covers the following topics:

■ Intended audience

■ Prerequisites

■ Related documentation

Intended audience

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

■ Microsoft® administrative procedures

■ File-sharing protocols

Prerequisites

Before you set up the NAS server, HP recommends that you obtain supplemental documentation relative to the items listed above in the section titled "Intended Audience."

Related documentation

In addition to this guide, HP provides corresponding information:

■ *HP StorageWorks NAS 1500s Administration Guide*

■ *HP StorageWorks NAS 1500s Rack Installation Instructions*

■ *HP StorageWorks NAS 1500s Release Notes*

Conventions

Conventions consist of the following:

■ Document conventions

■ Text symbols

■ Equipment symbols

Document conventions

The document conventions included in Table 1 apply in most cases.

Table 1: Document Conventions

Element	Convention
Cross-reference links	Figure 1
Key and field names, menu items, buttons, and dialog box titles	**Bold**
File names, application names, and text emphasis	*Italics*
User input, command and directory names, and system responses (output and messages)	`Monospace font` `COMMAND NAMES` are uppercase monospace font unless they are case sensitive
Variables	`<monospace, italic font>`
Web site addresses	Underlined sans serif font text: http://www.hp.com

Text symbols

The following 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 death.

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

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

Equipment symbols

The following equipment symbols may be found on hardware for which this guide pertains. They have the following meanings:

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 personal 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 personal 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 personal 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

Rack stability protects personnel and equipment.

⚠️ **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 web site: http://www.hp.com.

HP technical support

Telephone numbers for worldwide technical support are listed on the following HP web site: http://www.hp.com/support/. From this web site, select the country of origin.

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

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 storage web site

The HP web site has the latest information on this product, as well as the latest drivers. Access storage at: http://www.hp.com/country/us/eng/prodserv/storage.html. From this web site, 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 web site for locations and telephone numbers: http://www.hp.com.

Product Overview

1

This chapter describes the configuration options and setup and configuration dependencies and requirements for the HP StorageWorks NAS 1500s.

Configuration options

The NAS 1500s is specifically designed for file serving; it offers optimized performance for a growing environment.

The NAS 1500s is available in three models:

- 320 GB
- 640 GB
- 1TB

Product definition and information

The NAS 1500s is a remote office or small to medium business class NAS solution that provides reliable performance, manageability, and fault tolerance.

Server hardware features

The following features are included in the NAS 1500s 320 GB server:

■ Intel® Celeron ® 2.8 GHz, 533 MHz FSB processor

■ 512-MB 200 MHz PC2100 DDR SDRAM memory

■ 66/64-bit PCI-X slot

■ 33/32-bit PCI slot

■ Four 80 GB 7200 rpm SATA hot-pluggable hard drives

■ Two embedded 10/100/1000 WOL (Wake on LAN) network interface controllers (NICs)

■ Dual SCSI port controller for tape backup

■ Adaptec 2410SA SATA RAID controller (in 66/64-bit slot only)

■ USB support for DVD drive

The following features are included in the NAS 1500s 640 GB server:

■ Intel Pentium 4 2.8 GHz, 800 MHz FSB processor

■ 1 GB 200 MHz PC2100 DDR SDRAM memory

■ 66/64-bit PCI-X slot

■ 33/32-bit PCI slot

■ Four 160 GB 7200 rpm SATA hot-pluggable hard drives

■ Two embedded 10/100/1000 WOL (Wake on LAN) network interface controllers (NICs)

■ Dual SCSI port controller for tape backup

■ Adaptec 2410SA SATA RAID controller (in 66/64-bit slot only)

■ USB support for DVD drive

The following features are included in the NAS 1500s 1 TB server:

- Intel Pentium 4 3.2 GHz, 800 MHz FSB processor
- 1 GB 200 MHz PC2100 DDR SDRAM memory
- 66/64-bit PCI-X slot
- 33/32-bit PCI slot
- Four 250 GB 7200 rpm SATA hot-pluggable hard drives
- Two embedded 10/100/1000 WOL (Wake on LAN) network interface controllers (NICs)
- Dual SCSI port controller for tape backup
- Adaptec 2410SA SATA RAID controller (in 66/64-bit slot only)
- USB support for DVD drive

Software features

Advanced features included and supported by the NAS 1500s include:

- Windows® Storage Server 2003
- Microsoft Services for Macintosh
- Microsoft Services for NetWare
- Microsoft Services for NFS
- NAS Web Based User Interface (WebUI)
- Shadow Copies for shared folders (VSS)
- Storage Manager 2.0 for Server Appliances
- Optional third party supported software (not included):
    — Backup software
    — Management software
    — Quota management
    — Virus protection

For specific software product recommendations, go to the HP web site:

http://h18000.www1.hp.com/products/storageworks/nas/supportedsoftware.html

Managing the NAS 1500s

The NAS 1500s is configured at the factory with default system settings and with the NAS operating system installed. Refer to the "Storage management overview" section later in this chapter for more information.

The NAS administrator uses Windows Disk Manager (DM) to manage the logical storage.
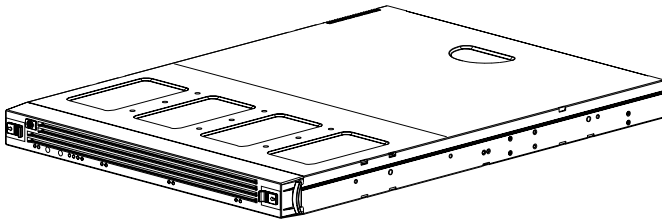
15131

Figure 1: NAS 1500s device

Product redundancy

The NAS 1500s is specifically designed to perform file serving tasks for networks, using industry standard components to ensure reliability.

Other industry standard features, such as redundant array of independent drives (RAID) implemented in the hardware and remote manageability further enhance the overall dependability of the NAS 1500s.

To ensure redundancy and reliability, the hard drives installed in the NAS 1500s are configured so that a single drive failure will not cause data loss or system failure. The NAS 1500s is configured with dual boot capability. When powered on, the NAS 1500s can boot using a primary OS or a secondary recovery OS.

The primary OS logical drive resides on disk 0 and is mirrored on disk 1 while the secondary OS logical drive resides on disk 2 and is mirrored on disk 3. If a single disk failure occurs, the system will still function off the mirrored disk. If the primary OS becomes corrupted and un-bootable, the secondary OS is available for data backup prior to using the Quick Restore DVD to restore the system to the factory default state.

The data volume is configured as a hardware RAID 5 based basic partition across all four drives. This ensures redundancy in the event of a drive failure. The data volume is accessible by both the primary OS and secondary OS.

Refer to the administration guide for additional information.

Dependencies and requirements

Specific conditions must be met in order for the NAS 1500s to operate.

Storage requirements

To protect against data loss from hard drive failure, configure storage with fault tolerance in mind. HP recommends adhering to RAID 5 configurations.

IP networking and setup requirements

The following are IP networking and setup requirements needed for a NAS 1500s device:

■ Windows-based PC running Microsoft Internet Explorer 5.5 (or later) on the same network segment as the NAS 1500s; this will be used to set up and administer the NAS device.

■ Additional Ethernet connection ports to client subnets (depending on network options ordered).

Deploying the NAS 1500s on the network

The default shipping configuration contains two 10/100/1000 integrated network interface controller (NIC) ports for client data access. These data ports also allow access to the WebUI that accompanies the product. Most management and administrative procedures can be accomplished via the WebUI.
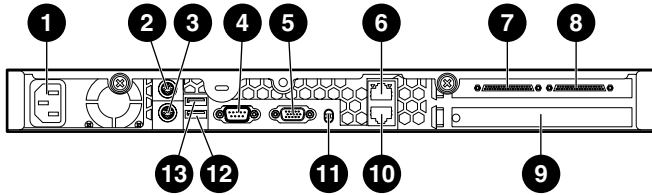
15130

Figure 2: Rear panel connectors

Table 2: Rear Panel Connectors

Item	Description
❶	Power connector
❷	Mouse connector (PS/2) (green)
❸	Keyboard connector (PS/2) (purple)
❹	Serial connector (teal)
❺	Video connector (blue)
❻	RJ-45 connector for NIC 1 (Eth0)
❼	HP SCSI Ultra 160 Dual Port connector
❽	HP SCSI Ultra 160 Dual Port connector
❾	Adaptec 2410SA HW RAID 4 Port SATA controller (internal)
❿	RJ-45 connector for NIC 1 (Eth1)
⓫	UID light and button
⓬	USB Connector
⓭	USB Connector
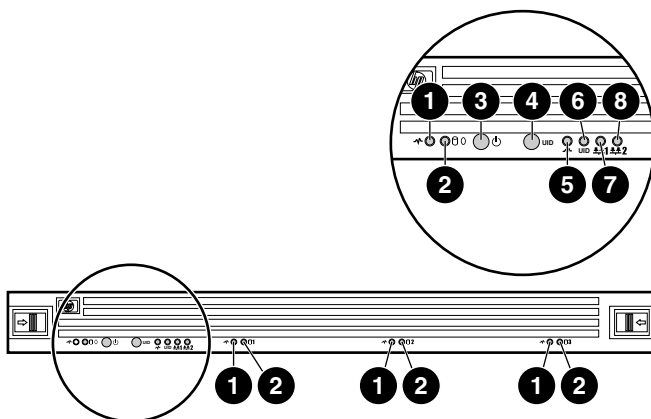
15155

Figure 3: Front panel LEDs and buttons

Table 3: Front Panel LEDs and buttons

Item	Description	Color
❶	Reserved	n/a
❷	Hard drive status/activity	Green
❸	Power button	n/a
❹	UID button	n/a
❺	Power LED	Green
❻	UID LED	Blue
❼	NIC1 activity LED	Green
❽	NIC2 activity LED	Green

Setup and configuration overview

Setting up systems is a well-defined process. This section is intended as an overview of the process, not a detailed list of step-by-step instructions. Step-by-step procedures are documented in the administration guide. Some of the steps are driven by wizards within the WebUI. In either type of setup, it is important to read all of the supplied documentation before starting. Relevant documents include:

■ *HP StorageWorks NAS 1500s Administration Guide*

■ *HP StorageWorks NAS 1500s Rack Installation Instructions*

■ *HP StorageWorks NAS 1500s Release Notes* (if required, this document will be available at <http://www.hp.com/go/nas>)

Configuring the NAS 1500s

The following steps describe how to configure the NAS 1500s.

1. Configure the NAS device using Chapter 2 of this guide.

2. **This is a recommended step**. Place the NAS device into an Active Directory or Windows NT® 4.0 domain for ease of manageability.

3. **This is an optional step**. Enable protocols such as NFS sharing, NCP, and/or AppleTalk. See the administration guide for this procedure in detail.

4. **This is an optional step**. Create shares corresponding to the protocols mentioned in the previous steps. Grant access rights to the shares.

5. Read the remaining sections of the administration guide.

Note: By default the data drive (F:) is configured and ready for use.

Storage management overview

This section provides an overview of the components that make up the NAS storage structure. A complete discussion of the components and their relationships is available in the administration guide.

> ⚠ **Caution:** This section on storage management and Disk Manager is required reading material for the NAS administrator. This section develops the concepts and requirements that serve as the basis for successfully using an HP StorageWorks NAS device. Failure to read this section and the appropriate sections on storage management in the administration guide may lead to data loss or file corruption.

Storage management elements

Storage is divided into three major divisions:

- Physical storage elements
- Logical storage elements
- File system elements
- File sharing elements

Each of these elements is composed of the previous level's elements.

Physical storage elements

The lowest level of storage management on the NAS 1500s occurs at the physical drive level. Each NAS 1500s comes with four SATA hot-pluggable hard drives. The drives are configured by default into three logical disks at the SATA controller level as follows:

Table 4: Hard drive configuration

Logical Disk	RAID	Size/Allocation
1	RAID 1	9 GB across physical drive 0, 1
2	RAID 1	9 GB across physical drive 2, 3
3	RAID 5	Remaining physical disk space across all physical drives
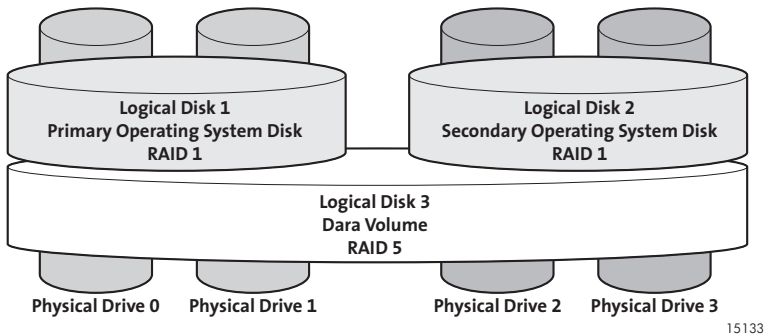
Figure 4: Hardware RAID

Note: In Adaptec Storage Manager, logical disks are labeled 1, 2, and 3. In Disk Manager, logical disks are displayed as 0, 1, and 2.

Logical storage elements

The NAS 1500s uses the Microsoft Disk Manager (DM) for managing the various types of disk presented to the file system. Disk Manager has two types of disk presentations: basic disk and dynamic disk. Each of these types of disk has special features that enable different types of management. The NAS 1500s uses all 3 disks as presented to it from the physical storage layer. The two RAID 1 disks are used for housing the primary and secondary OS basic partitions. The single RAID 5 disk houses the data volume on a basic partition.

File system elements

File system elements are composed of the folders and subfolders that are created under each logical storage element (partitions, logical disks, and volumes). Folders are used to further subdivide the available file system providing another level of granularity for management of the information space. Each of these folders can contain separate permissions and share names that can be used for network access. Folders can be created for individual users, groups, projects, and so on. Refer to the administration guide for more details on file system elements.

File-sharing elements

The NAS 1500s supports several file-sharing protocols, including DFS, NFS, FTP, HTTP, and Microsoft SMB. On each folder or logical storage element, different file-sharing protocols can be enabled using specific network names for access across a network to a variety of clients. Permissions can then be granted to those shares based on users or groups of users in each of the file sharing protocols. Refer to the administration guide for more details on file-sharing elements.

Configuration Setup

2

This chapter provides information about preinitialization, collecting information, and configuring the HP StorageWorks NAS 1500s using the online method. Details include three methods of system configuration and an overview of storage configuration.

Preinitialization

Before beginning the installation process, verify that the hardware installation is complete. Verify that the NAS 1500s is completely installed in the rack and that all cables and cords are connected.

Note: If you need assistance with rack installation or hardware connections, refer to the rack installation instructions included in the shipping carton.

Collecting configuration information

Choose a host name and collect general information before initializing the NAS 1500s.

Collect the general information required to initialize the NAS device for both dynamic host configuration protocols (DHCP) and non-DHCP configurations. You will be asked for this information during configuration, as shown in Table 5. Become familiar with this information before attempting to configure the NAS device.

Table 5: Configuration Information

Part A: To Be completed for DHCP and non-DHCP configurations			
Server Host Name:			
Part B: To be completed for non-DHCP configurations only			
DNS Servers	IP Address		
1			
2			
3			
NAS NIC Port*	IP Address	Subnet Mask	Gateway Address
NIC 1			
NIC 2			
* The default NAS 1500s has two Ethernet ports available for network connectivity. Disable ports that will not be used. Each Ethernet port must be configured with a separate subnet.			
Part C: SNMP Information (optional)			
Trap Destination (IP Address) Manager Client:			
Management Traps Community String:			
System Management Community String:			

WebUI configuration

The WebUI is designed to be a graphical, easy-to-use application that gathers the necessary information for configuration. The WebUI may be accessed through three methods:

- RapidLaunch method
- Remote Browser method (using hostname)
- Direct Attach method

Note: You can configure this system through the WebUI or manually through Remote Desktop or Windows Storage Server 2003 Desktop.

Note: The NAS 1500s is designed to be deployed without a monitor, keyboard, and mouse. These ports are available and supported by the NAS device, if used.

RapidLaunch method

The NAS 1500s includes a RapidLaunch CD that can run on any Windows-based PC using Internet Explorer 5.5 (or later).

Requirements

The following items are required to run the WebUI configuration application:

- Windows-based PC loaded with Internet Explorer 5.5 (or later) on the same network segment as the NAS 1500s
- RapidLaunch CD

Procedure

To initialize the NAS 1500s:

⚠️ **Caution:** Do not power up the NAS device until steps 1 through 5 are completed.

1. Connect the Ethernet cables to the respective network ports of the NAS 1500s and the corresponding network segments. See Figure 2 and Table 2 for the locations of the network ports on the NAS 1500s.

Note: Connect a loopback cable to any of the NAS 1500s Ethernet ports that are not configured for use.

2. Verify that the Windows-based PC client is connected to the same subnet as the NAS 1500s.

3. Power on the PC and wait until the operating system has completely loaded.

4. Insert the RapidLaunch CD into the CD-ROM drive of the PC.

5. The RapidLaunch CD should run automatically. If the program does not start up automatically, the program may be run manually. Click **Start**, select **Run** on the Windows taskbar, and then type the following:

    ```
    {CD ROM drive}:\setup.exe
    ```

    Wait for the interface to start.

6. Go to the NAS device and power it on. It will be several minutes before the NAS device is accessible on the network.

7. Return to the PC. Select **StorageWorks NAS** from the **Show** drop-down list to have RapidLaunch list all NAS devices on the network, as shown in Figure 5.
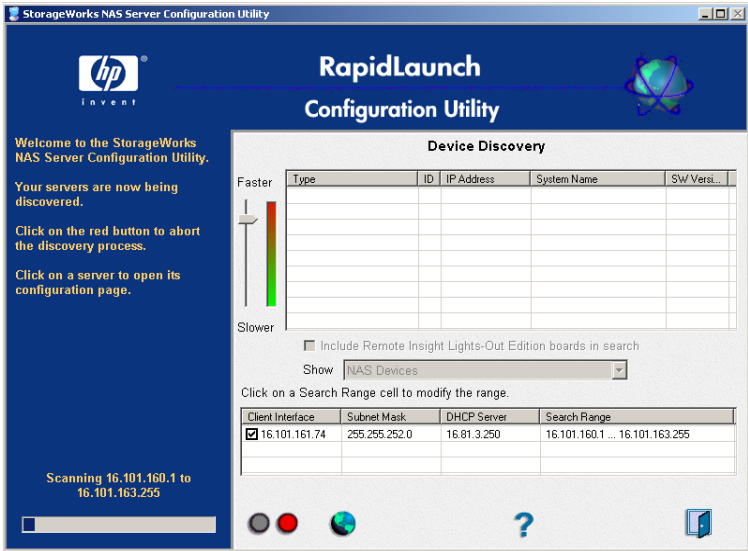
Figure 5: RapidLaunch search screen

8. All the NAS devices found on the network are displayed as shown in Figure 6. It may take several minutes for the NAS device to be found on the network.

Note: The RapidLaunch utility will refresh periodically, looking for new devices on the network. Refresh the device list manually by selecting the Refresh button.
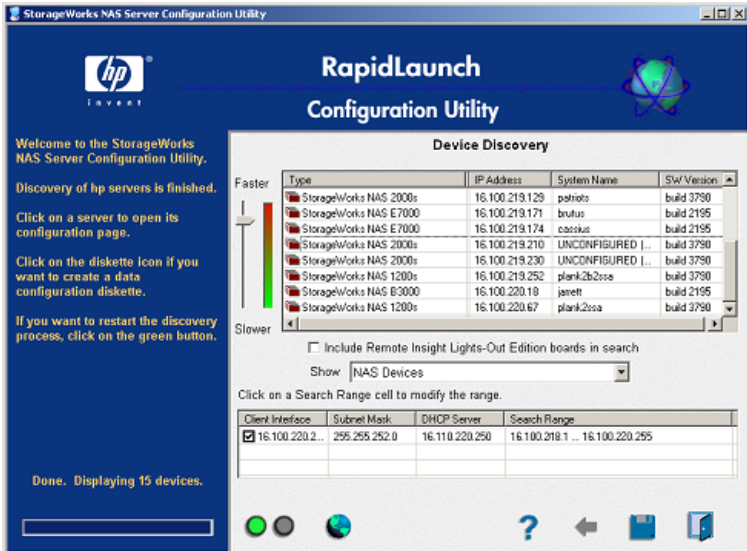
Figure 6: RapidLaunch device discovery screen

9. Select the unconfigured HP StorageWorks NAS 1500s device from the device list. If more than one displays, check the serial number in the *System Name* column by clicking the appropriate cell.

Note: Version 2.7.134 of the RapidLaunch utility displays the 1500s as a 1200s.

10. Login to the WebUI. This launches the WebUI configuration application (Rapid Startup) on the target HP StorageWorks NAS device, as shown in Figure 8.

Note: The default login for the WebUI is administrator and the password is hpinvent. The WebUI uses the same login as the local administrator's account or an account with administrative privileges.

11. Go to "Rapid Startup Wizard configuration" on page 34 to complete the setup procedures.

Remote browser method (using hostname)

The NAS 1500s ships with DHCP enabled on the network port. If the system is placed on a DHCP enabled network and the serial number of the device is known, it can be accessed through a client running Internet Explorer 5.5 (or later) on that network, using the 3202 port of the device. The serial number is located below the power source on the back of the NAS 1500s, as illustrated in Figure 7.
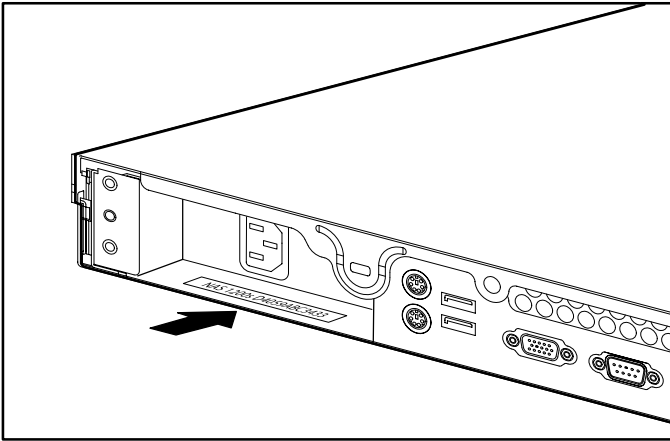

Figure 7: Serial number location

Requirements

The following items are required to run the WebUI configuration application:

■ Windows-based PC loaded with Internet Explorer 5.5 (or later) on the same segment as the NAS 1500s

■ DHCP-enabled network

■ Serial number of the NAS 1500s

Procedure

To initialize the NAS 1500s:

1. Connect the Ethernet cables to the respective network ports of the NAS 1500s and the corresponding network segments. See Figure 2 and Table 2 for the locations of the network ports on the NAS 1500s.

2. Go to the NAS device and power it on. It will be several minutes before the NAS device is accessible on the network.

Note: The NAS device will respond when the NAS operating system has started.

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3. Open Internet Explorer on the PC. Enter `https://`, the serial number of the NAS 1500s followed by a hyphen (-), and then `:3202`. Press **Enter**.

    Example: `https://D4059ABC3433-:3202`

Note: Substitute the server name for the serial number if a server name was previously set.

---

4. Login to the WebUI. This launches the WebUI configuration application (Rapid Startup) on the target HP StorageWorks NAS device, as shown in Figure 8.

Note: The default login for the WebUI is `administrator` and the password is `hpinvent`. The WebUI uses the same login as the local administrator's account or an account with administrative privileges.

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5. Go to "Rapid Startup Wizard configuration" on page 34 to complete the setup procedures.

Direct attach method

You can access the WebUI using a monitor, mouse, and keyboard directly attached to the NAS 1500s.

Procedure

To initialize the NAS 1500s:

1. Connect the Ethernet cables to the respective network ports of the NAS 1500s and the corresponding network segments.

2. Connect the monitor, mouse, and keyboard directly to the rear panel connectors of the NAS 1500s. See Figure 2 and Table 2 for the locations of the connectors on the NAS 1500s.

3. Open Internet Explorer to launch the WebUI configuration application (Rapid Startup) on the target NAS device, as shown in Figure 8. If the WebUI does not launch connect to the *LocalHost* and login to the WebUI.

Note: The default login for the WebUI is `administrator` and the password is `hpinvent`. The WebUI uses the same login as the local administrator's account or an account with administrative privileges.

---

4. Go to "Rapid Startup Wizard configuration" on page 34 to complete the setup procedures.

Rapid Startup Wizard configuration

This utility will guide you through the configuration process.

Requirements

Ensure that an Internet Explorer window has been opened and the WebUI is at the Rapid Startup Wizard as shown in Figure 8.
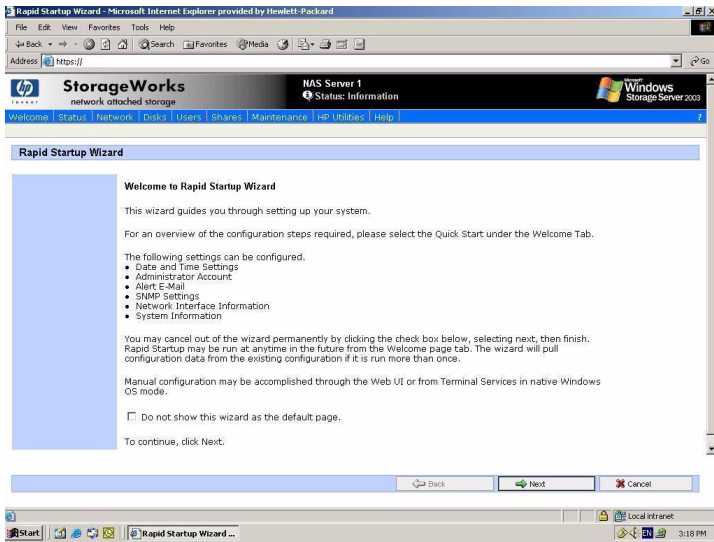

Figure 8: Rapid Startup wizard screen

Note: The Rapid Startup Wizard will be the default page unless you complete the wizard or select the checkbox next to the text that reads, "Do not show this wizard as the default page."

Procedure

Using the information from Table 5, fill in the screens that follow.

1. Select **Next** to start the Rapid Startup Wizard (There may be a slight pause because the wizard is gathering information about the system and populating the fields.)

2. Configure the Date and Time Settings. Select **Next** to continue.

3. Configure the Administrator Account settings. Select **Next** to continue.

4. Configure the Alert Email settings. Select **Next** to continue.

5. Configure the SNMP Settings. Select **Next** to continue.

6. Configure the Network Interface Information for both NICs. Select **Next** to continue.

7. Configure the System Information. Select **Next** to continue.

8. Verify that your information is correct when the configuration review screen is displayed as shown in Figure 9.
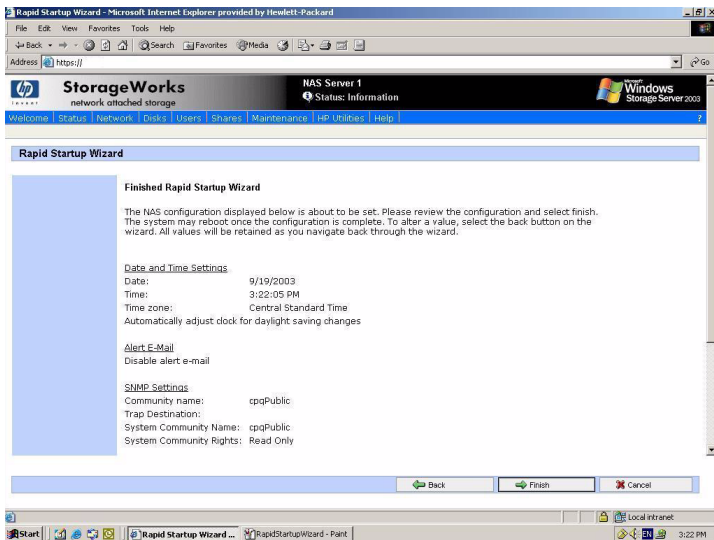

Figure 9: Rapid Startup configuration review screen

9. Click **Finish** to exit Rapid Startup. If a reboot is required, Rapid Startup displays a message that a reboot is occurring and the configuration information will be set.

The browser will return to the status page. The refresh may take several minutes if the device was restarted.

Note: Once the Rapid Startup Wizard has been completed the Welcome page will become the default page.

Disk partitioning, RAID configuration, and failover

The four hard drives included in the 1500s are configured for hardware RAID fault tolerance using the Adaptec 2410SA SATA RAID Controller.

- The Primary OS Logical Drive is configured as a 9GB RAID 1 mirror spanning drives 0 and 1.

- The Secondary OS Logical Drive is configured as a 9GB RAID 1 mirror spanning drives 2 and 3.

The Data volume is configured as a RAID 5 volume spanning the remaining space across all four drives. The BIOS supports a boot failover mechanism that will allow the system to automatically boot to the next drive if a failure occurs on the previously booted hard drive.

Table 6: RAID configuration by hard drives

Hard Drive 0	Partition C: 9GB Primary OS	Partition F: User Data in RAID-5
Hard Drive 1	Partition C: 9GB Primary OS Mirror	Partition F: User Data in RAID-5
Hard Drive 2	Partition D: 9GB Backup OS	Partition F: User Data in RAID-5
Hard Drive 3	Partition D: 9GB Backup OS Mirror	Partition F: User Data in RAID-5

Table 7: RAID configuration by logical drives

Logical Drive 1	Partition C: 9GB Primary OS - RAID 1 Mirror spanning physical drives 0 and 1
Logical Drive 2	Partition D: 9GB Secondary OS - RAID 1 Mirror spanning physical drives 2 and 3
Logical Drive 3	Partition F: Data volume using remaining disk space - RAID 5 volume spanning physical drives 0, 1, 2, and 3

Note: In Adaptec Storage Manager, logical disks are labeled 1, 2, and 3. In Disk Manager, logical disks are displayed as 0, 1, and 2. The default configuration for the data volume can be modified using the Disk Management utility. Refer to the administration guide for additional information.

The BIOS supports the following default boot sequence:

1. USB CD-ROM
2. HDD 0, 1, 2

Note: This is logical drive 1, 2, and 3 as presented by the SATA RAID controller.
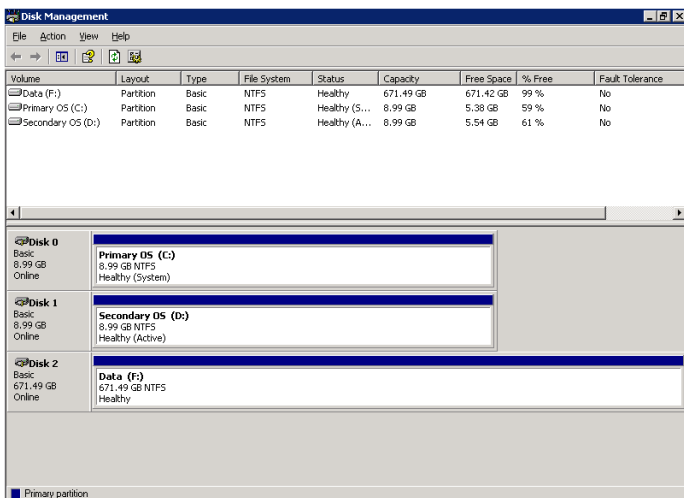
3. PXE

Figure 10: Disk management, partitioning

Under normal circumstances, the NAS 1500s boots up from the Primary OS Logical Drive. If the system experiences a drive failure, the Adaptec 2410SA will begin an audible alert to inform the user of a drive failure. If a single drive failure occurs, it will be transparent to the OS. If a second drive fails, the Data volume will be lost and will need to be restored from backup. When the Primary OS has a failure such as system files becoming corrupted, registry corrupted and the system hangs during boot, the 1500s will failover to the Secondary OS. The system can be run from the Secondary OS, however, the user should backup their user data and then use the Quick Restore DVD to restore the system to the factory default state as soon as conveniently possible. The number of boot attempts on the Primary OS can be manually configured in the BIOS. It is recommended that the timeout value be set to 5 minutes or greater.

Creating file shares

Once the storage space is set up, file shares are created by selecting an entire volume or a particular folder on a volume and designating that space as a network volume. That space is then available to groups of client computers on the network. The client computers access this space through a variety of file sharing protocols using the disk space to store their files and folders.

1. Click the **Shares** tab and select **Shares**.

2. Click **Folders** to create a new folder on the previously created volumes, or use an existing folder.

   a. Select a volume and click **Manage Folders > New...**

   b. Type the *folder name* and click **OK**.

3. Click **Shares** to create a file share by designating a network share name and folder location.

   a. Click **New** and type a *name* and a *path*.

Note: Check Create Folder if the directory does not exist.

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   b. Set client types to designate the types of client computers that should be allowed access to the share.

   c. Click the appropriate Client Sharing Method from the General list to set user and group permissions on the share.

Completing basic setup

This completes the basic configuration of the HP StorageWorks NAS system, however, some computing environments may require additional settings and configuration as noted below.

Completing the system configuration

Most of these tasks can be completed using the HP StorageWorks NAS WebUI. All procedures for the configuration tasks may be found in the *HP StorageWorks NAS 1500s Administration Guide*.

- Configure shadow copies for creating point-in-time snapshots of data volumes.

- Configure data replication software via Microsoft File Replication Services.

- Place the NAS system in a domain (highly recommended).

- Enable and establish space usage quotas.

- Configure DFS (Distributed File System) or publish the NAS system's shares into an already existing DFS structure.

- Enable additional protocols and create the associated file shares.

- Adjust logging for system, application, and security events.

- Install additional third-party software, such as backup, anti-virus, or monitoring agents.

- Configure UNIX® user and group mappings.

- Create and verify a full NAS system backup before putting the system into production.

- Configure Printer Services.

Replacing a failed hard drive

Follow these steps to install the hot-pluggable hard drive into the system.

⚠ **Caution:** Do not replace more than one hard drive at a time.

1. Remove the NAS 1500s front bezel.

    a. Locate the two bezel latches found on the front of the bezel. Push the latches inward.

    b. Pull the front bezel away from the unit.

2. Remove the failed hard drive from the disk enclosure before installing a new hard drive.

    a. Use the release lever to disengage the hard drive.

    b. Pull the drive from the server.

3. Slide the replacement drive into the server.

    Be sure that the drive is fully seated and that the release lever locks into place.

The new drive is automatically rebuilt using the RAID settings of the remaining drives.

Detecting a hard drive failure

The hard drive indicator light shows the status of the hard drive:

■ **Unlit**—drive is idle

■ **Fast blinking**—there is drive activity

■ **Slow blinking**—drive failure or rebuild mode

If the hard drive light indicates a failure, check the application log or Adaptec Storage Manager by selecting Adaptec Storage Manager from the **Disks** tab.

Note: The system also emits a failed hard drive alert sound.

Regulatory Compliance Notices

A

Federal Communications Commission Notice

Part 15 of the Federal Communications Commission (FCC) Rules and Regulations has established Radio Frequency (RF) emission limits to provide an interference-free radio frequency spectrum. Many electronic devices, including computers, generate RF energy incidental to their intended function and are, therefore, covered by these rules. These rules place computers and related peripheral devices into two classes, A and B, depending upon their intended installation. Class A devices are those that may reasonably be expected to be installed in a business or commercial environment. Class B devices are those that may reasonably be expected to be installed in a residential environment (personal computers, for example). The FCC requires devices in both classes to bear a label indicating the interference potential of the device as well as additional operating instructions for the user.

The rating label on the device shows which class (A or B) the equipment falls into. Class B devices have an FCC logo or FCC ID on the label. Class A devices do not have an FCC logo or FCC ID on the label. Once the class of the device is determined, refer to the following corresponding statement.

Class A equipment

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference, in which case the user will be required to correct the interference at personal expense.

Class B equipment

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

■ Reorient or relocate the receiving antenna.

■ Increase the separation between the equipment and receiver.

■ Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.

■ Consult the dealer or an experienced radio or television technician for help.

Modifications

The FCC requires the user to be notified that any changes or modifications made to this device that are not expressly approved by Hewlett-Packard Company may void the user's authority to operate the equipment.

Cables

Connections to this device must be made with shielded cables with metallic RFI/EMI connector hoods in order to maintain compliance with FCC Rules and Regulations.

Declaration of conformity for products marked with the FCC logo - United States only

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

For questions regarding your product, contact:

Hewlett-Packard Company

P. O. Box 692000, Mail Stop 530113

Houston, Texas 77269-2000

Or, call

1-800- 652-6672

For questions regarding this FCC declaration, contact:

Hewlett-Packard Company

P. O. Box 692000, Mail Stop 510101

Houston, Texas 77269-2000

Or, call

(281) 514-3333

To identify this product, refer to the Part, Series, or Model number found on the product.

Canadian Notice (Avis Canadien)

Class A equipment

This Class A digital apparatus meets all requirements of the Canadian Interference-Causing Equipment Regulations.

Cet appareil numérique de la classe A respecte toutes les exigences du Règlement sur le matériel brouilleur du Canada.

Class B equipment

This Class B digital apparatus meets all requirements of the Canadian Interference-Causing Equipment Regulations.

Cet appareil numérique de la classe B respecte toutes les exigences du Règlement sur le matériel brouilleur du Canada.

European Union Notice

CE

Products bearing the CE marking comply with the EMC Directive (89/336/EEC) and the Low Voltage Directive (73/23/EEC) issued by the Commission of the European Community and if this product has telecommunication functionality, the R&TTE Directive (1999/5/EC).

Compliance with these directives implies conformity to the following European Norms (in parentheses are the equivalent international standards and regulations):

- EN 55022 (CISPR 22) - Electromagnetic Interference
- EN55024 (IEC61000-4-2, 3, 4, 5, 6, 8, 11) - Electromagnetic Immunity
- EN61000-3-2 (IEC61000-3-2) - Power Line Harmonics
- EN61000-3-3 (IEC61000-3-3) - Power Line Flicker
- EN 60950 (IEC 60950) - Product Safety

BSMI Notice

警告使用者：

這是甲類的資訊產品，在居住的環境中使用時，可能
會造成射頻干擾，在這種情況下，使用者會被要求採
取某些適當的對策。

Japanese Notice

ご使用になっている装置にVCCIマークが付いていましたら、次の説明文を
お読み下さい。

この装置は、情報処理装置等電波障害自主規制協議会（VCCI）の基準
に基づくクラスB情報技術装置です。この装置は、家庭環境で使用するこ
とを目的としていますが、この装置がラジオやテレビジョン受信機に近接し
て使用されると、受信障害を引き起こすことがあります。
取扱説明書に従って正しい取り扱いをして下さい。

VCCIマークが付いていない場合には、次の点にご注意下さい。

この装置は、情報処理装置等電波障害自主規制協議会（VCCI）の基準に
基づくクラスA情報技術装置です　この装置を家庭環境で使用すると電波
障害を引き起こすことがあります。この場合には使用者が適切な対策を講ず
るよう要求されることがあります。

NAS 1500s Installation Guide

Electrostatic Discharge

B

To prevent damage to the system, be aware of the precautions you need to follow when setting up the system or handling parts. A discharge of static electricity from a finger or other conductor may damage system boards or other static-sensitive devices. This type of damage may reduce the life expectancy of the device.

To prevent electrostatic damage, observe the following precautions:

- Avoid hand contact by transporting and storing products in static-safe containers.

- Keep electrostatic-sensitive parts in their containers until they arrive at static-free workstations.

- Place parts on a grounded surface before removing them from their containers.

- Avoid touching pins, leads, or circuitry.

- Always be properly grounded when touching a static-sensitive component or assembly.

Grounding methods

There are several methods for grounding. Use one or more of the following methods when handling or installing electrostatic-sensitive parts:

■   Use a wrist strap connected by a ground cord to a grounded workstation or computer chassis. Wrist straps are flexible straps with a minimum of 1 megohm ± 10 percent resistance in the ground cords. To provide proper grounding, wear the strap snug against the skin.

■   Use heel straps, toe straps, or boot straps at standing workstations. Wear the straps on both feet when standing on conductive floors or dissipating floor mats.

■   Use conductive field service tools.

■   Use a portable field service kit with a folding static-dissipating work mat.

If you do not have any of the suggested equipment for proper grounding, have an authorized reseller install the part.

Note: For more information on static electricity, or for assistance with product installation, contact your authorized reseller.

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