Lucent Technologies
Bell Labs Innovations

WaveStar SubNetwork Management System (SNMS)

Installation Guide

Release 6.0

190-224-142
Issue 1
October 2001

Notice

Every effort was made to ensure that this information product was complete and accurate at the time of printing. Information is subject to change; however, Lucent Technologies assumes not responsibility for any errors that might appear in this document.

Mandatory customer information

This information product does not contain any mandatory customer information.

Interference information: Part 15 of FCC rules

NOTE: This equipment has been tested and found to comply within the limits.

Trademarks

WaveStar is a registered trademark and SLC is a trademark of Lucent Technologies.
Hewlett-Packard, HP, and HP-UX are registered trademarks of Hewlett-Packard.
INFORMIX is a registered trademark of Informix Software, Inc.
Microsoft is a registered trademark and Windows and Windows NT are trademarks of Microsoft Corporation.
Pentium is a registered trademark of Intel Corporation.
UNIX is a registered trademark in the United States and other countries licensed exclusively through X/Open Company Limited.

Limited Warranty

Lucent Technologies provides a limited warranty for this product. For more information, consult your local Account Representative.

Ordering information

The ordering number for this information product is 190-224-142. To order this document from within the United States, call 1-888-LUCENT8 (1-866-582-3688); from outside of the United States, call 1-317-322-6416. For WEB orders for commerical customers, go to http://www.lucent8.com. For WEB orders for Lucent associates, go to http://www.cic.lucent.com.

Technical support

In the United States, technical assistance can be obtained by calling Lucent's Technical Support Center at 1-866 -LUCENT8 (1-866-582-3688). Outside of the United States, contact your Local Customer Support (LCS) or the support organization designated by your Lucent customer team representative. If you are unsure of who to call, contact the Global Technical Support Center at 1-630-224-4672.

Developed by Lucent Learning.

Lucent Technologies values your comments!

WaveStar SNMS
Installation Guide Release 6.0

190-224-142 Release 6.0, Issue 1 Date: October 2001

Lucent Technologies welcomes your comments on this information product. Your opinion is of great value and helps us to improve.

1. Was the information product:

	Yes	*No*	*Not applicable*
In the language of your choice?	☐	☐	☐
In the desired media (paper, CD-ROM, etc.)?	☐	☐	☐
Available when you needed it?	☐	☐	☐

Please provide any additional comments:

_____

_____

2. Please rate the effectiveness of this information product:

	Excellent	*More than satisfactory*	*Satisfactory*	*Less than satisfactory*	*Unsatisfactory*	*Not applicable*
Ease of use	☐	☐	☐	☐	☐	☐
Level of detail	☐	☐	☐	☐	☐	☐
Readability and clarity	☐	☐	☐	☐	☐	☐
Organization	☐	☐	☐	☐	☐	☐
Completeness	☐	☐	☐	☐	☐	☐
Technical accuracy	☐	☐	☐	☐	☐	☐
Quality of translation	☐	☐	☐	☐	☐	☐
Appearance	☐	☐	☐	☐	☐	☐

If your response to any of the above questions is "*Less than satisfactory*" or "*Unsatisfactory,*" please explain your rating.

_____

_____

3. If you could change one thing about this information product, what would it be?

_____

_____

4. Please write any other comments about this information product:

_____

_____

Please complete the following if we may contact you for clarification or to address your concerns:

Name: _____ Date: _____

Company/organization: _____ Telephone number: _____

Address: _____

Email address: _____ Job function: _____

If you choose to complete this form online, go to http://www.lucent-info.com/comments
Otherwise fax to 407 767 2760 (U.S.) or +1 407 767 2760 (outside the U.S.) or email comments to ctiphotline@lucent.com

Contents

3 Ignite-UX! Tasks

4 WaveStar SNMS Application Upgrade

About This Information Product

Purpose

The *WaveStar SNMS Installation Guide* provides application information for the installation, turn-up, and configuration of the WaveStar® Subnetwork Management System (SNMS).

Reason for issue

This *Installation Guide* is a new document that supports WaveStar SNMS Release 6.0 (R6.0).

Safety labels

Safety labels are not applicable to this document.

Intended audience

This document is intended for system administrators or operations personnel who are responsible for the installation and administration of WaveStar SNMS.

Users should thoroughly understand the UNIX® operating system and should be familiar with the administration of computers that run the UNIX operating system. Users should also understand the functioning of Local Area Networks (LANs) in order to install and administer the WaveStar SNMS system.

How to use this information product

This document, which should be used as a guide to installing this release of WaveStar SNMS, is organized into the following parts:

- The front matter of the document consists of a title page, copyright page, customer comment form, a contents section, and this preface. The customer comment form should be used to provide

feedback on the document. The contents section, which is titled *Contents*, should be used to locate a particular numbered procedure.

- The body of the document consists of nine chapters and six appendices that are detailed in the *Contents*. The chapters contain numerous procedures, which should be used for the actual installation and/or upgrade of the product. The appendices contain useful reference material. Many of the procedures refer to technical material provided in the appendices.
- The back matter of the document consists of a cross-referenced index, which should be used to access topics quickly.

Conventions used

This document uses the following typographical conventions:

- The names of commands, any text entered by the user, and selections made by the user appear in **boldface type.**
- The names of documents, document parts, directories, files, and words being defined appear in *italics.*
- System messages and output appear in `monospace type.`

How to comment

Customer satisfaction is extremely important to Lucent Technologies and we at Lucent welcome your comments. All of our users are encouraged to provide feedback on the WaveStar SNMS documents using the customer comment form that appears immediately after the title page of this document. Please complete the form and fax it to the number provided.

1 Getting Started with the Basics

Overview

Purpose This chapter provides general information about the overall installation of WaveStar SNMS.

Contents The following topics are discussed in this chapter.

Before You Begin

Ignite-UX! and a Set of Software Tools

A set of software tools is used to install all WaveStar SNMS applications. These tools help to configure logical volumes and file systems, add logins and groups, and set up various files that support the WaveStar SNMS application.

Beginning with WaveStar SNMS R5.1, the installation process is performed through ***Ignite-UX!***. The entire process has been simplified, and scripts guide you from the installation of the Core OS, HP OpenView, and the WaveStar SNMS tools through the installation and configuration of the WaveStar SNMS application.

Check the System Configuration

Before you begin any installation, refer to the *WaveStar SNMS Applications and Planning Guide* and *Appendix E, HP Server Specifications* to determine whether you have the current hardware configuration that is supported for this release.

Check the GUI and Firewall Ports

For the GUI to work properly, certain firewall ports must be unassigned. Therefore, before the installation process commences, these firewall ports must remain open:

1570, 2000, 3000, 4000, 4998, 4999

The following output illustrates the method in which the status of these ports can be verified:

```
siren:psit | grep GUI*
GUI□□er□er      *  □□r  t□p  □□□□  □□n□□□  □□□   □□□□
GUI□□□□in□er□er *  □□r  t□□p  □□n□□□  □□□ □ □□□
```

The current, unassigned port numbers are ***2000*** and ***4999***; the ports used for WaveStar SNMS features, such as cut-through and software download, are 6323 and 6318.

Know How to Get Help for snmsInstall

At any time during the installation, you can interrupt the Ignite-UX! process by inputting the interrupt character, which is, in most cases, **<Control> <C>**.

By interrupting the Ignite-UX! process, you can verify hardware or a log file, or start the Ignite-UX! process from a particular installation or loading point. Such interruptions of Ignite-UX! are facilitated with the **snmsInstall** command. For on-line help with **snmsInstall**, type:

snmsInstall - ?

The **snmsInstall** parameters and a brief explanation appear as shown.

snmsInstall [-R|-p|-o|-h|-t|-c|-i|-a|-e] [-r] [-s] [-S]

Where:

-R Restore the system configuration. i.e., /startup and VGs.

-p Start **snmsInstall** from the installation of the WaveStar SNMS OS Patch bundle.

-o Start **snmsInstall** from the installation of the HP OpenView.

-h Start **snmsInstall** from the installation of the H/A software.

-t Start **snmsInstall** from the loading WaveStar SNMS Tools; i.e. Informix, Orbix, and Patches.

-c Start **snmsInstall** from the loading WaveStar SNMS ColdStart.

-i Start **snmsInstall** from the running init_disk.

-a Start **snmsInstall** from the configuration of the application.

-e End the installation—set the state to ***Done.***

-r Only reset the new state; do not execute.

-s Display the current WaveStar SNMS installation state.

-S Execute one option only—do not continue to the next state.

-? Print this message for help.

Syntax Examples:

To reset to a different state, execute the following command line:
snmsInstall -r [-p|-o|-h|-t|-c|-i|-a|-e]

To retrieve the current state, execute the following command line:
snmsInstall -s

To run a single command only, execute the following command line:
snmsInstall [-p|-o|-h|-t|-c|-i|-a] -S

Verify the Checklists and Complete the Worksheets Thoroughly

The forms in *Appendix F, Checklists and Worksheets* will help you to gather essential information that is needed to upgrade existing systems and to install redundant systems.

Use the checklists to verify that you have the appropriate information and materials at hand before beginning.

When installing redundant systems, accurate cluster installation and configuration information is vital to the success of the installation; therefore, it is important to complete these worksheets in detail because:

- They provide input for the **init_disk** template modification.
- They provide input for the **installHA** script.
- They document the configured system for future maintenance.

Useful Commands

When completing the worksheets, the following commands are useful to determine the correct and needed information:

- **uname -a**
- **dmesg**
- **ioscan -fn**
- **lanscan**
- **vgdisplay -v [/dev/vgXX]**

□

The Order of the Installation

Order of the Items

During installation, the order for installing the items must proceed as follows:

1. WebConsole, for HP's L-Class and N-Class servers only
2. Ignite-UX! process in which the HP-UX 11.0 OS, the drivers, and the OS patches are installed
3. HP OpenView, which is optional
4. WaveStar SNMS High Availability (HA), which is optional
5. WaveStar SNMS Tools, which include Informix, Orbix, and Perl
6. snmsInstall -c, which includes the following:
   - loading ColdStart (from the WaveStar SNMS Application CD-ROM)
   - formatting disks (init_disk utility)
   - running the ColdStart script
   - installing and configuring the WaveStar SNMS Application (ems)
   - configuring the ACC/X.25 software, which is optional
7. HP OpenView License installation (optional)

□

Procedure 1-1 Configuring the Southbound LAN

Overview

The System Administration Manager (SAM) and the **ifconfig** command are used to configure and verify the southbound LAN interface to the network elements (NEs).

Use Separate Subnets

The IP address of the LAN card used for the southbound traffic must be on a separate subnet than the LAN card selected as the local TCP/IP.

Assign REAL versus DUMMY Southbound IP Addresses

If the communication protocol to the NEs is pure OSI, use SAM to assign a *dummy* IP address to the southbound LAN card. For example, 17.17.17.xxx (where: xxx equals any three numbers that are to be used) and a netmask of 255.255.255.0.

If the communication protocol to the NEs is OSI over TCP/IP, use SAM to assign a *real* IP address that is on a separate subnet to the southbound LAN card, which is the same IP address that is to be used on the NEs as the IP address of the DSA (assuming the NE is provisioned as a transport bridge and the DSA is on the SNMS host). The netmask for this LAN interface is provided by the customer.

Default Gateway Routing

SAM assigns the same default gateway router IP address to all LAN cards. This default gateway router IP address is the address that is entered when loading HP-UX 11.0 or changed via the **set_parms addl** command.

Depending on the type of subnet, the LAN cards will likely use different default gateway routers. (Remember, physical routers allow multiple logical subnets and gateways to be created.) If the LAN cards use different default gateways, manually edit the */etc/rc.config.d/netconf* file and follow the documented format in the file to assign a different default gateway IP address to each LAN card.

Duplicate IP to Name Resolution in /etc/hosts

SAM forces an alias to be created for each additional LAN card that is configured because the WaveStar SNMS host system name is used for each interface. Check the */etc/hosts* file to ensure that duplicate IP to host name resolutions do not exist. See *Procedure 1-2 Adding an Entry to the /etc/hosts File*.

Task Use these steps to configure Network Interface Cards (NICs) using the System Administration Manager (SAM).

1. At the # prompt, enter sam:
   sam
2. While SAM is coming up, press **Enter** to specify all the defaults.
3. When SAM appears, use the arrow keys to go to **Networking and Communications**.
4. Use the arrow keys to select **Network Interface Cards**.
5. Press **Enter**.
6. Select the correct Network Interface Card (NIC).
7. Tab to **Actions**.
8. Use the arrow keys to select **Configure**.
9. Insert the IP address, the host name alias, and the subnetwork mask.
10. Select **OK**.

END OF STEPS

□

Procedure 1-2 Adding an Entry to the /etc/hosts File

Purpose This procedure is used to add an entry to the */etc/hosts* file.

Task Use these steps to add an entry to the */etc/hosts* file.

1 Login as **root**.

2 Use the **vi** editor to access the */etc/hosts* file:
vi /etc/hosts

3 Add a command line entry using the following format:
<IP address> <Tab> <hostname> <space> <optional fully qualified host name>
Example: **135.17.13.252 <Tab> timon timon.ho.lucent.com**

4 Save the changes you have made.

5 Logoff the system.

END OF STEPS

□

2 HP Web Console Installation

Overview

Purpose This chapter provides the procedures that are needed to install and/or configure HP's WebConsole on the its L-Series and N-Series servers.

> **Important!** The tasks/procedures documented in this chapter should be performed by HP specialists; therefore the tasks/ procedures provided in this chapter are for reference purposes only.

Contents This provides information on the following topics:

Procedure 2-1 Cabling the HP WebConsole

Purpose

The L-Series and N-Series servers can support a typical system console; however, HP ships these servers with its secure WebConsole.

The WebConsole, which resides at the back of the L-Series or N-Series server, enables installers and administrators to access the server remotely via a LAN connection, a Web browser, and an IP address.

The WebConsole is connected to the office LAN and has a unique IP address—meaning, its IP address is different from the server's IP address. It is connected to the server by a serial cable.

Before you begin

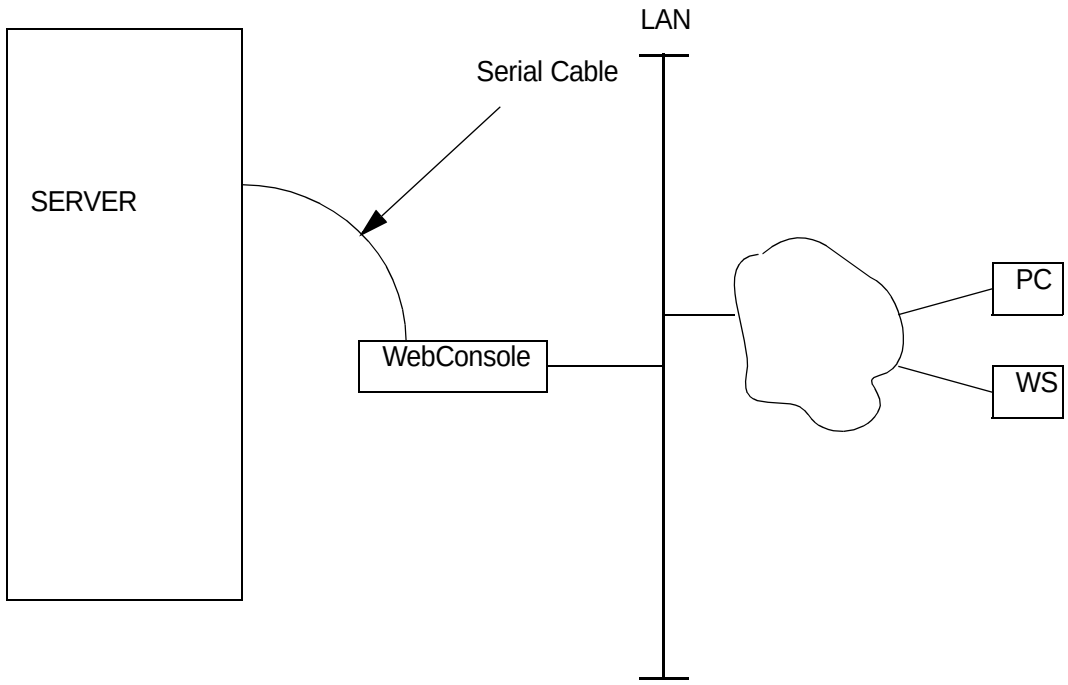
You will need a laptop computer and a serial cable.

The serial cable is attached between the WebConsole and server **after** the WebConsole is configured.

Task

The following figure illustrates how to install the hardware. The serial cable should be attached between WebConsole and server **after** the WebConsole is configured.

Figure 2-1 WebConsole Configuration and Installation



Procedure 2-2 Setting Up the HP WebConsole

Purpose

For the initial setup, the HP WebConsole must be on the same physical LAN as the client PC, which is where the Web browser is running and where the initial configuration is to be performed. The most convenient method is to use a twisted Ethernet cable between WebConsole and client PC.

Before you begin

Before beginning, have the following ready:

- the IP address and subnet mask for WebConsole
- the MAC address of the WebConsole
- the name of the server to be administrated

Task

Use these steps to initially configure the HP WebConsole.

1 Verify that the client PC and WebConsole connect to the same physical LAN.

2 Verify that a Java-enabled Web browser, such as Netscape 4.x or higher or IE 4.x or higher, is available on the client PC.

3 Power off any devices having the IP address of 192.0.0.192, which is pre-configured as the WebConsole.

4 Detach the serial cable between WebConsole and server for the security protection of the server.

5 Power on WebConsole.

6 If the WebConsole was previously configured, reset the WebConsole to the pre-configured address of 192.0.0.192. See *Procedure 2-5 Resetting the HP WebConsole to its Initial Configuration*.

7 Disable proxies on the browser or add 192.0.0.192 to the No Proxy needed list.

8 Add 192.0.0.192 to routing table:
route add 192.0.0.192 [client_host IP address]

9 Enter the command: **ping 192.0.0.192**

Result: If **ping** is not successful, configure using the MAC address: **arp -s 192.0.0.192 [MAC_address]**. The Welcome Screen from the Web browser appears on *http://192.0.0.192*.

END OF STEPS

Procedure 2-3 Creating the First Administrator Account Screen

Purpose This procedure is used to create the first administrator account screen.

Before you begin You will need to provide the name, login, and password of WebConsole administrator. The password must contain at least six characters.

To login to the server from the WebConsole, the server's login and password are also needed. Once the WebConsole is reset (see Configuration Reset Procedure), this user information is lost.

Task Use these steps to configure the first administrator account screen.

1 Click **OK** at the Welcome Screen.

Result: The Create First Administrator Account screen appears.

2 For Name, provide the name of the WebConsole administrator.

3 For Information, type **Miscellaneous Information**.

4 For Login, supply the user name of the WebConsole administrator.

5 For Password, supply the password, which must be at least 6 characters, of the WebConsole administrator.

6 Click **OK**.

END OF STEPS

□

Procedure 2-4 Configuring the IP Screen

Purpose

This procedure is used to configure the HP WebConsole's IP address, gateway, and system name.

After the IP configuration, the WebConsole assumes the name and the IP address supplied by the user. The WebConsole's default IP address of 192.0.0.192 will no longer be the IP address of WebConsole.

Before you begin

You will need the name given to the WebConsole; the IP addresses of the WebConsole, the subnet mask, and the gateway of the WebConsole; and the name of system to which the WebConsole is attached.

Task

Use these steps for the IP configuration.

1. Follow the guide from the **Create First Administrator Account** screen to the **Configure IP** screen.
2. For the Secure Console Name, provide the name given to WebConsole (for example: web+"name of the server").
3. For the IP address, provide the IP address for the WebConsole.
4. For the IP subnet mask, provide the IP address of the subnet mask.
5. For the IP gateway, provide the IP address for the gateway address.
6. For the System Name, provide the name of the system to which this WebConsole is attached.
7. Click **OK**.
8. Click **OK** to reboot.

Result: The system reboots.

9 Unplug the power lead to power off the WebConsole.

10 Click **Reload** on the web browser screen.

11 Proceed to *Procedure 2-6 Setting up the Emulation Mode*.

END OF STEPS

Procedure 2-5 Resetting the HP WebConsole to its Initial Configuration

Purpose

This procedure is used to perform a configuration reset on the WebConsole, which restores the WebConsole to its original factory settings. For example: the IP address for the WebConsole will become 192.0.0.192 again.

This procedure should only be performed when required—for example: when a password has been lost.

Before you begin

Since all previously configured information is lost during a configuration reset, note any existing configuration information that you would like to keep.

Task

Use these steps for a configuration reset.

1 Power off the console by unplugging the power cord.

2 Press down the button on the console while powering on the console.

3 Release the button after a few second to reset the HP secure WebConsole to its original factory settings.

END OF STEPS

□

Procedure 2-6 Setting up the Emulation Mode

Purpose This procedure is used to set up the emulation mode. Once the emulation mode has been set up, HP OpenView can be accessed through the WebConsole.

Before you begin Before you begin this procedure, the WebConsole must be installed and configured.

Related information When this procedure is completed, proceed with installation of HP OpenView, which is documented in *Procedure 3-3 Installing HP OpenView*.

Task Use these steps to set up the emulation mode.

1 Click **Access Console**.

2 Select **Zoom In/Out** or **In/Out**.

3 On the top of menu, select **Settings->Emulation**.

Result: An **Emulation Settings** screen appears.

4 Click **Emulation**.

5 Change [Alpha Emulation] to **2392A**.

6 Click **OK.**

7 Close the WebConsole screen.

8 From the left side, click **Network**.

9 Change the Terminal Type variable to **hp2392**.

10 Proceed with the HP OpenView installation, which is documented in *Procedure 3-3 Installing HP OpenView*.

END OF STEPS

3 Ignite-UX! Tasks

Overview

Purpose This chapter provides the procedures that are needed to install and/or configure HP-UX software and the WaveStar SNMS application.

Contents This provides information on the following topics:

Procedure 3-1 Booting the HP Servers

Purpose This procedure is used to boot the HP Series 9000 Servers. The HP K-Class, L-Class, and N-Class servers boot via the autoboot process; however, the server autoboot process can be halted and booting can be redirected to a device of your choice.

Before you begin Before the HP servers can be booted or before operating system software can be installed on the HP L-Series or N-Series servers, the WebConsole must be configured. Refer to procedures previously supplied in *Chapter 2, HP Web Console Installation***.**

You need the appropriate WaveStar SNMS R6.0 CD-ROM for the server on which the software is being installed:

- HP-UX 11.0 Core OS-64 Bit is for HP L-Class and N-Class servers.
- HP-UX 11.0 Core OS-32 Bit is for HP K-Class servers.

To redirect the autoreboot process, you need to know the hardware path of the boot device that contains the WaveStar SNMS R6.0 CD-ROM. To find the address of the CD-ROM drive, use the **search IPL** command and look for the line that shows *sescsi.2*.

Task Use these steps to boot the HP Series 9000 Servers.

1 Power up the system.

2 Insert the appropriate WaveStar SNMS R6.0 Core CD-ROM into the drive.

Result: The system begins to autoboot. The HP copyright screen appears along with the message `Processor is booting from first available device . . .`

3 To discontinue and/or redirect the autoboot procedure, press any key during the first 10 seconds of the autoboot process.

Result: The **Main Menu** appears.

4 To redirect the autoboot process, specify the hardware path to the CD-ROM:
BOot <hardware path>

Result: The system boots from the device residing at the hardware path specified.

5 Respond **N** to the question `Interact with IPL (Y or N)?` **N**

Result: The system loads the Kernel, which takes about three to five minutes. The Welcome to Ignite-UX! screen appears.

END OF STEPS

□

Procedure 3-2 Installing HP-UX 11.0

Purpose

This procedure is used to install HP-UX 11.0 operating system from the Welcome to Ignite-UX! screen via the Advanced Installation screen tabs, which are used to configure the disk and file system. This task includes verifying configured memory, supplying the appropriate boot paths and devices, selecting file systems, setting system parameters, and modifying the file system.

Before you begin

The previous procedure, *Procedure 3-1 Booting the HP Servers*, must be completed.

In steps 8 through 12, you must supply the following information, so make sure it is handy:

- host name
- IP address of the host
- root password
- network services, such as the name of the static router, NIS, DNS, and XNTP
- time zone

Related information

Ignite-UX! provides a simplified, menu-driven method of installing HP-UX 11.00 on HP's K-Class, L-Class, and N-Class servers.

The Advanced Installation option consists of the following screen tabs:

- Basic, which automatically supplies configuration information such as the operating system version and revision, the operating environment, the root disk, the file system, memory size data, and GUI language.

  Either of these two options appear for File System:

  – ***SNMS K/18GB*** is used for K-Class servers.

  – ***SNMS Root Disk*** is used for L-Class and N-Class servers, or for K-Class servers configured with 9GB disks.

- Software, which automatically lists the software product and a description of that product.

  Either of these two options appear for Product:

  – ***SNMS32BitDrivers*** is used for K-Class servers.

– ***SNMS64BitDrivers*** is used for L-Class and N-Class servers.

Each driver file contains the 100BaseT LAN drivers plus patches, the X.25 driver, and the Unlimited User License.

- ***System***, which requires you to supply the name of the host, the IP address of the host, the appropriate time zone, the root password, and for redundant configurations, network services.
- ***File System***, which enables you to do a variety of file system and disk configuration tasks. It is at this tab that disk configuration information automatically appears for VG00 and VG01. This information should match your system configuration requirement.

  For redundant configurations, the default disk selected by Ignite-UX! might not be the disk you want.

Task Use these steps to install HP-UX 11.0 using Ignite-UX!.

1 At the Welcome to Ignite-UX! screen, tab to **Install HP-UX** and press **Enter**.

Result: The User Interface and Media Options screen appears.

2 Under the Source Location Options, tab to **Media only installation** and press **space**.

3 Under User Interface Options, tab to **Advanced Installation** and press **space**.

4 Tab to **OK** and press **Enter**.

Result: An *opt/ignite/bin/itool ()* menu screen appears that shows specifications for the tab **Basic**.

5 Under the **Basic** tab at the **Root Disk** line, verify that the root disk is set to the correct destination drive.

Result: If the root disk is set to the correct destination drive, enter the correct information. The system automatically selects all other configuration assignments.

6 Tab to **Software** and press **Enter**.

Result: A menu screen appears that shows specifications for the tab **Software**.

7 At the Software tab, do not deselect any choices for the driver package or the Hardware Enablement and Critical Patch bundle. Tab to **System** and press **Enter**.

Result: A menu screen appears that shows specifications for the tab **System,** which is where you will set the final system parameters.

8 At the System tab, tab to the **Hostname** and supply the name of the host.

9 Tab to the **IP Address** and supply the IP address of the host.

10 Tab to **Set Time Zone** and supply the time zone.

11 Tab to **Set Root Password** and supply the root password.

12 For redundant configurations or for those standlone systems that need to communicate with other machines, tab to **Network Services** and supply the static router, DNS, NIS, and XNTP information for the particular customer site.

13 You can also add other LAN interfaces, such as OSI LANs via the **Additional Interfaces** option.

14 Tab to **File System** and press **Enter**.

Result: A menu screen appears that shows specifications for the tab *File System*. It is at this tab that a variety of file system and disk configuration tasks can be performed.

15 At the File System tab, disk configuration information automatically appears for VG00 and VG01. Verify that this information matches your system configuration requirement.

WARNING

In a local redundancy configuration, an incorrect VG01 disk could be chosen. A shared disk from the other processor could be chosen instead of a disk located on the current processor.

16 Make any file system and/or disk configuration changes needed. In any Ignite-UX tab screen that you happen to be in, tab to **Go!** and press **Enter** to execute any changes made.

Result: If the system was not previously installed, screens appear that indicate `Starting system configuration...` and the final `OK` screen appears. The system reboots and returns the login prompt. Go to step 17. If the system was previously installed, a warning might appear. Ignore the warnings and go to the next step. If the installation cannot complete, `Failure` appears.

17 If warning messages appeared, ignore the warning, tab to **Go!** and press **Enter** again to execute any changes made.

Result: Screens appear that indicate `Starting system configuration...` and the final `OK` screen appears. The system reboots and returns the login prompt. Go to the next step.

18 Continue with *Procedure 3-3 Installing HP OpenView*.

END OF STEPS

Procedure 3-3 Installing HP OpenView

Purpose This procedure is used to install HP OpenView, which is only required for the WaveStar OLS 400G/800G/1.6T NEs.

Before you begin You must have installed HP-UX 11.0 using Ignite-UX!. Refer to *Procedure 3-2 Installing HP-UX 11.0*.

You need the HP OpenView CD-ROM.

Related information This procedure is related to *Procedure 3-13 Installing the HP OpenView License*.

Task Use these steps to install the HP OpenView product.

1 If you are already logged in as root, go to step 2. If you are not logged in as root, at the login prompt, login as **root**.

Result: The HP Restricted Rights screen appears and warns that you are logged on as superuser.

2 Answer **y** when the system prompts `Do you want to install HP OpenView (y/n)?` **y**

Result: The system responds with `Installing HP Openview...` and tells you to insert the HP OpenView CD-ROM.

3 Insert the HP OpenView CD-ROM into the drive and press **Enter**.

4 Answer **y** to the prompt `Do you plan to install any DM products?` (y/n) **y**

5 Answer **y** to the prompt `Do you want to continue and install the Bundled RFC1006 product? (y/n)` **y**

6 Answer **y** to the prompt `Do you still want to continue? (y/n)` **y**

7 Answer **n** to the prompt `Do you want to install the OTS manpages? (y/n)` **n**

8 Answer **n** to the prompt `Do you want to start OTS at boot time?(y/n)` **n**

Result: The system begins to install the first set of OTS files for OTS/9000 and RFC1006. When it completes, the following message appears: `You must now configure an IP address for RFC1006. The script will start the OTS configuration tool...`

9 Press **Enter** to start the configuration tool.

Result: The RFC1006 Configuration/Set Configuration Mode screen appears.

10 Press the **Perform Task** button when in the HP terminal mode or press **[<Ctrl> <f>] <4>** when in the VT100 terminal mode.

Result: The following warning appears: `The osiconfchk program reported a validation warning....`

11 Press **Space**.

Result: The system requires you to perform an add, view/modify, or delete on the RFC1006 Subnetwork.

12 Select **Add**.

Result: The Add RFC1006 Subnetwork screen appears.

13 Enter the IP address of the current host.

14 Press the **Perform Task** button when in the HP terminal mode or press **[<Ctrl> <f>] <4>** when in the VT100 terminal mode.

Result: The message `Task completed. You'll be returned to the previous menu...` appears.

15 Press **Space**.

Result: The previous menu appears.

16 Select the **Exit OSICONF** button when in the HP terminal mode or press **[<Ctrl> <f>] <4>** when in the VT100 terminal mode.

Result: The message `Changes have been made that will not take effect unit OTS has been (re)started....` appears

17 Press **Space**.

Result: A confirmation message appears and the system reboots.

18 At the login prompt, login as **root**.

Result: The installation continues and the system once again warns you that you are logged in as superuser.

19 Press **Enter.**

20 When prompted to select a supported language, enter **1** for English.

Result: The system responds with a list of the HP OpenView telecommunications products that you can install.

21 When prompted for the numbers of the products that you want to install, enter first the number **1** for the DM TMN Agent Platform.

22 Enter the number **2** for the DM TMN Agent Platform Man Pages.

23 When prompted for the next product number, enter **q** to stop.

24 Answer **y** when the system prompts whether you want to continue with this installation.

Result: The installation continues. When completed, an `Execution succeeded` screen appears.

25 If you are installing a high availability redundant system, continue with the installation of the WaveStar HA product, which is explained in *Procedure 3-4 Installing HA Software*.

26 If you are not installing a high availability redundant system, bypass the HA installation by pressing **n** when prompted.

Result: The system then prompts you to install the WaveStar SNMS Tools product, which is explained in *Procedure 3-6 Installing WaveStar SNMS Tools*.

END OF STEPS

Procedure 3-4 Installing HA Software

Purpose This procedure is used to install WaveStar SNMS High Availability (HA) software (installHA), which includes the MirrorDisk, MC/ServiceGuard, the HA Monitor, and EMS.

WARNING

Before you proceed, verify that the site of installation has already purchased and secured a license for MirrorDisk, MC/ServiceGuard, and the HA Monitor.

Before you begin You will need the WaveStar SNMS HA CD-ROM.

Task Use these steps to install the WaveStar SNMS HA fileset.

1 Login as **root**.

2 At the prompt, `Do you want to install H/A software (y/n):` answer **y**.

3 Insert the WaveStar SNMS HA CD-ROM into the drive.

Result: The system instructs you to press <Return> when ready.

4 Press **Return.**

Result: The system begins to install the HA software and when completed, reboots the system.

5 Proceed to *Procedure 3-6 Installing WaveStar SNMS Tools*.

END OF STEPS

Procedure 3-5 Installing MirrorDisk Software

Purpose This procedure is used to install WaveStar SNMS MirrorDisk software. Any installation site can now choose to mirror all disks without a HA redundancy host.

Before you begin You will need the WaveStar SNMS HA CD-ROM.

Task Use these steps to install the WaveStar SNMS MirrorDisk fileset.

1 Login as **root**.

2 At the prompt, `Do you want to install H/A software (y/n)?`, answer **n**.

3 At the prompt, `Do you want to install Disk Mirroring software (y/n)?,` answer **y**.

4 Insert the WaveStar SNMS HA CD-ROM into the drive.

Result: The system instructs you to press <**Return**> when ready.

5 Press **Return.**

Result: The system begins to install the HA software and when completed, reboots the system.

6 Proceed to *Procedure 3-6 Installing WaveStar SNMS Tools*.

END OF STEPS

□

Procedure 3-6 Installing WaveStar SNMS Tools

Purpose This procedure is used to install WaveStar SNMS tools, which include Informix, Orbix, and Perl.

Before you begin You will need the WaveStar SNMS Tools CD-ROM.

Task Use these steps to install WaveStar SNMS Tools fileset.

1 If you are not logged in, login as **root**.

2 Insert the WaveStar SNMS Tools CD-ROM into the drive.

Result: The system instructs you to press <**Return**> when ready.

3 Press **Return**.

Result: The message `Installing Informix Dynamic Server` appears and loading commences. All three filesets—Informix, Orbix, and Perl—should now be loaded. When loading is completed, you will be prompted to run ColdStart.

END OF STEPS

□

Procedure 3-7 Loading the ColdStart Utility

Purpose This procedure is used to load the WaveStar ColdStart utility.

Before you begin You will need the WaveStar SNMS Application CD-ROM.

Related information Refer to *Appendix A, ColdStart Screen Output* for additional information.

Task Use these steps to load the WaveStar SNMS ColdStart fileset.

1 If you are not logged in, login as **root**.

2 Insert the WaveStar SNMS Application CD-ROM into the drive.

Result: The system instructs you to press <**Return**> when ready.

3 Press **Return**.

Result: The ColdStart fileset is now loaded. When it is completed, the message `Starting init_disk, hit <Return> when ready` is displayed.

4 Proceed to *Procedure 3-8 Running the init_disk Utility*.

END OF STEPS

□

Procedure 3-8 Running the init_disk Utility

Purpose This procedure is used to run the init_disk utility.

Before you begin The previous procedure, *Procedure 3-7 Loading the ColdStart Utility***,** must be completed.

You will need the WaveStar SNMS Application CD-ROM.

Related information If init_disk is running for the first time on your system, it automatically verifies and collects hardware information on your system and then configures the hard disk with little intervention from you. The init_disk utility saves the collected configuration data in the /startup directory for future use.

At the end of the init_disk utility, the system indicates if the process is successful (`success`) or a failure (`fail`). To make sure that the init_disk process has completed properly, check for any errors in the file */tmp/init_disk.log*.

Refer to *Appendix B, init_disk Scenario* for more information on how to respond to the prompts that are displayed.

Task Use these steps to run the **init_disk** utility.

1 When you are prompted to start init_disk, press **Return** when you are ready.

Result: The **init_disk** utility begins execution. You are now prompted to re-execute the command **/tmp/init_disk**.

2 Enter **/tmp/init_disk.**

Result: The init_disk utility begins to set up a disk configuration with Performance Monitoring (PM). When init_disk completes, the message `Configuring SNMS (installEms), hit <Return> when ready` appears.

END OF STEPS

□

Procedure 3-9 Executing undo_disk

Purpose This procedure is only used to reverse the effects of the init_disk utility during the installation procedure. The undo_disk utility restores the system (file systems, logical volumes, physical volumes) to the state which existed prior to running init_disk. The undo_disk utility does not undo the ColdStart process that runs before init_disk.

Before you begin Once undo_disk is executed, it prompts you for the following:

- ***y*** to undo one specific configuration
- ***n*** not to undo one specific configuration
- ***all*** to undo every configuration

Related information Refer to *Appendix B, init_disk Scenario* for more information on init_disk and undo_disk.

Task Use these steps to run undo_disk.

1 Login as **root**.

2 Change directories: **cd /tmp.**

3 Enter command **./undo_disk.**

4 Answer the prompts for each undo task by selecting **y**, **n**, or **all**.

5 Enter the following commands to verify that the system is restored to its original configuration:
ls -l /dev/vg*
bdf

Result: You should only see the volume groups VG00 and VG01 configured and the file systems that are associated with these two volume groups.

6 Reboot the system.

END OF STEPS

□

Procedure 3-10 Running the ColdStart Utility

Purpose

This procedure is used to run the WaveStar SNMS ColdStart utility. The WaveStar SNMS ColdStart utility installs the following:

- the HP OpenView ATOS patches, which reside in */tmp/installPF3000*
- the X.25/ACC, if the X.25 hardware is present
- Informix software
- Orbix software

Before you begin

You will need the Informix Dynamic Server serial number and key to run the WaveStar SNMS ColdStart utility.

You will need the WaveStar SNMS Application CD-ROM for this procedure.

Related information

ColdStart uses these default values, which you can change when the utility displays them for your review.

- EMS home directory is */ems.*
- EMS Group ID (GID) is 200.
- Informix Group ID (GID) is 201.
- EMS User ID (UID) is 200.
- Informix User ID (UID) is 201.
- TL1 User ID (UID) is 203.

If ColdStart is running for the first time on your system, it automatically verifies and collects hardware information on your system and then configures the hard disk with little intervention from you. The ColdStart process saves the collected configuration data in the */startup* directory for future use.

If ColdStart is interrupted before its completion or ColdStart must be re-run, the following choices are available:

- You can re-use previously collected configuration data, skip previously performed configuration steps, or start the whole ColdStart process from the beginning. (The data saved in */startup* is removed.)

- If you use previously collected configuration data, ColdStart displays information such as the EMS home directory, the user ID, and group ID. You can verify and change one item of data or you can use the saved data.
- If ColdStart was interrupted before running to its completion, it remembers where it was interrupted. For the configuration, you can then skip a particular step, re-run a step, or run all subsequent steps.

To make sure that the ColdStart process has completed properly, check the result in */tmp/coldStart.log*.

If you are running X.25 on an HP N-Class server, you must do an additional step (step 5) to install X.25 patches.

Refer to *Appendix A, ColdStart Screen Output* for a sample of ColdStart output.

Task Use these steps to run the WaveStar SNMS ColdStart utility.

1 If you are not logged in, at the login prompt, login as **root**.

Result: The system responds with `Loading SNMS ColdStart...` and asks whether you want to load ColdStart from CD-ROM or tape.

2 Enter **c** for CD-ROM.

Result: The system tells you to insert the WaveStar SNMS Application CD-ROM into the drive.

3 Insert the WaveStar SNMS Application CD-ROM into the drive.

Result: The system instructs you to press <**Return**> when ready.

4 Press **Return**.

Result: The system begins execution. When completed, the message `Configuring SNMS (installEMS) ...` is displayed.

5 Go to *Procedure 3-11 Installing the WaveStar SNMS Application (installEms)*.

END OF STEPS

Procedure 3-11 Installing the WaveStar SNMS Application (installEms)

Purpose

This procedure is used to install the WaveStar SNMS Application, which is referred to as *installEms*.

Before you begin

This procedure can take up to two hours to complete, so make sure you have allotted sufficient time.

You will be prompted for the ATOS license. Have this information handy.

If X.25 or other configurations must be made, make those configurations at this time; then, return to this procedure.

Related information

Refer to the first portion of *Appendix C, WaveStar SNMS New Installation Input/Output* for information on how to respond to the prompts.

Task

Use these steps to install the WaveStar SNMS Application.

1 If you have just run the WaveStar SNMS ColdStart utility, go to step 3. If you are not logged in, login as **root** and go to step 2.

2 Enter **installEms** to execute the utility.

Result: The system outputs the message `Configuring SNMS (installEMS), hit <Return> when ready`.

3 Enter **Return**.

Result: The utility checks the hardware and a Main Menu appears.

4 When the Main Menu appears, select **3** to Install/upgrade EMS software.

Result: The system responds with `The EMS Application Installation is about to begin.`

5 Answer all prompts as shown in *Appendix C, WaveStar SNMS New Installation Input/Output*.

Result: The utility concludes with `Thank you for using "installEms"!` and then proceeds to log any EMS user off.

END OF STEPS

□

Procedure 3-12 Configuring the WaveStar SNMS Application (installEms)

Purpose This procedure is used to configure the WaveStar SNMS application (installEms).

Before you begin The previous procedure, *Procedure 3-11 Installing the WaveStar SNMS Application (installEms)***,** must be completed.

Related information Refer to the second portion of *Appendix C, WaveStar SNMS New Installation Input/Output* for information on how to respond to the prompts.

Task Use these steps to configure the WaveStar SNMS application.

1 Login as **root**.

2 Enter **installEms**.

Result: The system outputs the message `Configuring SNMS (installEMS), hit <Return> when ready`.

3 Enter **Return**.

Result: The system responds with `InstallEms is checking Hardware, please be patient!` and a Main Menu is displayed.

4 When the Main Menu appears, select **4** to make the provisional parameters effective.

Result: The system responds with `Starting the EMS PROVISIONING process...`

5 Answer all prompts according to the output shown in *Appendix C, WaveStar SNMS New Installation Input/Output*.

Result: The utility concludes with `Thank you for using “installEms”!` and then proceeds to log you off.

END OF STEPS

□

Procedure 3-13 Installing the HP OpenView License

Purpose

This procedure is used to install the HP OpenView License. HP OpenView is only required for the WaveStar OLS 400G/800G/1.6T NEs.

Before you begin

Before you begin this procedure, *Procedure 3-3 Installing HP OpenView*, must be completed.

While doing this procedure, you will have to run scripts and access files. If the appropriate directories do not exist, you will have to create them.

Related information

When inserting the NODELOCK license number into the */var/opt/ifor/nodelock* file, make sure the license number appears as the first line in the file. The license number cannot appear on more than one line. In addition, do not edit any other lines in the file.

Once the HP OpenView License is installed, make sure the license is installed properly and the status of the license is PERMANENT (steps 4 and 5). If the license is not installed properly or the status of the license is TEMPORARY, the system will stop working 60 days later. The license must be PERMANENT.

Important! The permanent license is obtained from HP.

Task

Use these steps to install the license for HP OpenView.

1 To obtain a NODELOCK license, use the SPU target for the machine, which can be obtained by executing the following script: **/opt/ifor/ls/bin/i4target -v**

Result: Permanent and SPU Target IDs are displayed. Use this information to obtain a permanent license.

2 Once a permanent license has been obtained, access the following file for editing: **vi /var/opt/ifor/nodelock**.

3 In the first line of the file, add the NODELOCK license number as a single line. (Do not change any other lines in the file.)

4 Confirm that the NODELOCK license works from the main console or from a window by running **dtterm**:
/usr/bin/X11/dtterm -C -display <IP address of the workstation>

5 On the main console or in the **dtterm** window, execute the following command lines:
cd /opt/OV/osiam/osiam26F
export PATH=$PATH:'pwd'
export OSIROOT=/var/opt/osiam
./startATOSHPOV

Result: The system starts the stack and HP OpenView. When HP OpenView starts, this line is displayed if the license is installed correctly: `HP OpenView DM-S: license type is PERMANENT`.

6 To shut down the stack and HP OpenView, execute the following command line:
./stopATOSHPOV.

END OF STEPS

□

Procedure 3-14 Installing the TMF Add-On

Purpose

This optional procedure is used to install the Telecommunications Management Forum (TMF) Add-On. The TMF Add-On is used for the northbound interface.

Before you begin

This optional procedure can take up to two hours to complete, so make sure you have allotted sufficient time.

You will need the WaveStar SNMS TMF CORBA Interface CD-ROM for this procedure.

Related information

Refer to the first portion of *Appendix C, WaveStar SNMS New Installation Input/Output* for information on how to respond to the prompts.

This procedure also requires you to access *Procedure 1-2 Adding an Entry to the /etc/hosts File*.

Task

Use these steps to install the TMF Add-On.

1 Login as **ems**.

2 Use **dn -x** to bring down WaveStar SNMS.

3 Log off.

4 Log in as **root**.

5 Insert the WaveStar SNMS TMF CORBA CD-ROM into the drive.

6 Mount the CD-ROM: **mount /dev/cdrom /cdrom**

7 Load the SNMS-TMF fileset:
swinstall -s /cdrom -x reinstall=true SNMS-TMF

Result: The TMF fileset is loaded.

8 Execute the following command: **initTmf**

Result: The utility determines if the system has enough disk space to add the tmf-db database. If enough disk space exists, the tmf-db is configured.

9 If step 7 is successful, enter the following command line: **installEms**

Result: The installEms software begins execution, checks the hardware, and displays a Main Menu.

10 When the installEMS Main Menu appears, select **5** to configure EMS using a profile that was saved from the last session.

Result: The system responds with `The EMS Application Installation is about to begin.` The utility concludes with `Thank you for using “installEms”!`

11 Add the IP address for WaveStar NMS by using the steps provided in *Procedure 1-2 Adding an Entry to the /etc/hosts File*.

12 Login as **ems**.

13 Bring WaveStar SNMS back up by executing: **up**

END OF STEPS

□

4 WaveStar SNMS Application Upgrade

Overview

Purpose This chapter describes the procedures for upgrading the WaveStar SNMS application.

Contents The following procedures are discussed in this chapter:

Procedure 4-1 Upgrading a Standalone WaveStar SNMS R6.0.x within the WaveStar SNMS R6.0.x Generic

Purpose

The following procedure is used to document the general steps required to upgrade WaveStar SNMS R6.0.x software release within the R6.0.x Generic.

Before you begin

In general, it is important that all steps in the Task are performed in the order documented.

You will need the WaveStar SNMS Application CD-ROM and the WaveStar SNMS Tools CD-ROM.

Related information

You will be required to use information supplied in *Chapter 3, Ignite-UX! Tasks* for installEms.

Task

Use these steps to upgrade a WaveStar SNMS R6.0.x software release within a R6.0.x Generic.

1 Log in as **ems**.

2 Execute the following command to stop the application prior to loading:
dn -x

3 Log off.

4 Log in as **root**.

5 Execute the following command line to determine if you have the correct version of Informix:
ls /tools/informix/etc/*files

Result: If the output is the same as the following, go to step 11:
/tools/informix/etc/IDSfiles /tools/informix/etc/connfiles
If the output is the same as the following, go to the next step:
/tools/informix/etc/IDSfiles /tools/informix/etc/ieccfiles

6 Bring Informix down and save the configuration files by executing the following command lines:
Log in as informix: **su - informix**
onmode -ky
cd /tools/informix
cp .profile /tmp/informix.profile
cp .rhosts /tmp/informix.rhosts
cp etc/sqlhosts /tmp
cp etc/onconfig /tmp
cp online.log /tmp
exit

Result: The system returns you to the root login.

7 Clean up the Informix directory by executing the following command lines:
cd /tools/informix
rm -fr *
cd /tmp

8 Insert the WaveStar SNMS Tools CD-ROM and execute the following command line: **snsmInstall -t -S**

9 Press **Enter** at prompt:
```
Please insert the SNMS Tools CD to the Driver,
Hit <Return> when ready.
```

10 Answer as indicated when system prompted to reinstall Dynamic Server, Orbix and Perl:
```
Dynamic Server has already been installed.
Do you want to Remove and Reinstall it (y/n)? y
ITorbix has already been installed.
```

```
Do you want to Remove and Reinstall it (y/n)? n
Perl has already been installed.
Do you want to Remove and Reinstall it (y/n)? n
```

Result: The new version of Informix IDS has been loaded .

11 Remove the WaveSTar SNMS Tools CD-ROM and insert the WaveStar SNMS Application CD-ROM.

12 At the prompt, execute the following command line: **snmsInstall -c -S**

13 When prompted to remove and reinstall ColdStart, answer **y**:

```
SNMS ColdStart has already been loaded.
Do you want to Remove and Reinstall it (y/n)? y
```

14 If your Informix version is correct, go to step 19. If your Informix version is not correct, execute the following command line at the prompt: **snmsInstall -a -S**

15 Press **Enter** at prompt: `Starting ColdStart and configuring SNMS, hit <Return> when ready...`

16 When prompted to remove and reinstall the HP/OV ATOS patches and configure X.25/ACC, answer **n**:

```
Installing HP/OV ATOS patches...
SNMS PF3000 has been loaded
Do you want to Remove and Reinstall it (y/n)? n
Do you want to configure X.25/ACC (y/n)? n
```

Result: The ColdStart Utility starts.

17 The Informix license stays the same as before. Make sure all information listed is correct; then, enter **s** to save and continue.

18 Answer as indicated when prompted to skip setUpInformix, setUpOrbix:

```
setUpInformix() has already performed once. Do
you want to skip it?  n
setUpOrbix() has already performed once. Do you
want to skip it?  y
```

Result: Informix IDS has been re-installed.

19 At the EMS Installation and Configuration Screen, choose **0** to Exit.

20 Start the Informix Engine by executing the following command lines:
Log in as informix: **su - informix**
cd /tools/informix
cp /tmp/informix.profile .profile
cp /tmp/informix.rhosts .rhosts
cp /tmp/online.log online.log
cp /tmp/sqlhosts etc/sqlhosts
cp /tmp/onconfig etc/onconfig
. ./.profile
oninit
onstat - (Execute to make sure Informix is back online.)
exit

Result: The Informix engine is up again and the system returns you to the root login.

21 Resume the installation of the WaveStar SNMS Application by executing the following command line: **cd /ems;installEms**

22 Use *Procedure 3-11 Installing the WaveStar SNMS Application (installEms)* and *Procedure 3-12 Configuring the WaveStar SNMS Application (installEms)* to install the WaveStar SNMS Application.

23 Log in as **ems**.

24 Execute the following command to bring the WaveStar SNMS application back online: **up**

END OF STEPS

Procedure 4-2 Upgrading WaveStar SNMS TMF R6.0.x within the WaveStar SNMS TMF R6.0.x Generic

Purpose

The following procedure is used to document the general steps required to upgrade the WaveStar Telecommunications Management Forum (TMF) R6.0.x software release within a R6.0.x Generic.

Before you begin

In general, it is important that all steps in the Task are performed in the order documented.

You will need the WaveStar SNMS Northbound TMF CORBA Interface CD-ROM.

Task

Use these steps to upgrade a WaveStar TMF R6.0.x software release within a R6.0.x Generic.

1 Load the WaveStar SNMS Northbound TMF CORBA Interface CD-ROM into the appropriate drive.

2 Log in as **ems**.

3 Execute the following command to stop the application prior to loading:
dn -x

4 Log off.

5 Log in as **root**.

6 Mount the CD-ROM: **mount /dev/cdrom /cdrom**

7 Run swinstall:
swinstall -s <Tape/CD-ROM device> -x reinstall=true SNMS-TMF
Example: swinstall -s /dev/rmt/0m -x reinstall=true SNMS-TMF

8 Log off.

9 Log in as **ems**.

10 Execute the following command to bring the WaveStar SNMS Application back online: **up**

END OF STEPS

□

Procedure 4-3 Upgrading a Redundant WaveStar SNMS R6.0.x within the WaveStar SNMS R6.0.x Generic

Purpose

The following procedure is used to upgrade a redundant WaveStar SNMS R6.0.x system within the WaveStar SNMS R6.0.x Generic.

Before you begin

The procedures provided in the Task section are for redundant configurations. These procedures require you to log on and log off the primary and the secondary/remote HP host servers.

During the upgrade of the WaveStar SNMS application, the application looses its connection to its NE for a period of time. To keep data loss to a minimum, perform the upgrade procedure at a quiet period when:

- NEs are not added or deleted.
- NEs do not have any equipment changes.

WARNING

Before you begin this procedure, the primary host must be running as active and the secondary/remote host must be running as standby.

You will need the WaveStar SNMS Application CD-ROM and, optionally, the WaveStar SNMS Northbound TMF CORBA Interface CD-ROM and the WaveStar SNMS Tools CD-ROM.

In general, it is important that all steps in the Task are performed in the order documented.

Related information

This procedure requires you to follow the steps in *Procedure 4-1 Upgrading a Standalone WaveStar SNMS R6.0.x within the WaveStar SNMS R6.0.x Generic* and in the procedures found in *Chapter 3, Ignite-UX! Tasks*.

Task

Use these steps to upgrade a redundant WaveStar SNMS R6.0.x system within the WaveStar SNMS R6.0.x Generic.

1 On the primary host, login as **ems**.

2 Execute the following command line to kill the Orbix process ID:
kill -9 <orbixd process ID>

Result: The HA_Mgr process is being killed. Wait until the HA_Mgr process is killed before going to the next step.

3 On the secondary/remote host, login as **ems**.

4 For geographic redundancy configurations, execute the following command line:
HA_MgrClient -m setOperMode -o ACTIVE

5 Verify that the secondary/remote host is running as active before going to next step by executing the following command line:
showtop

6 On the primary host, follow steps 1 through 9 in *Procedure 4-1 Upgrading a Standalone WaveStar SNMS R6.0.x within the WaveStar SNMS R6.0.x Generic*. When the system prompts you to rebuild the Informix engine with `EMS new host Informix Database configuration?` answer **no**.

7 If the TMF Add-On has not been ordered, go to the next step.
If the TMF Add-On is being installed for the first time, refer to *Procedure 3-14 Installing the TMF Add-On*. If the TMF Add-On has already been installed, follow steps 1 through 8 in the *Procedure 4-2 Upgrading WaveStar SNMS TMF R6.0.x within the WaveStar SNMS TMF R6.0.x Generic.*

8 On the primary host, login as **ems**.

9 Execute the command: **su root** (Do not use the dash.)

10 Execute the following command line to regenerate the HA scripts:
/ems/etc/installHA

11 Execute the following command to logout: **exit**

Result: The system returns you to the ems ID.

12 Use the **vi** editor to access the */ems/etc/HA_Topology.cfg* file:
vi /ems/etc/HA_Topology.cfg

13 In the */ems/etc/HA_Topology.cfg* file, change the *status* field to **active** where the *site* field is equal to *local_primary.*

14 In the */ems/etc/HA_Topology.cfg* file, change the *status* field to **down** where the *site* field is equal to *local_secondary* or *remote_primary.*

15 Save the changes made to the */ems/etc/HA_Topology.cfg* file.

16 Exit out of **vi**.

Result: You will be in **ems** environment.

17 Execute the following command line to remove the replication configuration:
er_remove

18 Execute the following command line to refresh the Informix engine:
er_refresh

Result: If you are on the primary host, you will receive the following message, which you should ignore: `couldn't find /tools/Informix/etc/buildsmi.snms`

19 On the secondary/remote host, login as **root**.

20 Execute the following command line:
cmhaltpkg -v sncPkg

WARNING

Wait until the HA_mgr process has been killed in this step before going to the next step.

21 On the primary host, execute the command: **su root** (Do not use the dash.)

22 Execute the following command lines:
cmmodpkg -e -n <primary host> sncPkg
cmviewcl

Result: If the package status received from the **cmviewcl** command does not display `starting`, go to the next step. If the package status received from the **cmviewcl** command does display `starting`, go to step 24.

23 If the package status received from the **cmviewcl** command does not display `starting`, execute the following command line:
cmrunpkg sncPkg

24 On the secondary/remote host, follow steps 1 through 22 in *Procedure 4-1 Upgrading a Standalone WaveStar SNMS R6.0.x within the WaveStar SNMS R6.0.x Generic.* In addition, if the TMF Add-On has not been ordered, go to the next step. If the TMF Add-On is being installed for the first time, refer to *Procedure 3-14 Installing the TMF Add-On***.** If the TMF Add-On has already been installed, follow steps 1 through 8 in *Procedure 4-2 Upgrading WaveStar SNMS TMF R6.0.x within the WaveStar SNMS TMF R6.0.x Generic.*

25 On the primary host in local redundancy configurations, execute the following command line: **/ems/etc/installHA**

26 On the secondary/remote host, login as **ems**.

27 To refresh the Informix engine, execute the following command line: **er_refresh**

28 Execute the command: **su root** (Do not use the dash.)

29 For local redundancy configurations, go to the next step. For geographic redundancy configurations only, execute the following command line: **/ems/etc/installHA**

30 Execute the following command line and provide the following responses:
/ems/etc/rejoin
`Remove ATS/RIS Directory from standby`: **Yes**
`ER configuration`: **Yes**
`Database Resync`: **Yes**

END OF STEPS

□

Procedure 4-4 Upgrading a Standalone WaveStar SNMS R5.1.x to WaveStar SNMS R6.0.x

Purpose

The following procedure is used to upgrade a standalone WaveStar SNMS R5.1.x to WaveStar SNMS 6.0.x.

Before you begin

The procedures provided in the Task section are for standalone configurations.

This procedure requires you to backup file systems to tape. Have at least eight tapes handy and label each tape clearly.

You will need the following CD-ROMs:

- WaveStar SNMS Core OS CD-ROM
  - WaveStar SNMS Core OS for 32-bit HP K-Servers
  - WaveStar SNMS Core OS for 64-bit HP L-Servers and N-Servers
- WaveStar SNMS Tools CD-ROM
- WaveStar SNMS Application CD-ROM
- WaveStar SNMS Northbound TMF CORBA Interface CD-ROM (optional)

In general, it is important that all steps in the Task are performed in the order documented.

Related information

During this procedure, you will be required to use information supplied in *Chapter 3, Ignite-UX! Tasks*.

Task

Use these steps to upgrade a standalone WaveStar SNMS R5.1.x to WaveStar SNMS R6.0.x.

1 Log in as **ems**.

2 Bring WaveStar SNMS down by executing **dn -x.**

3 Label a scratch tape *SNMS R5.1 data tar files*. Mount this scratch tape.

4 Back up flat files to tape using these command lines:
su - root
cd /
chmod -R +r /ems/dsa
chown -R ems:ems /ems/dsa
**tar cvf /dev/rmt/0m **
**/ems/etc/SDSenv_rc **
**/ems/dsa **
/ems/userdb

Result: A scratch tape containing the SNMS R5.1 data tar files has been created. Remove the tape from the drive.

5 Execute the following command to logout: **exit**

Result: The system returns you to the ems ID.

6 If the TMF interface is not used, go to the next step.
If the TMF interface is used, use the following command to get the value of the EMS_CLUSTER_ID:
echo $EMS_CLUSTER_ID

Result: When the system displays the value of the EMS_CLUSTER_ID, record the value.

7 Back up the databases to tape. At the command prompt, execute the following command: **ems_backup**

Result: You will have at least six tapes containing backup data.

8 Label each tape clearly and record the date. You will need these tapes later.

9 Copy the *installEms.out* file to a safe location because you will need this file later. Execute the following command lines:

cd /ems
cp installEms.out installEms.out.<MMDDYY>

10 Log out from **ems**.

11 Log in as **root**.

12 Execute the following command line: **clearTmf** and when prompted to backup the TMF database, answer **no.**
Note: If the system outputs the message: `ksh: clearTmf: not found,` ignore the message and go to step 15.

13 Execute the following command line: **swremove SNMS-TMF**

14 To remove all TMF-related variables, run **installEms** and select option **5** to configure EMS using a profile that was saved from the last session.

15 Depending on the hardware type, insert the CORE 32-bit (for K-Class servers) or the CORE 64-bit (for L-Class and N-Class servers) CD-ROM into the drive.

16 Execute the following command lines:
mount /dev/cdrom /cdrom
cd /cdrom
cp snmsInstall snmsUpgrade /tmp
cd /tmp
./snmsUpgrade

17 Remove the WaveStar SNMS CORE-OS CD-ROM and insert the WaveStar SNMS TOOLS CD-ROM into the drive.

18 Press **Control C** or **Delete** to exit from Installation script.

19 Bring down Informix IDS and save configuration files by executing the following command lines:
Log in as informix: **su - informix**
onmode -ky
cd /tools/informix
cp .profile /tmp/informix.profile
cp .rhosts /tmp/informix.rhosts
cp etc/sqlhosts /tmp
cp etc/onconfig /tmp
cp online.log /tmp
exit

Result: The system returns you to the root login.

20 Clean up the Informix directory by executing the following command lines:
cd /tools/informix
rm -fr *
cd /tmp

21 At command prompt, execute the following command line:
snmsInstall -t -S

22 Press **Enter** at prompt `Please insert the SNMS Tools CD to the Driver, Hit <Return> when ready`.

23 Answer as indicated when the system prompts you to reinstall the Dynamic Server, Orbix and Perl:

```
Dynamic Server has already been installed.
Do you want to Remove and Reinstall it (y/n)? y
ITorbix has already been installed.
Do you want to Remove and Reinstall it (y/n)? n
Perl has already been installed.
Do you want to Remove and Reinstall it (y/n)? n
```

Result: The new version of Informix IDS has been loaded.

24 Remove the WaveStar SNMS Tools CD-ROM and insert WaveStar SNMS Application CD-ROM.

25 At prompt, execute the following command line: **snmsInstall -c -S**

26 When prompted to remove and reinstall the ColdStart, answer **y**:

```
SNMS ColdStart has already been loaded.
Do you want to Remove and Reinstall it (y/n)? y
```

27 At prompt, execute the following command line: **snmsInstall -a -S**

28 Press **Enter** at prompt

```
Starting ColdStart and
configuring SNMS, hit <Return> when ready...
```

29 When prompted to remove and reinstall HP/OV ATOS patches and configure X.25/ACC, answer **n**:

```
HP/OV ATOS patches has already been installed.
Do you want to Remove and Reinstall it (y/n)? n
Do you want to configure X.25/ACC (y/n)? n
```

Result: ColdStart has started.

30 The Informix license stays the same as before. Make sure all information listed is correct, then enter **s** to save and continue.

31 Answer as indicated when prompted to skip setUpInformix, setUpOrbix:

```
setUpInformix() has already performed once. Do
you want to skip it?  n
setUpOrbix() has already performed once. Do you
want to skip it?  y
```

Result: Informix IDS has been reinstalled.

32 At the EMS Installation and Configuration Screen, choose **0** to Exit.

33 Start the Informix Engine by using the following command sequence:
Log in as informix: **su - informix**
cd /tools/informix
cp /tmp/informix.profile .profile
cp /tmp/informix.rhosts .rhosts
cp /tmp/online.log online.log
cp /tmp/sqlhosts etc/sqlhosts
cp /tmp/onconfig etc/onconfig
. ./.profile
oninit
onstat - (Execute to make sure Informix is back online.)
exit

Result: The Informix engine is up again and the system returns you to the root login.

34 Resume the installation of the WaveStar SNMS application by executing the following command lines:
cd /ems
installEms

35 Use *Procedure 3-11 Installing the WaveStar SNMS Application (installEms)* and *Procedure 3-12 Configuring the WaveStar SNMS Application (installEms)* to install the WaveStar SNMS Application.
Note: When the system prompts you to `rebuild the Informix engine with EMS new host Informix Database configuration`, answer **yes**.

36 If the TMF Add-On has not been ordered, go to the next step. If the TMF Add-On has been ordered, follow the steps in *Procedure 3-14 Installing the TMF Add-On*.

37 Log in as **ems**.

38 If the TMF interface has been previously used, make sure the value of the EMS_CLUSTER_ID is the same value that you have recorded in step 6.

Result: If the values match, go to step 40. If the values do not match, go to the next step.

39 If the values shown for the EMS_CLUSTER_ID in steps 6 and 38 do not match, access the *envfile_setup* file using the **vi** editor and add the old value of the EMS_CLUSTER_ID to make sure the value is correct:
vi /ems/etc/envfile_setup
Add **EMS_CLUSTER_ID=<R5.1 value>** right before the line showing: **export EMS_CLUSTER_ID**

40 Execute the following command line to clean up the PM cache directory:
rm -fr /ems/.pm/DbManager

41 Bring down the application and clean up the database using the following command lines:
dn
drdb
Answer **y** to `drop dsa`.

42 Restore the files from the backup tape labelled *SNMS R5.1 data tar files* using the following command lines:
su - root
cd /
**tar xvf /dev/rmt/0m **
**/ems/etc/SDSenv_rc **
**/ems/dsa **
/ems/userdb

43 Execute the following command to logout: **exit**

Result: The system returns you to the ems ID.

44 Restore the database from tapes by executing the following command:
ems_recover

45 Execute the following command line to convert the databases to the new schema:
SNMSDB5.1To6.0

Result: If you do not receive any error messages, the upgrade is completed. If you receive any error message in any step, execute **drdb**, restore the database from tapes (used in the previous step), fix the data or the procedure, and redo the conversion.

46 Bring WaveStar SNMS up by typing the following command: **up**

END OF STEPS

□

Procedure 4-5 Upgrading a Redundant WaveStar SNMS R5.1.x to WaveStar SNMS R6.0.x

Purpose

The following procedure is used to upgrade a redundant WaveStar SNMS R5.1.x to WaveStar SNMS 6.0.x.

Before you begin

The procedures provided in the Task section are for redundant configurations only.

During the upgrade of the WaveStar SNMS application, the application looses its connection to its NE for a period of time. To keep data loss to a minimum, perform the upgrade procedure at a quiet period when:

- NEs are not added or deleted.
- NEs do not have any equipment changes.

In addition, this procedure requires you to log on and log off the primary and the secondary/remote HP host servers.

WARNING

Make sure the primary host is running as active and the secondary/remote host is running as standby before you begin this procedure.

You will need the following CD-ROMs:

- WaveStar SNMS Core OS CD-ROM
  - WaveStar SNMS Core OS for 32-bit HP K-Servers
  - WaveStar SNMS Core OS for 64-bit HP L-Servers and N-Servers
- WaveStar SNMS Tools CD-ROM
- WaveStar SNMS Application CD-ROM
- WaveStar SNMS Northbound TMF CORBA Interface CD-ROM (optional)

This procedure requires you to backup file systems to tape. Have at least eight tapes handy and label each tape clearly.

Related information

During this procedure, you will be required to use information supplied in *Chapter 3, Ignite-UX! Tasks*.

Task

Use these steps to upgrade a redundant WaveStar SNMS R6.0.x from WaveStar SNMS R5.1.x.

1 On the primary host, login as **ems**.

2 Execute the following command line to kill the Orbix process ID:
kill –9 <orbixd process id>

Result: The HA_Mgr process is being killed. Wait until the HA_Mgr process is killed before going to the next step.

3 On the secondary/remote host, login as **ems.**

4 For geographic redundancy configurations, execute the following command line:
HA_MgrClient –m setOperMode –o ACTIVE

5 Verify that the secondary/remote host is running as active before going to next step by executing the following command line:
showtop

6 Upgrade the primary host by following steps 7 through 38.

7 Log in as **ems**.

8 Disable replication by executing the following command lines:
er_remove
er_refresh

Result: If you are on the primary host, you will receive the following message, which you should ignore: `couldn't find /tools/Informix/etc/buildsmi.snms`

9 Label a scratch tape *SNMS R5.1 data tar files*. Mount this scratch tape.

10 Back up flat files to tape using these command lines:
su - root
cd /
chmod -R +r /ems/dsa
chown -R ems:ems /ems/dsa
**tar cvf /dev/rmt/0m **
**/ems/etc/SDSenv_rc **
**/ems/dsa **
**/ems/userdb **
/ems/HA/LOC/config

Result: A scratch tape containing the *SNMS R5.1 data tar files* has been created. Remove the tape from the drive.

11 Execute the following command to logout: **exit**

Result: The system returns you to the ems ID.

12 If the TMF interface is not used, go to the next step.
If the TMF interface is used, use the following command to get the value of the EMS_CLUSTER_ID:
echo $EMS_CLUSTER_ID

Result: When the system displays the value of the EMS_CLUSTER_ID, record the value.

13 Back up the databases to tape. At the command prompt, execute the following command: **ems_backup**

Result: You will have at least six tapes containing backup data. Label each tape clearly and record the date.

14 Copy the *installEms.out* file to a safe location because you will need this file later. Execute the following command lines:
cd /ems
cp installEms.out installEms.out.<MMDDYY>

15 Exit to logout of **ems**.

16 Log in as **root**.

17 Execute the following command line: **clearTmf**.

Result: If the system outputs the message: `ksh: clearTmf: not found` ignore the message and go to step 20. If the system does not output the message, when prompted to backup the TMF database, answer **no.**

18 Execute the following command line: **swremove SNMS-TMF**

19 To remove all TMF-related variables, run **installEms** and select option **5** to configure EMS using a profile that was saved from the last session.

20 Depending on the hardware type, insert the CORE 32-bit (for K-Class servers) or the CORE 64-bit (for L-Class and N-Class servers) CD-ROM into the drive.

21 Execute the following command lines:
mount /dev/cdrom /cdrom
cd /cdrom
cp snmsInstall snmsUpgrade /tmp
cd /tmp
./snmsUpgrade

22 Remove the WaveStar CORE-OS CD-ROM and insert the WaveStar SNMS TOOLS CD-ROM into the drive.

23 Press **Control C** or **Delete** to exit from Installation script.

24 Bring down Informix IDS and save configuration files by executing the following command sequence:
Log in as informix: **su - informix**
onmode -ky
cd /tools/informix
cp .profile /tmp/informix.profile
cp .rhosts /tmp/informix.rhosts
cp etc/sqlhosts /tmp
cp etc/onconfig /tmp
cp online.log /tmp
exit

Result: The system returns you to the root login.

25 Clean up the Informix directory by executing the following command lines:
cd /tools/informix
rm -fr *
cd /tmp

26 At command prompt, execute the following command line:
snmsInstall -t -S

27 Press **Enter** at prompt `Please insert the SNMS Tools CD to the Driver, Hit <Return> when ready.`

28 Answer as indicated when the system prompts you to reinstall the Dynamic Server, Orbix and Perl:
`Dynamic Server has already been installed.`
`Do you want to Remove and Reinstall it (y/n)?` **`y`**

```
ITorbix has already been installed.
Do you want to Remove and Reinstall it (y/n)? n
Perl has already been installed.
Do you want to Remove and Reinstall it (y/n)? n
```

Result: The new version of Informix IDS has been loaded.

29 Remove the WaveStar SNMS Tools CD-ROM and insert the WaveStar SNMS Application CD-ROM.

30 At prompt, execute the following command line: **snmsInstall -c -S**

31 When prompted to remove and reinstall ColdStart, answer y:

```
SNMS ColdStart has already been loaded.
Do you want to Remove and Reinstall it (y/n)? y
```

32 At prompt, execute the following command line: **snmsInstall -a -S**

33 Press **Enter** at prompt `Starting ColdStart and configuring SNMS, hit <Return> when ready...`

34 When prompted to remove and reinstall the HP/OV ATOS patches and configure X.25/ACC, answer **n**:

```
HP/OV ATOS patches has already been installed.
Do you want to Remove and Reinstall it (y/n)? n
Do you want to configure X.25/ACC (y/n)? n
```

Result: ColdStart starts.

35 The Informix license stays the same as before. Make sure all information listed is correct; then, enter **s** to save and continue.

36 Answer as indicated when prompted to skip setUpInformix, setUpOrbix:

```
setUpInformix() has already performed once. Do
```

```
you want to skip it?  n
setUpOrbix() has already performed once. Do you
want to skip it?  y
```

Result: Informix IDS has been reinstalled.

---

37 At the EMS Installation and Configuration Screen, choose **0** to Exit.

---

38 Start Informix Engine by using the following command sequence:
Log in as informix: **su - informix**
cd /tools/informix
cp /tmp/informix.profile .profile
cp /tmp/informix.rhosts .rhosts
cp /tmp/online.log online.log
cp /tmp/sqlhosts etc/sqlhosts
cp /tmp/onconfig etc/onconfig
. ./.profile
oninit
onstat - (To make sure Informix is back to online.)
exit

Result: The Informix engine is up again and the system returns you to the root login.

---

39 Resume the installation of the WaveStar SNMS application by executing the following command lines:
cd /ems
installEms

---

40 Use *Procedure 3-11 Installing the WaveStar SNMS Application (installEms)* and *Procedure 3-12 Configuring the WaveStar SNMS Application (installEms)* to install the WaveStar SNMS Application.
Note: When the system prompts you to `rebuild the Informix engine with EMS new host Informix Database configuration`, answer **yes**.

41 If the TMF Add-On has not been ordered, go to the next step. If the TMF Add-On has been ordered, follow the steps in *Procedure 3-14 Installing the TMF Add-On*.

42 Log in as **ems**.

43 If the TMF interface has been previously used, make sure the value of the EMS_CLUSTER_ID is the same value that you have recorded in step 12.

Result: If the values match, go to step 45. If the values do not match, go to the next step.

44 If the values shown for the EMS_CLUSTER_ID in steps 12 and 43 do not match, access the *envfile_setup* file using the **vi** editor and add the old value of the EMS_CLUSTER_ID to make sure the value is correct:
vi /ems/etc/envfile_setup
Add **EMS_CLUSTER_ID=<R5.1 value>** right before the line showing: **export EMS_CLUSTER_ID**

45 Execute the following command line to clean up the PM cache directory:
rm -fr /ems/.pm/DbManager

46 Bring down the application and clean up the database using the following command lines:
dn
drdb
Answer **y** to `drop dsa`.

47 Restore the files from the backup tape labelled *SNMS R5.1 data tar file* using the following command lines:
su - root
cd /
**tar xvf /dev/rmt/0m **

**/ems/etc/SDSenv_rc **
**/ems/dsa **
**/ems/userdb **
/ems/HA/LOC/config

48 Execute the following command to logout: **exit**

Result: The system returns you to the ems ID.

49 Restore the database from tape by executing the following command:
ems_recover

50 Execute the following command line to convert the databases to the new schema:
SNMSDB5.1To6.0

Result: If you do not receive any error messages, the upgrade is completed. If you receive any error message in any step, execute **drdb**, restore the database from tapes (used in the previous step), fix the data or the procedure, and redo the conversion.

51 Execute the following command lines to begin to regenerate the HA configuration files and scripts on the various HA configurations:
su root (Do not use the dash.)
/ems/etc/installHA

52 Execute the following command to logout: **exit**

Result: The system returns you to the ems ID.

53 To complete the regeneration of the HA configuration files and scripts for local or geographic redundancy, the *HA_Topology.cfg* file must be changed as indicated. This file is accessed using the **vi** editor:
vi /ems/etc/HA_Topology.cfg
Change the *status* field to **active** where the *site* field is equal to *local_primary.*
Change the *status* field to **down** where the *site* field is equal to

local_secondary or *remote_primary.*
Save the changes made to the file.
Exit the **vi** editor.

54 Bring **sncPkg** down on the secondary/remote host using the following command lines:
On the secondary/remote host:
login: **root**
cmhaltpkg -v sncPkg

Result: The HA_Mgr process is being killed. Wait until the HA_Mgr process is killed before going to the next step.

55 Bring **sncPkg** up on the primary host, use the following command lines:
On the primary host:
Log in as **root**
cmrunnode -v <primary host>
cmviewcl

Result: If the package status displays the message `starting`, go to step 57. If the message `starting` does not appear, go to the next step.

56 If the message `starting` does not appear as a result of the **cmviewcl** command executed in the previous step, execute the following command line: **cmrunpkg sncPkg**

57 For local redundancy configurations, execute the following command lines on the secondary host:
Log in as **root**
cmhaltnode -v -f <secondary host>

58 Upgrade the secondary/remote host by executing steps 7, 12, and 14 through 46.

59 For local redundancy on the secondary host, login as **root**.
For geographic redundancy, go to step 66.

60 Validate that the cluster lock volume is not active by executing the following command line:
vgdisplay /dev/<volume group name>

Result: If the group is active, it must be deactivated. Proceed to the next step. If the group is not active, go to step 62.

61 To deactivate the cluster lock volume group, execute the following command lines:
vgchange -c n /dev/<volume group name>
vgchange -a n /dev/<volume group name>

62 Log off from the secondary host by executing the following command:
exit

63 For local redundancy configurations, on the primary host login as **ems.**

64 Execute the command: **su root** (Do not use the dash.)

65 Execute the following command line: **/ems/etc/installHA**

66 On the secondary/remote host, login as **ems**.

67 To refresh the Informix engine, execute the following command line:
er_refresh

68 Execute the command: **su root** (Do not use the dash.)

69 For geographic redundancy only, execute the following:
/ems/etc/installHA

70 Execute the following command line and provide the following responses:
/ems/etc/rejoin
`Remove ATS/Directory from standby?` **Yes**
`ER configuration?` **Yes**
`Database resynchronization?` **Yes**

END OF STEPS

Procedure 4-6 Upgrading a Standalone WaveStar SNMS R5.0.x to WaveStar SNMS R6.0.x

Purpose

The following procedure is used to upgrade a standalone WaveStar SNMS R5.0.x to WaveStar SNMS 6.0.x.

Before you begin

The procedures provided in the Task section are for standalone configurations.

This procedure requires you to backup file systems to tape. Have at least eight tapes handy and label each tape clearly.

You will need the following CD-ROMs:

- WaveStar SNMS Core OS CD-ROM
  - WaveStar SNMS Core OS for 32-bit HP K-Servers
  - WaveStar SNMS Core OS for 64-bit HP L-Servers and N-Servers
- WaveStar SNMS Tools CD-ROM
- WaveStar SNMS Application CD-ROM
- WaveStar SNMS Northbound TMF CORBA Interface CD-ROM (optional)

In general, it is important that all steps in the Task are performed in the order documented.

Related information

During this procedure, you will be required to use information supplied in *Chapter 3, Ignite-UX! Tasks*.

Task

Use these steps to upgrade a standalone WaveStar SNMS R5.0.x to WaveStar SNMS R6.0.x

1 Log in as **ems**.

2 Bring WaveStar SNMS down by executing **dn -x.**

3 Label a scratch tape *SNMS R5.0 data tar files*. Mount this scratch tape.

4 Back up flat files to tape using these command lines:
su - root
cd /
chmod -R +r /ems/dsa
chown -R ems:ems /ems/dsa
**tar cvf /dev/rmt/0m **
**/ems/etc/SDSenv_rc **
**ems/dsa **
/ems/userdb

Result: A scratch tape containing the *SNMS R5.0 data tar files* has been created. Remove the tape from the drive.

5 Execute the following command to logout: **exit**

Result: The system returns you to the ems ID.

6 If the TMF interface is not used, go to the next step.
If the TMF interface is used, use the following command to get the value of the EMS_CLUSTER_ID:
echo $EMS_CLUSTER_ID

Result: When the system displays the value of the EMS_CLUSTER_ID, record the value.

7 Back up the databases to tape. At the command prompt, execute the following command: **ems_backup**

Result: You will have at least six tapes containing backup data.

8 Label each tape clearly and record the date. You will need these tapes later.

9 Execute the following command line to determine how many CF database(s) are in use: **echo $NUMOFCFDBS**

10 If the number of CF database(s) is equal to 1, go to the next step. If the number of CF database(s) is not equal to 1, use the following command line to determine if the ems_backup is the correct version:
grep - i “multiple cf” /ems/tbin/ems_backup

Result: If the command output shows nothing, the *ems_backup* is not the correct version. Therefore, you must create one good CF database backup tape as shown here: (All CF database(s) will be backed up to one tape.)
Mount the CF database tape created in step 7.
Execute the following command lines:
</dev/rmt/0m
dbexport ${CF_DBNAME}1 -c -t /dev/rmt/0mn -b 512 -s 2000000 -ss
Execute the following command line only if $NUMOFCFDBS equals 2 and 3:
dbexport ${CF_DBNAME}2 -c -t /dev/rmt/0mn -b 512 -s 2000000 -ss
Execute the following command line only if $NUMOFCFDBS equals 3:
dbexport ${CF_DBNAME}3 -c -t /dev/rmt/0mn -b 512 -s 2000000 -ss
Remove the tape from the drive.

11 Copy the *installEms.out* file to a safe location because you will need this file later. Execute the following command lines:
cd /ems
cp installEms.out installEms.out.<MMDDYY>

12 Depending on the hardware type, insert the CORE 32-bit (for K-Class servers) or the CORE 64-bit (for L-Class and N-Class servers) CD-ROM into the drive.

13 Log out from **ems**.

14 Log in as **root**.

15 Access the */etc/snc.rc* file with the **vi** editor to comment out the following line with the **#** symbol as indicated in the following command line:
#su - ems -c “up -b -n”

16 Execute the following command lines:
mount /dev/cdrom /cdrom
cd /cdrom
cp snmsInstall snmsUpgrade /tmp
cd /tmp
./snmsUpgrade

Result: The system outputs error messages for the **mv** commands. The Hardware Enablement and Critical Patch Bundle are installed. The system reboots following the installation.

17 Log in as **root**.

18 Press **Enter** to install the HP-UX drivers.

Result: The HP-UX drivers are installed and system reboots.

19 Insert the Tools CD-ROM into the drive.

20 Press **Enter** to install the HP-UX Software General Release Patch Bundle.

Result: The HP-UX Software General Release Patch Bundle is installed and the system reboots.

21 Log in as **root**.

22 Press **Control C** or **Delete** to exit from the Guided Ignite process.

23 Bring Informix down and save the configuration files by executing the following command lines:
Log in as informix: **su - informix**
onmode -ky
cd /tools/informix
cp .profile /tmp/informix.profile
cp .rhosts /tmp/informix.rhosts
cp etc/sqlhosts /tmp
cp etc/onconfig /tmp
cp online.log /tmp
exit

Result: The system returns you to the root login.

24 Clean up the Informix directory by executing the following command lines:
cd /tools/informix
rm -fr *
cd /tmp

25 Execute **snmsInstall -t -S**

Result: The system prompts you through the installation process. When you are prompted to insert the Tools CD-ROM and press Return, you might receive a `psfMount Device busy error` and you might be reprompted to insert the Tools CD-ROM. If this scenario occurs, press **Return** a second time.

26 Answer as indicated when prompted to remove and reinstall the DynamicServer and ITorbix:

```
Dynamic Server has already been installed.
Do you want to Remove and Reinstall it (y/n)? y
ITorbix has already been installed.
Do you want to Remove and Reinstall it (y/n)? n
```

Result: The new version of Informix IDS and the Perl fileset are now loaded.

27 Insert the WaveStar SNMS Application CD-ROM into the drive.

28 Execute **snmsInstall -c -S**

Result: The system prompts you through the ColdStart utility.

29 Answer as indicated when the system prompts you to remove and reinstall ColdStart:

```
SNMS ColdStart has already been loaded.
Do you want to Remove and Reinstall it (y/n)? y
```

30 Execute **snmsInstall -a -S**

31 Press **Enter** at prompt:

```
Starting ColdStart and
configuring SNMS, hit <Return> when ready...
```

32 When prompted to remove and reinstall the HP/OV ATOS patches and configure X.25/ACC, answer **n**:

```
Installing HP/OV ATOS patches...
SNMS PF3000 has been loaded
Do you want to Remove and Reinstall it (y/n)? n
Do you want to configure X.25/ACC (y/n)? n
```

Result: The ColdStart Utility starts.

33 The Informix license stays the same as before. Make sure all information listed is correct; then, enter **s** to save and continue.

34 Answer as indicated when prompted to skip setUpInformix, setUpOrbix:

```
setUpInformix() has already performed once. Do
you want to skip it?  n
setUpOrbix() has already performed once. Do you
want to skip it?  y
```

Result: Informix IDS has been re-installed.

35 At the EMS Installation and Configuration Screen, choose **0** to Exit.

36 Start the Informix Engine by executing the following command lines:
Log in as informix: **su - informix**
cd /tools/informix
cp /tmp/informix.profile .profile
cp /tmp/informix.rhosts .rhosts
cp /tmp/online.log online.log
cp /tmp/sqlhosts etc/sqlhosts
cp /tmp/onconfig etc/onconfig
. ./.profile
oninit
onstat - (Execute to make sure Informix is back to online.)
exit

Result: The Informix engine is up again and the system returns you to the root login.

37 Resume the installation of the WaveStar SNMS Application by executing the following command lines:
cd /ems
installEms

38 Use *Procedure 3-11 Installing the WaveStar SNMS Application (installEms)* and *Procedure 3-12 Configuring the WaveStar SNMS Application (installEms)* to install the WaveStar SNMS Application. When the system prompts you to rebuild the Informix engine with `EMS new host Informix Database configuration?` answer **yes**.

39 If the TMF Add-On has not been ordered, go to the next step. If the TMF Add-On has been ordered, follow the steps in *Procedure 3-14 Installing the TMF Add-On*.

40 Log in as **ems**.

41 If the TMF interface has been previously used, make sure the value of the EMS_CLUSTER_ID is the same value that you have recorded in step 6.

Result: If the values match, go to step 43. If the values do not match, go to the next step.

42 If the values shown for the EMS_CLUSTER_ID in steps 6 and 41 do not match, access the *envfile_setup* file using the **vi** editor and add the old value of the EMS_CLUSTER_ID to make sure the value is correct:
vi /ems/etc/envfile_setup
Add **EMS_CLUSTER_ID=<R5.0 value>** right before the line showing: **export EMS_CLUSTER_ID**

43 Execute the following command line to clean up the PM cache directory:
rm -fr /ems/.pm/DbManager

44 Bring the application down and clean up the database using the following command lines:
dn
drdb
Answer **y** to `drop dsa`.

45 Restore the files from the backup tape labelled *SNMS R5.0 data tar files* using the following command lines:
su - root
cd /
**tar xvf /dev/rmt/0m **
**/ems/etc/SDSenv_rc **
**/ems/dsa **
/ems/userdb

46 Execute the following command to logout: **exit**

Result: The system returns you to the ems ID.

47 Restore the database from tapes by executing the following command: **ems_recover**.
Note: Use the correct CF database backup tape.

48 Execute the following command lines to convert the databases to the new schema:
SNMSDB5.0To5.1
SNMSDB5.1To6.0

Result: If you do not receive any error messages, the upgrade is completed. If you receive any error message in any step, execute **drdb**, restore the database from tapes (used in the previous step), fix the data or the procedure, and redo the conversion.

49 Bring WaveStar SNMS up by typing the following command: **up**

END OF STEPS

□

Procedure 4-7 Upgrading a Redundant WaveStar SNMS R5.0.x to WaveStar SNMS R6.0.x

Purpose

The following procedure is used to upgrade a redundant WaveStar SNMS R5.0.x to WaveStar SNMS 6.0.x

Before you begin

The procedures provided in the Task section are for redundant configurations.

During the upgrade of the WaveStar SNMS application, the application looses its connection to its NE for a period of time. To keep data loss to a minimum, perform the upgrade procedure at a quiet period when:

- NEs are not added or deleted.
- NEs do not have any equipment changes.

In addition, this procedure requires you to log on and log off the primary and the secondary/remote HP host servers.

WARNING

Make sure the primary host is running as active and the secondary/remote host is running as standby before you begin this procedure.

You will need the following CD-ROMs:

- WaveStar SNMS Core OS CD-ROM
  - WaveStar SNMS Core OS for 32-bit HP K-Servers
  - WaveStar SNMS Core OS for 64-bit HP L-Servers and N-Servers
- WaveStar SNMS Tools CD-ROM
- WaveStar SNMS Application CD-ROM
- WaveStar SNMS Northbound TMF CORBA Interface CD-ROM (optional)

This procedure requires you to backup file systems to tape. Have at least eight tapes handy and label each tape clearly.

Related information

During this procedure, you will be required to use information supplied in *Chapter 3, Ignite-UX! Tasks*.

Task

Use these steps to upgrade a redundant WaveStar SNMS R6.0.x from WaveStar SNMS R5.0.x.

1 On the primary host, login as **ems**.

2 Execute the following command line to kill the Orbix process ID:
kill –9 <orbixd process id>

Result: The HA_Mgr process is being killed. Wait until the HA_Mgr process is killed before going to the next step.

3 On the secondary/remote host, login as **ems.**

4 For geographic redundancy configurations, execute the following command line:
HA_MgrClient –m setOperMode –o ACTIVE

5 Verify that the secondary/remote host is running as active before going to next step by executing the following command line:
showtop

6 Upgrade the primary host by following steps 7 through 47.

7 Log in as **ems**.

8 Disable replication by executing the following command lines:
er_remove
er_refresh

Result: If you are on the primary host, you will receive the following message, which you should ignore: `couldn't find /tools/Informix/etc/buildsmi.snms`

9 Label a scratch tape *SNMS R5.0 data tar files*. Mount this scratch tape.

10 Back up flat files to tape using these command lines:
su - root
cd /
chmod -R +r /ems/dsa
chown -R ems:ems /ems/dsa
**tar cvf /dev/rmt/0m **
**/ems/etc/SDSenv_rc **
**/ems/dsa **
**/ems/userdb **
/ems/HA/LOC/config

Result: A scratch tape containing the *SNMS R5.0 data tar files* has been created. Remove the tape from the drive.

11 Execute the following command to logout: **exit**

Result: The system returns you to the ems ID.

12 If the TMF interface is not used, go to the next step.
If the TMF interface is used, use the following command to get the value of the EMS_CLUSTER_ID:
echo $EMS_CLUSTER_ID

Result: When the system displays the value of the EMS_CLUSTER_ID, record the value.

13 Back up the databases to tape. At the command prompt, execute the following command: **ems_backup**

Result: You will have at least six tapes containing backup data. Label each tape clearly and record the date.

14 Execute the following command line to determine how many CF database(s) are in use: **echo $NUMOFCFDBS**

15 If the number of CF database(s) is equal to 1, go to the next step. If the number of CF database(s) is not equal to 1, use the following command line to determine if the *ems_backup* is the correct version:
grep - i "multiple cf" /ems/tbin/ems_backup

Result: If the command output shows nothing, the *ems_backup* is not the correct version. Therefore, you must create one *good* CF database backup tape as shown here: (All CF database(s) will be backed up to one tape.)
Mount the CF database tape created in step 13.
Execute the following command lines:
</dev/rmt/0m
dbexport ${CF_DBNAME}1 -c -t /dev/rmt/0mn -b 512 -s 2000000 -ss
Execute the following command line only if $NUMOFCFDBS equals 2 and 3:
dbexport ${CF_DBNAME}2 -c -t /dev/rmt/0mn -b 512 -s 2000000 -ss
Execute the following command line only if $NUMOFCFDBS equals 3:
dbexport ${CF_DBNAME}3 -c -t /dev/rmt/0mn -b 512 -s 2000000 -ss
Remove the tape from the drive.

16 Copy the *installEms.out* file to a safe location because you will need this file later. Execute the following command lines:
cd /ems
cp installEms.out installEms.out.<MMDDYY>

17 Depending on the hardware type, insert the CORE 32-bit (for K-Class servers) or the CORE 64-bit (for L-Class and N-Class servers) CD-ROM into the drive.

18 Exit to logout of **ems**.

19 Log in as **root**.

20 Execute the following command lines:
mount /dev/cdrom /cdrom
cd /cdrom
cp snmsInstall snmsUpgrade /tmp
cd /tmp
./snmsUpgrade

Result: The system outputs error messages for the **mv** commands. The Hardware Enablement and Critical Patch Bundle are installed. The system reboots following the installation.

21 Log in as **root**.

22 Press **Enter** to install the HP-UX drivers.

Result: The HP-UX drivers are installed and the system reboots.

23 Insert the Tools CD-ROM into the drive.

24 Press **Enter** to install the HP-UX Software General Release Patch Bundle.

Result: The HP-UX Software General Release Patch Bundle is installed and the system reboots.

25 Log in as **root**.

26 Press **Control C** or **Delete** to exit from the Guided Ignite process.

27 Bring Informix down and save the configuration files by executing the following command lines:

Log in as informix: **su - informix**
onmode -ky
cd /tools/informix
cp .profile /tmp/informix.profile
cp .rhosts /tmp/informix.rhosts
cp etc/sqlhosts /tmp
cp etc/onconfig /tmp
cp online.log /tmp
exit

Result: The system returns you to the root login.

28 Clean up the Informix directory by executing the following command lines:
cd /tools/informix
rm -fr *
cd /tmp

29 Execute **snmsInstall -t -S**

Result: The system prompts you through the installation process. When you are prompted to insert the Tools CD-ROM and press Return, you might receive a `psfMount Device busy` error and you might be reprompted to insert the Tools CD-ROM. If this scenario occurs, press **Return** a second time.

30 Answer as indicated when prompted to remove and reinstall the DynamicServer and ITorbix:

```
Dynamic Server has already been installed.
Do you want to Remove and Reinstall it (y/n)? y
ITorbix has already been installed.
Do you want to Remove and Reinstall it (y/n)? n
```

Result: The new version of Informix IDS and the Perl fileset are now loaded.

31 Insert the WaveStar SNMS Application CD-ROM into the drive.

32 Execute **snmsInstall -c -S**

Result: The system prompts you through the ColdStart utility.

33 Answer as indicated when the system prompts you to remove and reinstall ColdStart:

```
SNMS ColdStart has already been loaded.
Do you want to Remove and Reinstall it (y/n)? y
```

34 Execute **snmsInstall -a -S**

35 Press **Enter** at prompt:

```
Starting ColdStart and
configuring SNMS, hit <Return> when ready...
```

36 When prompted to remove and reinstall the HP/OV ATOS patches and configure X.25/ACC, answer **n**:

```
Installing HP/OV ATOS patches...
SNMS PF3000 has been loaded
Do you want to Remove and Reinstall it (y/n)? n
Do you want to configure X.25/ACC (y/n)? n
```

Result: The ColdStart Utility starts.

37 The Informix license stays the same as before. Make sure all information listed is correct; then, enter **s** to save and continue.

38 Answer as indicated when prompted to skip setUpInformix, setUpOrbix:

```
setUpInformix() has already performed once. Do
you want to skip it?  n
setUpOrbix() has already performed once. Do you
want to skip it?  y
```

Result: Informix IDS has been re-installed.

39 At the EMS Installation and Configuration Screen, choose **0** to Exit.

40 Start the Informix Engine by executing the following command lines:
Log in as informix: **su - informix**
cd /tools/informix
cp /tmp/informix.profile .profile
cp /tmp/informix.rhosts .rhosts
cp /tmp/online.log online.log
cp /tmp/sqlhosts etc/sqlhosts
cp /tmp/onconfig etc/onconfig
. ./.profile
oninit
onstat - (Execute to make sure Informix is back online.)
exit

Result: The Informix engine is up again and the system returns you to the root login.

41 Resume the installation of the WaveStar SNMS Application by executing the following command lines:
cd /ems
installEms

42 Use *Procedure 3-11 Installing the WaveStar SNMS Application (installEms)* and *Procedure 3-12 Configuring the WaveStar SNMS Application (installEms)* to install the WaveStar SNMS Application. When the system prompts you to `rebuild the Informix engine with EMS new host Informix Database configuration?,` answer **yes**.

43 If the TMF Add-On has not been ordered, go to the next step. If the TMF Add-On has been ordered, follow the steps in *Procedure 3-14 Installing the TMF Add-On*.

44 Log in as **ems**.

45 If the TMF interface has been previously used, make sure the value of the EMS_CLUSTER_ID is the same value that you have recorded in step 12.

Result: If the values match, go to step 47. If the values do not match, go to the next step.

46 If the values shown for the EMS_CLUSTER_ID in steps 12 and 45 do not match, access the *envfile_setup* file using the **vi** editor and add the old value of the EMS_CLUSTER_ID to make sure the value is correct:
vi /ems/etc/envfile_setup
Add **EMS_CLUSTER_ID=<R5.0 value>** right before the line showing: **export EMS_CLUSTER_ID**

47 Execute the following command line to clean up the PM cache directory:
rm -fr /ems/.pm/DbManager

48 Bring down the application and clean up the database using the following command lines:
dn
drdb
Answer **y** to `drop dsa`.

49 Restore the files from the backup tape labelled *SNMS R5.0 data tar files*, which were generated in step 10, using the following command lines:
su - root

cd /
**tar xvf /dev/rmt/0m **
**/ems/etc/SDSenv_rc **
**/ems/dsa **
**/ems/userdb **
/ems/HA/LOC/config

50 Execute the following command to logout: **exit**

Result: The system returns you to the ems ID.

51 Restore the database from tapes by executing the following command:
ems_recover
Note: Use the correct CF database backup tape.

52 Execute the following command lines to convert the databases to the new schema:
SNMSDB5.0To5.1
SNMSDB5.1To6.0

Result: If you do not receive any error messages, the upgrade is completed. If you receive any error message in any step, execute **drdb**, restore the database from tapes (used in the previous step), fix the data or the procedure, and redo the conversion.

53 Execute the following command lines to regenerate the HA configuration files and scripts on the various HA configurations:
su root (Do not use the dash.)
/ems/etc/installHA

54 Execute the following command to logout: **exit**

Result: The system returns you to the ems ID.

55 To complete the regeneration of the HA configuration files and scripts for local or geographic redundancy, the *HA_Topology.cfg* file must be changed as indicated. This file is accessed using the **vi** editor:
vi /ems/etc/HA_Topology.cfg
Change the *status* field to **active** where the *site* field is equal to *local_primary.*
Change the status field to **down** where the *site* field is equal to *local_secondary* or *remote_primary.*
Save the changes made to the file.
Exit the **vi** editor.

56 Bring **sncPkg** down on the secondary/remote host using the following command lines:
On the secondary/remote host:
login: **root**
cmhaltpkg -v sncPkg

Result: The HA_Mgr process is being killed. Wait until the HA_Mgr process is killed before going to the next step.

57 Bring **sncPkg** up on the primary host, use the following command lines:
On the primary host:
Log in as **root**
cmrunnode -v <primary host>
cmviewcl

Result: If the package status displays the message `starting`, go to step 59. If the message `starting` does not appear, go to the next step.

58 If the message `starting` does not appear as a result of the **cmviewcl** command executed in the previous step, execute the following command line: **cmrunpkg sncPkg**

59 For local redundancy configurations, execute the following command lines on the secondary host:
Log in as **root**
cmhaltnode -v -f <secondary host>

60 Upgrade the secondary/remote host by executing steps 7, 12, and 16 through 48.

61 For local redundancy configurations on the secondary host, login as **root**.
For geographic redundancy configurations, go to step 68.

62 Validate that the cluster lock volume is not active by executing the following command line:
vgdisplay /dev/<volume group name>

Result: If the group is active, it must be deactivated. Proceed to the next step. If the group is not active, go to step 64.

63 To deactivate the cluster lock volume group, execute the following command lines:
vgchange -c n /dev/<volume group name>
vgchange -a n /dev/<volume group name>

64 Log off from the secondary host by executing the following command:
exit

65 For local redundancy configurations, on the primary host login as **ems.**

66 Execute the command: **su root** (Do not use the dash.)

67 Execute the following command line: **/ems/etc/installHA**

68 On the secondary/remote host, login as **ems**.

69 To refresh the Informix engine, execute the following command line:
er_refresh

70 Execute the command: **su root** (Do not use the dash.)

71 For geographic redundancy only, execute the following:
/ems/etc/installHA

72 Execute the following command line and provide the following responses:

/ems/etc/rejoin

`Remove ATS/Directory from standby?` **Yes**

`ER configuration?` **Yes**

`Database resynchronization?` **Yes**

END OF STEPS

Procedure 4-8 Upgrading a Standalone WaveStar SNMS R4.2.x to WaveStar SNMS R6.0.x

Purpose

The following procedure is used to upgrade a Standalone WaveStar SNMS R4.2.x to WaveStar SNMS 6.0.x.

Before you begin

The procedures provided in the Task section are for standalone configurations.

This procedure requires you to backup file systems to tape. Have at least eight tapes handy and label each tape clearly.

You will need the following CD-ROMs:

- WaveStar SNMS Core OS CD-ROM
  - WaveStar SNMS Core OS for 32-bit HP K-Servers
  - WaveStar SNMS Core OS for 64-bit HP L-Servers and N-Servers
- HP OpenView DM CD-ROM, which is optional and user supplied
- WaveStar SNMS High Availability (HA) CD-ROM
- WaveStar SNMS Tools CD-ROM
- WaveStar SNMS Application CD-ROM
- WaveStar SNMS Northbound TMF CORBA Interface CD-ROM (optional)
- WaveStar SNMS GUI Client CD-ROMs for Windows NT and HP-UX

Have the Informix Dynamic Server serial number and key information handy because you will have to enter this information.

In general, it is important that all steps in the Task are performed in the order documented.

When upgrading from WaveStar R4.2.x to WaveStar R6.0.x, a new del_alarmhist script must be run prior to running the SNMSDB4.2To5.0 script during the database retrofit. The del_alarmhist script helps to reduce the database conversion time when running the SNMSDB4.2To5.0 script by purging historical alarms in the Im_nealarm table.

The time required to run both scripts for the database conversion depends on the size of the Im_nealarm table, the table's contents, and other conditions. In a laboratory environment, it takes approximately 13 hours to convert 55,000 records, approximately 70 minutes to convert 16,000 records, and approximately 6 minutes to convert 5000 records.

Related information

During this procedure, you will be required to use information supplied in *Chapter 3, Ignite-UX! Tasks*.

Task

Use these steps to upgrade a standalone WaveStar SNMS R4.2.x to WaveStar SNMS R6.0.x.

1 Log in as **ems**.

2 Bring WaveStar SNMS down by executing **dn -x.**

3 Label a scratch tape *SNMS R4.2 data tar files*. Mount this scratch tape.

4 Back up flat files to tape using these command lines:

```
su - root
cd /
chmod -R +r /ems/dsa
chown -R ems:ems /ems/dsa
tar cvf /dev/rmt/0m \
/ems/installEms.out \
/ems/etc/SDSenv_rc \
/ems/dsa \
/ems/userdb
```

Result: A scratch tape containing the *SNMS R4.2 data tar files* has been created. Remove the tape from the drive.

5 Execute the following command to logout: **exit**

Result: The system returns you to the ems ID.

6 If the TMF interface is not used, go to the next step.
If the TMF interface is used, use the following command to get the value of the EMS_CLUSTER_ID:
echo $EMS_CLUSTER_ID

Result: When the system displays the value of the EMS_CLUSTER_ID, record the value.

7 At the command prompt, execute the following command:
ems_backup

Result: You will have at least six tapes containing backup data. Label each tape clearly and record the date.

8 Execute the following command to logout: **exit**

9 Depending on the hardware type, insert the CORE 32-bit (for K-Class servers) or the CORE 64-bit (for L-Class and N-Class servers) CD-ROM into the drive.

10 Log in as **root**.

11 Execute the following command lines:
mount /dev/cdrom /cdrom
cd /cdrom
cp snmsInstall snmsUpgrade /tmp
cd /tmp

12 Mount a scratch tape and label it *snmsUpgrade backup*.

13 Execute the following command line:
./snmsUpgrade

Result: A scratch backup tape has been created. Remove the tape from the drive.

14 Determine the hardware path to the CD-ROM drive by executing:
ioscan -fkC disk | egrep -i “cd|dvd”

15 Execute the following command line:
setboot -p <H/W path to CD-ROM>
For example: **setboot -p 10/12/5.2.0**

16 Execute the following command to reboot the machine: **reboot**

Result: The initial configuration screen associated with the WaveStar SNMS F6.0.x Ignite! process appears.

17 Proceed with the Ignite-UX! procedures provided in *Chapter 3, Ignite-UX! Tasks*.

Result: The system reboots twice after HP-UX 11.0 has been installed.

18 Log in as **root**.

Result: The system prompts you to install HP OpenView.

19 Press **Control C** or **Delete** to exit from the Guided Ignite process.

Result: The Guided Ignite process is terminated and the system brings you to the **#** prompt.

20 Execute the following command lines:
mount /dev/cdrom /cdrom
cd /cdrom
cp snmsInstall snmsUpgrade /tmp
cd /tmp

21 Mount the scratch *snmsUpgrade backup* tape that was generated in step 13.

22 Execute the following command line:
. /snmsUpgrade -r

23 Press **Control C** or **Delete** when you are prompted to install HP OpenView.

24 Execute the following command line:
pfsUmount

25 Remove the CORE-OS CD-ROM and mount the HP OpenView (optional) or WaveStar SNMS HA CD-ROM.

26 Execute the following command to logout: **exit**

27 Log in as **root**.

Result: The system prompts you to install HP OpenView.

28 Resume the Guided Ignite process:
First, install HP OpenView according to the directions supplied in *Chapter 3, Ignite-UX! Tasks*.
Continue running the Guided Ignite procedure until you receive the message `Start coldstart and Configuring SNMS (installEms), hit <Return> when ready`.

29 Press **Control C** or **Delete** to exit the Guided Ignite process.

30 Execute the following command lines to run the ColdStart utility:
cd /tmp
./coldStart

WARNING

For WaveStar SNMS R6.0, the Informix version is different. You will have to enter the Informix Dynamic Server serial number and key information for the HP-UX 11.0 operating system.

31 Execute the following command to resume the remainder of the installation until the WaveStar SNMS application is fully installed and configured:
snmsInstall -a
When the system prompts you to rebuild the Informix engine with `EMS new host Informix Database configuration?` answer **yes**.

32 If the TMF Add-On has not been ordered, go to the next step. If the TMF Add-On has been ordered, follow the steps in *Procedure 3-14 Installing the TMF Add-On*.

33 Log in as **ems**.

34 If the TMF interface has been previously used, make sure the value of the EMS_CLUSTER_ID is the same value that you have recorded in step 6.

Result: If the values match, go to step 36. If the values do not match, go to the next step.

35 If the values shown for the EMS_CLUSTER_ID in steps 6 and 34 do not match, access the *envfile_setup* file using the **vi** editor and add the old value of the EMS_CLUSTER_ID to make sure the value is correct:
vi /ems/etc/envfile_setup

Add **EMS_CLUSTER_ID=<R4.2 value>** right before the line showing: **export EMS_CLUSTER_ID**

36 Bring down the application and the clean up the database using the following command lines:
dn
drdb
Answer **y** to `drop dsa`.

37 Restore the files from the backup tape labelled *SNMS R4.2 data tar files* using the following command lines:
su - root
cd /
**tar xvf /dev/rmt/0m **
**/ems/etc/SDSenv_rc **
**/ems/dsa **
/ems/userdb

38 Execute the following command to logout: **exit**

Result: The system returns you to the ems ID.

39 Restore the database from tapes by executing the following command:
ems_recover

40 Execute the following command lines to convert the databases to the new schema:
del_alarmhist
SNMSDB4.2To5.0
SNMSDB5.0To5.1
SNMSDB5.1To6.0

Result: If you do not receive any error messages, the upgrade is completed. If you receive any error message in any step, execute **drdb**, restore the database from tapes (used in the previous step), fix the data or the procedure, and redo the conversion.

41 Bring WaveStar SNMS up by typing the following command: **up**

42 If the installation had been using Lucent's Dynamic Network Analyzer (DNA) before the upgrade, contact Lucent's DNA research and development organization to perform the corresponding upgrade on the OpenLink software. In the meantime, DNA currently looses its connection to the WaveStar SNMS database.

END OF STEPS

Procedure 4-9 Upgrading a Redundant WaveStar SNMS R4.2.x to WaveStar SNMS R6.0.x

Purpose

The following procedure is used to upgrade a redundant WaveStar SNMS R4.2.x to WaveStar SNMS 6.0.x.

Before you begin

The procedures provided in the Task section are for redundant configurations.

During the upgrade of the WaveStar SNMS application, the application looses its connection to its NE for a period of time. To keep data loss to a minimum, perform the upgrade procedure at a quiet period when:

- NEs are not added or deleted.
- NEs do not have any equipment changes.

In addition, this procedure requires you to log on and log off the primary and the secondary/remote HP host servers.

WARNING

Make sure the primary host is running as active and the secondary/remote host is running as standby before you begin this procedure.

This procedure requires you to backup file systems to tape. Have at least eight tapes handy and label each tape clearly.

You will need the following CD-ROMs:

- WaveStar SNMS Core OS CD-ROM
  - WaveStar SNMS Core OS for 32-bit HP K-Servers
  - WaveStar SNMS Core OS for 64-bit HP L-Servers and N-Servers
- HP OpenView DM CD-ROM, which is optional and user supplied
- WaveStar SNMS High Availability (HA) CD-ROM
- WaveStar SNMS Tools CD-ROM
- WaveStar SNMS Application CD-ROM
- WaveStar SNMS Northbound TMF CORBA Interface CD-ROM (optional)

- WaveStar SNMS GUI Client CD-ROMs for Windows NT and HP-UX

Have the Informix Dynamic Server serial number and key information handy because you will have to enter this information.

When upgrading from WaveStar R4.2.x to WaveStar R6.0.x, a new del_alarmhist script must be run prior to running the SNMSDB4.2To5.0 script during the database retrofit. The del_alarmhist script helps to reduce the database conversion time when running the SNMSDB4.2To5.0 script by purging historical alarms in the Im_nealarm table.

The time required to run both scripts for the database conversion depends on the size of the Im_nealarm table, the table's contents, and other conditions. In a laboratory environment, it takes approximately 13 hours to convert 55,000 records, approximately 70 minutes to convert 16,000 records, and approximately 6 minutes to convert 5000 records.

Related information

During this procedure, you will be required to use information supplied in *Chapter 3, Ignite-UX! Tasks* and *Chapter 9, Redundancy Installation and Operations*.

Task

Use these steps to upgrade a redundant WaveStar SNMS R6.0.x from WaveStar SNMS R4.2.x.

1 On the primary host, login as **ems**.

2 Execute the following command line to kill the Orbix process ID:
kill –9 <orbixd process id>

Result: The HA_Mgr process is being killed. Once the HA_Mgr process has been killed, go to the next step.

3 On the secondary/remote host, login as **ems.**

4 For geographic redundancy configurations, execute the following command line:
HA_MgrClient –m setOperMode –o ACTIVE

5 Verify that the secondary/remote host is running as active before going to next step by executing the following command line:
showtop

6 Upgrade the primary host by following steps 7 through 50.

7 Log in as **ems**.

8 Disable replication by executing the following command lines:
er_remove
er_refresh

Result: If you are on the primary host, you will receive the following message, which you should ignore: `couldn't find /tools/Informix/etc/buildsmi.snms`

9 Label a scratch tape *SNMS R4.2 data tar files*. Mount this scratch tape.

10 Back up flat files to tape using these command lines:
su - root
cd /
chmod -R +r /ems/dsa
chown -R ems:ems /ems/dsa
**tar cvf /dev/rmt/0m **
**/ems/installEms.out **
**/ems/etc/SDSenv_rc **
**/ems/dsa **
**/ems/userdb **
/ems/HA/LOC/config

Result: A scratch tape containing the *SNMS R4.2 data tar files* has been created. Remove the tape from the drive.

11 Execute the following command to logout from root: **exit**

Result: The system returns you to the ems ID.

12 If the TMF interface is not used, go to the next step.
If the TMF interface is used, use the following command to get the value of the EMS_CLUSTER_ID:
echo $EMS_CLUSTER_ID

Result: When the system displays the value of the EMS_CLUSTER_ID, record the value.

13 Back up the databases to tape. At the command prompt, execute the following command: **ems_backup**

Result: You will have at least six tapes containing backup data. Label each tape clearly and mark the date on each tape

14 Depending on the hardware type, insert the CORE 32-bit (for K-Class servers) or the CORE 64-bit (for L-Class and N-Class servers) CD-ROM into the drive.

15 Log in as **root**.

16 Execute the following command lines
mount /dev/cdrom /cdrom
cd /cdrom
cp snmsInstall snmsUpgrade /tmp
cd /tmp

17 Mount a scratch tape and label it *snmsUpgrade backup.*

18 Execute the following command line:
./snmsUpgrade

Result: A scratch backup tape has been created. Remove the tape from the drive.

19 Determine the hardware path to the CD-ROM drive by executing:
ioscan -fkC disk | egrep -i "cd|dvd"

20 Execute the following command line:
setboot -p <H/W path to CD-ROM>
For example: **setboot -p 10/12/5.2.0**

21 Execute the following command to reboot the machine: **reboot**

Result: Following the reboot, the initial configuration screen associated with the WaveStar SNMS R6.0.x Ignite! process appears.

22 Proceed with the SNMS R6.0.x Ignite procedures provided in *Chapter 3, Ignite-UX! Tasks*.

Result: The system reboots twice after HP-UX 11.0 is installed.

23 Log in as **root**.

Result: The system prompts you to install HP OpenView.

24 Press **Control C** or **Delete** to exit the Guided Ignite process.

Result: The Guided Ignite process is terminated and the system brings you to the **#** prompt.

25 Execute the following command lines:
mount /dev/cdrom /cdrom
cd /cdrom
cp snmsInstall snmsUpgrade /tmp
cd /tmp

26 Mount the *snmsUpgrade backup* tape that was generated in step 18.

27 Execute the following command line:
. /snmsUpgrade -r

28 Press **Control C** or **Delete** when prompted to install HP OpenView.

29 Execute the following command line:
pfsUmount

30 Remove the CORE-OS CD-ROM and mount the HP OpenView (Optional) or WaveStar SNMS HA CD-ROM.

31 Log out from the system by executing the following command: **exit**

32 Log in as **root**.

Result: The system prompts you to install HP OpenView.

33 Resume the Guided Ignite process:
First, install HP OpenView according to the directions supplied in *Chapter 3, Ignite-UX! Tasks*.
Continue Running the Guided Ignite procedure until you receive the message `Start coldstart and Configuring SNMS (installEms), hit <Return> when ready`.

34 Press **Control C** or **Delete** to exit the Guided Ignite process.

35 Execute the following command lines to execute the ColdStart utility:
cd /tmp
./coldStart

WARNING

For WaveStar SNMS R6.0, the Informix version is different. You will have to enter the Informix Dynamic Server serial number and key information for the HP-UX 11.0 operating system.

36 Execute the following command to resume the remainder of the installation until the WaveStar SNMS application is fully installed and configured:
snmsInstall -a
When the system prompts you to rebuild the Informix engine with `EMS new host Informix Database configuration?` answer **yes**.

37 If the TMF Add-On has not been ordered, go to the next step. If the TMF Add-On has been ordered, follow the steps in *Procedure 3-14 Installing the TMF Add-On*.

38 Log in as **ems**.

39 If the TMF interface has been previously used, make sure the value of the EMS_CLUSTER_ID is the same value that you have recorded in step 12.

Result: If the values match, go to step 41. If the values do not match, go to the next step.

40 If the values shown for the EMS_CLUSTER_ID in steps 12 and 39 do not match, access the *envfile_setup* file using the **vi** editor and add the old value of the EMS_CLUSTER_ID to make sure the value is correct:
vi /ems/etc/envfile_setup
Add **EMS_CLUSTER_ID=<R4.2 value>** right before the line showing: **export EMS_CLUSTER_ID**

41 Bring down the application and clean up the database using the following command lines:
dn
drdb
Answer **y** to `drop dsa`.

42 Restore the files from the backup tape labelled *SNMS R4.2 data tar files* using the following command lines:
su - root
**tar xvf /dev/rmt/0m **
**/ems/etc/SDSenv_rc **
**/ems/dsa **
**/ems/userdb **
/ems/HA/LOC/config

43 Execute the following command to logout: **exit.**

44 Mount the tape that is labelled *SNMS flat files.*

45 Restore the database from tapes by executing the following command:
ems_recover

46 Execute the following command lines to convert the databases to the new schema:
del_alarmhist
SNMSDB4.2To5.0
SNMSDB5.0To5.1
SNMSDB5.1To6.0

Result: If you do not receive any error messages, the upgrade is completed. If you receive any error message in any step, execute **drdb**, restore the database from tapes (used in the previous step), fix the data or the procedure, and redo the conversion.

47 For local redundancy while installing the primary host, execute the following command lines on the secondary host:
Log in on the secondary host as: **root**
vgexport /dev/<cluster lock volume group>
exit
For example: **vgexport /dev/vg_clstr**

48 To regenerate the HA configuration files and scripts for a ***local redundancy configuration on the primary host,*** execute the following command lines and complete the following procedures from *Chapter 9, Redundancy Installation and Operations*:
su root (Do not use the dash.)
Procedure 9-7 Doing Post Installation Tasks
Procedure 9-4 Setting up NTP with the Real Time Source Server
-OR- *Procedure 9-5 Setting up NTP between Redundancy Servers*
Procedure 9-8 Creating a Cluster Lock Volume Group
Procedure 9-9 Exporting the Cluster Lock Volume Group—execute steps 1 through 3 only
/ems/etc/installHA 2> /tmp/installHA.out
rcp <secondary host>:/etc/cmcluster/cmclconfig /etc/cmcluster

49 To regenerate the HA configuration files and scripts for ***geographic redundancy on the primary host,*** execute the following command lines and complete the following procedures from *Chapter 9, Redundancy Installation and Operations*:
su root (Do not use the dash.)
Procedure 9-7 Doing Post Installation Tasks
Procedure 9-4 Setting up NTP with the Real Time Source Server
-OR- *Procedure 9-5 Setting up NTP between Redundancy Servers*
/ems/etc/installHA 2> /tmp/installHA.out

50 To complete the regeneration of the HA configuration files and scripts, the *HA_Topology.cfg* file must be changed as indicated on the primary host. This file is accessed using the **vi** editor:

vi /ems/etc/HA_Topology.cfg
Change the *status* field to **active** where the *site* field is equal to *local_primary.*
Change the *status* field to **down** where the *site* field is equal to *local_secondary* or *remote_primary.*
Save the changes made to the file.
Exit the **vi** editor.

51 Bring **sncPkg** down on the secondary/remote host using the following command lines:
On the secondary/remote host:
login: **root**
cmhaltpkg -v sncPkg

Result: The HA_Mgr process is being killed. Once the HA_Mgr process has been killed, go to the next step.

52 Bring **sncPkg** up on the primary host, use the following command lines:
On the primary host:
Log in as **root**
cmrunnode -v <primary host>
cmviewcl

Result: If the package status displays the message `starting`, go to step 54. If the message `starting` does not appear, go to the next step.

53 If the message `starting` does not appear as a result of the **cmviewcl** command executed in the previous step, execute the following command line: **cmrunpkg sncPkg**

54 For local redundancy configurations, execute the following command lines on the secondary host:
Log in as **root**
cmhaltnode -v -f <secondary host>

55 This step completes the installation/upgrade of the local/geographic primary host.

56 Upgrade the secondary/remote host by executing steps 7, 12, 14 through 41.

57 To regenerate the HA configuration files and scripts for ***local redundancy configuration on the secondary host,*** execute the following command lines and complete the following procedures from *Chapter 9, Redundancy Installation and Operations*:
su root (Do not use the dash.)
Procedure 9-7 Doing Post Installation Tasks
Procedure 9-4 Setting up NTP with the Real Time Source Server
-OR- *Procedure 9-5 Setting up NTP between Redundancy Servers*
Procedure 9-9 Exporting the Cluster Lock Volume Group—execute steps 4 through 7 only.

58 To regenerate the HA configuration files and scripts for ***geographic redundancy on the remote host,*** execute the following command line and complete the following procedures from *Chapter 9, Redundancy Installation and Operations*:
su root (Do not use the dash.)
Procedure 9-7 Doing Post Installation Tasks
Procedure 9-4 Setting up NTP with the Real Time Source Server
-OR- *Procedure 9-5 Setting up NTP between Redundancy Servers*

59 This step completes the installation/upgrade procedure for the secondary/remote host. Proceed to the next step to configure the HA redundancy environment.

60 For local redundancy configurations on the primary host, login as **ems**. For geographic redundancy configurations, go to step 63.

61 Execute the command: **su root** (Do not use the dash.)

62 Execute the following command lines:
/ems/etc/installHA

63 On the secondary/remote host, login as **ems**.

64 Execute the command: **su root** (Do not use the dash.)

65 For geographic redundancy only, execute the following:
/ems/etc/installHA

66 Execute the following command line and provide the following responses:
/ems/etc/rejoin
`Remove ATS/Directory from standby?` **Yes**
`ER configuration?` **Yes**
`Database resynchronization?` **Yes**

67 If the installation had been using Lucent's Dynamic Network Analyzer (DNA) before the upgrade, contact Lucent's DNA research and development organization to perform the corresponding upgrade on the OpenLink software. In the meantime, DNA currently looses its connection to the WaveStar SNMS database.

END OF STEPS

□

Procedure 4-10 Upgrading a Standalone WaveStar SNMS R4.0.x and Prior to WaveStar SNMS R6.0.x

Purpose

The following procedure is used to upgrade the WaveStar SNMS database to R6.0.x from SNMS R4.0.x and prior releases.

Before you begin

The procedures provided in the Task section are for standalone configurations and for different releases of WaveStar SNMS; the differences are easily noted. Use the steps and or command iterations for your particular release.

This procedure relies on backup tapes. Should errors occur, have the appropriate backup tapes handy.

When upgrading from WaveStar R4.0.x and prior to WaveStar R6.0.x, a new del_alarmhist script must be run prior to running the SNMSDB4.2To5.0 script during the database retrofit. The del_alarmhist script helps to reduce the database conversion time when running the SNMSDB4.2To5.0 script by purging historical alarms in the Im_nealarm table.

The time required to run both scripts for the database conversion depends on the size of the Im_nealarm table, the table's contents, and other conditions. In a laboratory environment, it takes approximately 13 hours to convert 55,000 records, approximately 70 minutes to convert 16,000 records, and approximately 6 minutes to convert 5000 records.

Related information

In step 12, you are required to reload the system from ground up. The procedures for this task are in *Chapter 3, Ignite-UX! Tasks*.

Task

Use these steps to upgrade a standalone WaveStar SNMS R6.0.x from WaveStar SNMS R4.0.x and prior releases.

1 Log in as **ems**.

2 Bring WaveStar SNMS down by executing the following command:
dn

3 Label a scratch tape *SNMS R4.0 data tar files*. Mount this scratch tape.

4 Back up flat files to tape using thsese command lines:
su - root
cd /ems (**cd /snc** for WaveStar SNMS 3.1 and prior)
**tar cvf /dev/rmt/0m **
**./etc/SDSenv_rc **
**./dsa **
./installEms.out (use **./installSnc.out** for WaveStar SNMS 3.1 and prior)

Result: A scratch tape containing the *SNMS R4.0 data tar files* has been created. Remove the tape from the drive.

5 Execute the following command to logout: **exit.**

6 Log in as **ems**.

7 If the TMF interface is not used, go to step 8.
If the TMF interface is used, use the following command to get the value of the EMS_CLUSTER_ID:
echo $EMS_CLUSTER_ID

Result: When the system displays the value of the EMS_CLUSTER_ID, record the value.

8 For WaveStar SNMS 2.1 and prior, back up the databases to tape as shown in the command iterations that follow. If the old release is not R2.1 and prior, go to the appropriate step that follows.
dbexport -c -t /dev/rmt/0m -b 512 -s 2000000 $SNC_DBNAME -ss
dbexport -c -t /dev/rmt/0m -b 512 -s 2000000 $PM_DBNAME -ss
dbexport -c -t /dev/rmt/0m -b 512 -s 2000000 $NQ_DBNAME -ss
Note: Each command iteration requires at least one tape. Mark each tape clearly.

9 For WaveStar SNMS 3.0, back up the databases to tape as shown in the command iterations that follow. If the old release is not R3.0, go to the appropriate step that follows.
dbexport -c -t /dev/rmt/0m -b 512 -s 2000000 $SNC_DBNAME -ss
dbexport -c -t /dev/rmt/0m -b 512 -s 2000000 $PM_DBNAME -ss
Note: Each command iteration requires at least one tape. Mark each tape clearly.

10 For WaveStar SNMS 3.1, back up the databases to tape as shown in the command iterations that follow. If the old release is not R3.1, go to the appropriate step that follows.
dbexport -c -t /dev/rmt/0m -b 512 -s 2000000 $SNC_DBNAME -ss
dbexport -c -t /dev/rmt/0m -b 512 -s 2000000 $PM_DBNAME -ss
dbexport -c -t /dev/rmt/0m -b 512 -s 2000000 $NCI_DBNAME -ss
Note: Each command iteration requires at least one tape. Mark each tape clearly.

11 For WaveStar SNMS 4.0, back up the databases to tape as shown in the command iterations that follow.
dbexport -c -t /dev/rmt/0m -b 512 -s 2000000 $EMS_DBNAME -ss
dbexport -c -t /dev/rmt/0m -b 512 -s 2000000 $PM_DBNAME -ss
dbexport -c -t /dev/rmt/0m -b 512 -s 2000000 $NCI_DBNAME -ss
Note: Each command iteration requires at least one tape. Mark each tape clearly.

12 Reload the system from the ground up using the procedures provided in *Chapter 3, Ignite-UX! Tasks*.
When the system prompts you to rebuild the Informix engine with `EMS new host Informix Database configuration?` answer **yes**.

13 If the TMF Add-On has not been ordered, go to the next step. If the TMF Add-On has been ordered, follow the steps in *Procedure 3-14 Installing the TMF Add-On*.

14 Execute the following command lines to bring down the WaveStar SNMS application and to clean up the WaveStar SNMS database:
Log in as **ems**.
dn
drdb
Answer **y** to `drop dsa`.

15 Restore the flat files from the *SNMS R4.0 data tar files* tape that was created in step 4 using the following command lines:
su - root
cd /ems
**tar xvf /dev/rmt/0m **
**./etc/SDSenv_rc **
./dsa

16 Execute the following command to logout: **exit**

Result: The system returns you to the ems ID.

17 If the old release is WaveStar SNMS 2.1 or prior, restore the database from tape by using the following command syntax. If the old release is not R2.1 or prior, go to the appropriate step that follows.
dbimport snc_db -d snc_dbs -c -t /dev/rmt/0m -b 512 -s 2000000
dbimport pm_db -d pm1_dbs -c -t /dev/rmt/0m -b 512 -s 2000000
db_logging -U snc_db
db_logging -U pm_db
If the TMF Add-On has been installed, execute the following command lines:
dbimport q3nb_db -d nb_dbs -c -t /dev/rmt/0m -b 512 -s 2000000
db_logging -U q3nb_db
If the TMF Add-On has not been installed, execute the following command lines:
dbimport q3nb_db -d fm2_dbs -c -t /dev/rmt/0m -b 512 -s 2000000
db_logging -U q3nb_db

18 If the old release is WaveStar SNMS 3.0, restore the database from tape by using the following command syntax. If the old release is not R3.0,

go to the appropriate step that follows.
dbimport snc_db -d snc_dbs -c -t /dev/rmt/0m -b 512 -s 2000000
dbimport pm_db -d pm1_dbs -c -t /dev/rmt/0m -b 512 -s 2000000
db_logging -U snc_db
db_logging -U pm_db

19 If the old release is WaveStar SNMS 3.1, restore the database from tape by using the following command syntax. If the old release is not R3.1, go to the appropriate step that follows.
dbimport snc_db -d snc_dbs -c -t /dev/rmt/0m -b 512 -s 2000000
dbimport pm_db -d pm1_dbs -c -t /dev/rmt/0m -b 512 -s 2000000
db_logging -U snc_db
db_logging -U pm_db
Execute the following command lines only if the TMF Add-On has been installed:
dbimport tmf_db -d nb_dbs -c -t /dev/rmt/0m -b 512 -s 2000000
db_logging -U tmf_db

20 If the old release is WaveStar SNMS 4.0, restore the database from tape by using the following command syntax:
dbimport ems_db -d snc_dbs -c -t /dev/rmt/0m -b 512 -s 2000000
dbimport pm_db -d pm1_dbs -c -t /dev/rmt/0m -b 512 -s 2000000
db_logging -U ems_db
db_logging -U pm_db
Execute the following command lines only if the TMF Add-On has been installed:
dbimport tmf_db -d nb_dbs -c -t /dev/rmt/0m -b 512 -s 2000000
db_logging -U tmf_db

21 If the old release is R3.0 and prior, convert the databases to the new schema via the following command lines. If the old release is not R3.0 and prior, go to the appropriate step that follows.
export SNC_DBNAME=snc_db
export EMS_DBNAME=snc_db
Run the following scripts from the old release number:
SNMSDB2.0To2.1
SNMSDB2.1To3.0
SNMSDB3.0To3.1

Result: The screen shows the WaveStar SNMS R6.0 when recreating WaveStar SNMS database, which is typical.

Input the following:
export SNC_DBNAME=ems_db
export EMS_DBNAME=ems_db
SNMSDB3.1To4.0
fix_dbowner
SNMSDB4.0To4.2
del_alarmhist
SNMSDB4.2To5.0
SNMSDB5.0To5.1
SNMSDB5.1To6.0

Result: If everything goes well, the upgrade is completed. If you receive any error message in any step, run**:**
drdb
drdb -d snc_db
Ignore any error messages received from **drdb** and restore the database from tape. If the old release is WaveStar SNMS R2.1 and prior, follow the steps from step 17. If the old release is WaveStar SNMS R3.0, follow the steps from step 18. After fixing the data or the procedure, redo the conversion.

22 If the old release is R3.1, convert the databases to the new schema via the following command lines: If the old release is not R3.1, go to the appropriate step that follows.
SNMSDB3.1To4.0
fix_dbowner
SNMSDB4.0To4.2
del_alarmhist
SNMSDB4.2To5.0
SNMSDB5.0To5.1
SNMSDB5.1To6.0

Result: If everything goes well, the upgrade is completed. If you receive any error message in any step, run
drdb
drdb -d snc_db
Ignore any error messages received from **drdb**, restore the database from tape (follow the steps from step 19), fix the data or the procedure, and redo the conversion.

23 If the old release is R4.0.x, convert the databases to the new schema via the following command lines.
SNMSDB4.0To4.2
del_alarmhist
SNMSDB4.2To5.0
SNMSDB5.0To5.1
SNMSDB5.1To6.0

Result: If you do not receive any error messages, the upgrade is completed. If you receive any error message in any step, execute **drdb**, restore the database from tapes (follow the steps from step 20), fix the data or the procedure, and redo the conversion.

24 If the TMF interface has been previously used, make sure the value of the EMS_CLUSTER_ID is the same value that you have recorded in step 7.

Result: If the values match, go to step 26. If the values do not match, go to the next step.

25 If the values shown for the EMS_CLUSTER_ID in steps 7 and 24 do not match, access the *envfile_setup* file using the **vi** editor and add the old value of the EMS_CLUSTER_ID to make sure the value is correct:
vi /ems/etc/envfile_setup
Add **EMS_CLUSTER_ID=<old value>** right before the line showing:
export EMS_CLUSTER_ID

26 Bring WaveStar SNMS up by typing the following command: **up**

27 If the installation had been using Lucent's Dynamic Network Analyzer (DNA) before the upgrade, contact Lucent's DNA research and development organization to perform the corresponding upgrade on the OpenLink software. In the meantime, DNA currently looses its connection to the WaveStar SNMS database.

END OF STEPS

□

Procedure 4-11 Upgrading a Redundant WaveStar SNMS R4.0.x and Prior to WaveStar SNMS R6.0.x

Purpose

The following procedure is used to upgrade the WaveStar SNMS database to R6.0.x from SNMS R4.0.x and prior releases.

Before you begin

The procedures provided in the Task section are for redundant configurations and for different releases of WaveStar SNMS; the differences are easily noted. Use the steps and/or command iterations for your particular release.

During the upgrade of the WaveStar SNMS application, the application looses its connection to its NE for a period of time. To keep data loss to a minimum, perform the upgrade procedure at a quiet period when:

- NEs are not added or deleted.
- NEs do not have any equipment changes.

In addition, this procedure requires you to log on and log off the primary and the secondary/remote HP host servers.

WARNING

Make sure the primary host is running as active and the secondary/remote host is running as standby before you begin this procedure.

This procedure relies on backup tapes. Should errors occur, have the appropriate backup tapes handy.

When upgrading from WaveStar R4.0.x and prior to WaveStar R6.0.x, a new del_alarmhist script must be run prior to running the SNMSDB4.2To5.0 script during the database retrofit. The del_alarmhist script helps to reduce the database conversion time when running the SNMSDB4.2To5.0 script by purging historical alarms in the Im_nealarm table.

The time required to run both scripts for the database conversion depends on the size of the Im_nealarm table, the table's contents, and other conditions. In a laboratory environment, it takes approximately 13 hours to convert 55,000 records, approximately 70 minutes to convert 16,000 records, and approximately 6 minutes to convert 5000 records.

Related information

During this procedure, you will be required to use information supplied in *Chapter 3, Ignite-UX! Tasks*.

Task

Use these steps to upgrade a standalone WaveStar SNMS R6.0.x from WaveStar SNMS R4.0.x and prior releases.

1 On the primary host, login as **ems**.

2 Execute the following command line to kill the Orbix process ID:
kill –9 <orbixd process id>

Result: The HA_Mgr process is being killed. Once the HA_Mgr process has been killed, go to the next step.

3 On the secondary/remote host**,** login as **ems.**

4 For geographic redundancy configurations, execute the following command line:
HA_MgrClient –m setOperMode –o ACTIVE

5 Verify that the secondary/remote host is running as active before going to next step by executing the following command line:
showtop

6 Upgrade the primary host by following steps 7 through 35.

7 Log in as **ems**.

8 Disable replication by executing the following command lines:
er_remove
er_refresh

Result: If you are on the primary host, you will receive the following message, which you should ignore: `couldn't find /tools/Informix/etc/buildsmi.snms`

9 Label a scratch tape *SNMS R4.0 data tar files*. Mount this scratch tape.

10 Back up flat files to tape using these command lines:
su - root
cd /ems (**cd /snc** for WaveStar SNMS 3.1 and prior)
**tar cvf /dev/rmt/0m **
**./etc/SDSenv_rc **
**./dsa **
**./HA/LOC/config **
./installEms.out (use **./installSnc.out** for WaveStar SNMS 3.1 and prior)

11 Log out from **root**.

Result: You are back to the ems ID.

12 If the TMF interface is not used, go to the next step.
If the TMF interface is used, use the following command to get the value of the EMS_CLUSTER_ID:
echo $EMS_CLUSTER_ID

Result: When the system displays the value of the EMS_CLUSTER_ID, record the value.

13 For WaveStar SNMS 2.1 and prior, back up the databases to tape as shown in the command iterations that follow. If the old release is not R2.1 and prior, go to the appropriate step that follows.
dbexport -c -t /dev/rmt/0m -b 512 -s 2000000 $SNC_DBNAME -ss

dbexport -c -t /dev/rmt/0m -b 512 -s 2000000 $PM_DBNAME -ss
dbexport -c -t /dev/rmt/0m -b 512 -s 2000000 $NQ_DBNAME -ss
Note: Each command iteration requires at least one tape. Mark each tape clearly.

14 For WaveStar SNMS 3.0, back up the databases to tape as shown in the command iterations that follow. If the old release is not R3.0, go to the appropriate step that follows.
dbexport -c -t /dev/rmt/0m -b 512 -s 2000000 $SNC_DBNAME -ss
dbexport -c -t /dev/rmt/0m -b 512 -s 2000000 $PM_DBNAME -ss
Note: Each command iteration requires at least one tape. Mark each tape clearly.

15 For WaveStar SNMS 3.1, back up the databases to tape as shown in the command iterations that follow. If the old release is not R3.1, go to the appropriate step that follows.
dbexport -c -t /dev/rmt/0m -b 512 -s 2000000 $SNC_DBNAME -ss
dbexport -c -t /dev/rmt/0m -b 512 -s 2000000 $PM_DBNAME -ss
dbexport -c -t /dev/rmt/0m -b 512 -s 2000000 $NCI_DBNAME -ss
Note: Each command iteration requires at least one tape. Mark each tape clearly.

16 For WaveStar SNMS 4.0, back up the databases to tape as shown in the command iterations that follow.
dbexport -c -t /dev/rmt/0m -b 512 -s 2000000 $EMS_DBNAME -ss
dbexport -c -t /dev/rmt/0m -b 512 -s 2000000 $PM_DBNAME -ss
dbexport -c -t /dev/rmt/0m -b 512 -s 2000000 $NCI_DBNAME -ss
Note: Each command iteration requires at least one tape. Mark each tape clearly.

17 Reload the system from the ground up using the procedures provided in *Chapter 3, Ignite-UX! Tasks*.
When the system prompts you to rebuild the Informix engine with `EMS new host Informix Database configuration?` answer **yes**.

18 If the TMF Add-On has not been ordered, go to the next step. If the TMF Add-On has been ordered, follow the steps in *Procedure 3-14 Installing the TMF Add-On*.

19 Log in as **ems**.

20 If the TMF interface has been previously used, make sure the value of the EMS_CLUSTER_ID is the same value that you have recorded in step 12.

Result: If the values match, go to step 22. If the values do not match, go to the next step.

21 If the values shown for the EMS_CLUSTER_ID in steps 12 and 20 do not match, access the *envfile_setup* file using the **vi** editor and add the old value of the EMS_CLUSTER_ID to make sure the value is correct:
vi /ems/etc/envfile_setup
Add **EMS_CLUSTER_ID=<old value>** right before the line showing:
export EMS_CLUSTER_ID

22 Execute the following command lines to bring down the WaveStar SNMS application and to clean up the WaveStar SNMS database:
Log in as **ems**.
dn
drdb
Answer **y** to `drop dsa`.

23 Restore the flat files from the *SNMS R4.0 data tar files* tape that was created in step 10 using the following command lines:
su - root
cd /ems
**tar xvf /dev/rmt/0m **
**./etc/SDSenv_rc **
**./dsa **
./HA/LOC/config

24 Log out as **root**.

Result: You are back at the ems ID.

25 If the old release is WaveStar SNMS R2.1 or prior, restore the database from tape by using the following command syntax. If the old release is not R2.1 or prior, go to the appropriate step that follows.

dbimport snc_db -d snc_dbs -c -t /dev/rmt/0m -b 512 -s 2000000
dbimport pm_db -d pm1_dbs -c -t /dev/rmt/0m -b 512 -s 2000000
db_logging -U snc_db
db_logging -U pm_db

If the TMF Add-On has been installed, execute the following command lines:

dbimport q3nb_db -d nb_dbs -c -t /dev/rmt/0m -b 512 -s 2000000
db_logging -U q3nb_db

If the TMF Add-On has not been installed, execute the following command lines:

dbimport q3nb_db -d fm2_dbs -c -t /dev/rmt/0m -b 512 -s 2000000
db_logging -U q3nb_db

26 If the old release is WaveStar SNMS 3.0, restore the database from tape by using the following command syntax. If the old release is not R3.0, go to the appropriate step that follows.

dbimport snc_db -d snc_dbs -c -t /dev/rmt/0m -b 512 -s 2000000
dbimport pm_db -d pm1_dbs -c -t /dev/rmt/0m -b 512 -s 2000000
db_logging -U snc_db
db_logging -U pm_db

27 If the old release is WaveStar SNMS 3.1, restore the database from tape by using the following command syntax. If the old release is not R3.1, go to the appropriate step that follows.

dbimport snc_db -d snc_dbs -c -t /dev/rmt/0m -b 512 -s 2000000
dbimport pm_db -d pm1_dbs -c -t /dev/rmt/0m -b 512 -s 2000000
db_logging -U snc_db
db_logging -U pm_db

Execute the following command lines only if the TMF Add-On has been installed:

dbimport tmf_db -d nb_dbs -c -t /dev/rmt/0m -b 512 -s 2000000
db_logging -U tmf_db

28 If the old release is WaveStar SNMS 4.0, restore the database from tape by using the following command syntax:
dbimport ems_db -d snc_dbs -c -t /dev/rmt/0m -b 512 -s 2000000
dbimport pm_db -d pm1_dbs -c -t /dev/rmt/0m -b 512 -s 2000000
db_logging -U ems_db
db_logging -U pm_db
Execute the following command lines only if the TMF Add-On has been installed:
dbimport tmf_db -d nb_dbs -c -t /dev/rmt/0m -b 512 -s 2000000
db_logging -U tmf_db

29 If the old release is R3.0 and prior, convert the databases to the new schema via the following command lines. If the old release is not R3.0 and prior, go to the appropriate step that follows.
export SNC_DBNAME=snc_db
export EMS_DBNAME=snc_db
Run the following scripts from the old release number:
SNMSDB2.0To2.1
SNMSDB2.1To3.0
SNMSDB3.0To3.1

Result: The screen shows the WaveStar SNMS R6.0 when re-creating WaveStar SNMS database, which is typical.

Input the following:
export SNC_DBNAME=ems_db
export EMS_DBNAME=ems_db
SNMSDB3.1To4.0
fix_dbowner
SNMSDB4.0To4.2
del_alarmhist
SNMSDB4.2To5.0
SNMSDB5.0To5.1
SNMSDB5.1To6.0

Result: If everything goes well, the upgrade is completed. If you receive any error message in any step, run
drdb
drdb -d snc_db

Ignore any error messages received from **drdb** and restore the database from tape. If the old release is WaveStar SNMS R2.1 and prior, follow the steps from step 25. If the old release is WaveStar SNMS R3.0, follow the steps from step 26. After fixing the data or the procedure, redo the conversion.

---

30 If the old release is R3.1, convert the databases to the new schema via the following command lines: If the old release is not R3.1, go to the appropriate step that follows.

SNMSDB3.1To4.0
fix_dbowner
SNMSDB4.0To4.2
del_alarmhist
SNMSDB4.2To5.0
SNMSDB5.0To5.1
SNMSDB5.1To6.0

Result: If everything goes well, the upgrade is completed. If you receive any error message in any step, run
drdb
drdb -d snc_db
Ignore any error messages received from **drdb**, restore the database from tape (follow steps from step 27), fix the data or the procedure, and redo the conversion.

---

31 If the old release is R4.0.x, convert the databases to the new schema via the following command lines.

SNMSDB4.0To4.2
del_alarmhist
SNMSDB4.2To5.0
SNMSDB5.0To5.1
SNMSDB5.1To6.0

Result: If you do not receive any error messages, the upgrade is completed. If you receive any error message in any step, execute **drdb**, restore the database from tapes (follow steps from step 28), fix the data or the procedure, and redo the conversion.

32 For local redundancy while installing the primary host, execute the following command lines on the secondary host:
Log in on secondary host: **root**
vgexport /dev/<cluster lock volume group>
exit
For example: **vgexport /dev/vg_clstr**

33 To regenerate the HA configuration files and scripts for a ***local redundancy configuration on the primary host,*** execute the following command lines and complete the following procedures from *Chapter 9, Redundancy Installation and Operations*:
su root (Do not use the dash.)
Procedure 9-7 Doing Post Installation Tasks
Procedure 9-4 Setting up NTP with the Real Time Source Server
-OR- *Procedure 9-5 Setting up NTP between Redundancy Servers*
Procedure 9-8 Creating a Cluster Lock Volume Group
Procedure 9-9 Exporting the Cluster Lock Volume Group—execute steps 1 through 3 only
/ems/etc/installHA 2> /tmp/installHA.out
rcp <secondary host>:/etc/cmcluster/cmclconfig /etc/cmcluster

34 To regenerate the HA configuration files and scripts for ***geographic redundancy on the primary host,*** execute the following command lines and complete the following procedures from *Chapter 9, Redundancy Installation and Operations*:
su root (Do not use the dash.)
Procedure 9-7 Doing Post Installation Tasks
Procedure 9-4 Setting up NTP with the Real Time Source Server
-OR- *Procedure 9-5 Setting up NTP between Redundancy Servers*
/ems/etc/installHA 2> /tmp/installHA.out

35 To complete the regeneration of the HA configuration files and scripts, the *HA_Topology.cfg* file must be changed as indicated on the primary host. This file is accessed using the **vi** editor:
vi /ems/etc/HA_Topology.cfg
Change the *status* field to **active** where the *site* field is equal to *local_primary.*
Change the *status* field to **down** where the *site* field is equal to

local_secondary or *remote_primary.*
Save the changes made to the file.
Exit the **vi** editor.

36 Bring **sncPkg** down on the secondary/remote host using the following command lines:
On the secondary/remote host:
login: **root**
cmhaltpkg -v sncPkg

Result: The HA_Mgr process is being killed. Once the HA_Mgr process has been killed, go to the next step.

37 Bring **sncPkg** up on the primary host, use the following command lines:
On the primary host:
Log in as **root**
cmrunnode -v <primary host>
cmviewcl

Result: If the package status displays the message `starting`, go to step 39. If the message `starting` does not appear, go to the next step.

38 If the message `starting` does not appear as a result of the **cmviewcl** command executed in the previous step, execute the following command line: **cmrunpkg sncPkg**

39 For local redundancy configurations, execute the following command lines on the secondary host:
Log in as **root**
cmhaltnode -v -f <secondary host>

40 This step completes the installation/upgrade of the local/geographic primary host.

41 Upgrade the secondary/remote host by executing steps 7, 12, 17 through 22.

42 To regenerate the HA configuration files and scripts for ***local redundancy configuration on the secondary host,*** execute the following command lines and complete the following procedures from *Chapter 9, Redundancy Installation and Operations*:
su root (Do not use the dash.)
Procedure 9-7 Doing Post Installation Tasks
Procedure 9-4 Setting up NTP with the Real Time Source Server
-OR- *Procedure 9-5 Setting up NTP between Redundancy Servers*
Procedure 9-9 Exporting the Cluster Lock Volume Group—execute steps 4 through 7 only.

43 To regenerate the HA configuration files and scripts for ***geographic redundancy on the remote host,*** execute the following command lines and complete the following procedures from *Chapter 9, Redundancy Installation and Operations*:
su root (Do not use the dash.
Procedure 9-7 Doing Post Installation Tasks
Procedure 9-4 Setting up NTP with the Real Time Source Server
-OR- *Procedure 9-5 Setting up NTP between Redundancy Servers*
/ems/etc/installHA 2> /tmp/installHA.out

44 This step now completes the installation/upgrade procedure for the secondary/remote host. Proceed to the next step to configure the HA redundancy environment.

45 For local redundancy configurations on the primary host, login as **ems**. For geographic redundancy configurations, go to step 48.

46 Execute the command: **su root** (Do not use the dash.)

47 Execute the following command lines:
/ems/etc/installHA

48 On the secondary/remote host, login as **ems**.

49 Execute the command: **su root** (Do not use the dash.)

50 For geographic redundancy only, execute the following:
/ems/etc/installHA

51 Execute the following command line and provide the following responses:
/ems/etc/rejoin
`Remove ATS/Directory from standby?` **Yes**
`ER configuration?` **Yes**
`Database resynchronization?` **Yes**

52 If the installation had been using Lucent's Dynamic Network Analyzer (DNA) before the upgrade, contact Lucent's DNA research and development organization to perform the corresponding upgrade on the OpenLink software. In the meantime, DNA currently looses its connection to the WaveStar SNMS database.

END OF STEPS

5 GUI Client Installation on a Windows NT Desktop

OverviewOverview

Purpose This chapter describes the procedure to install the GUI client on each of the supported platforms.

Contents The following topics are discussed in this chapter:

Procedure 5-1 Defining HP Servers for a Windows NT Desktop

Purpose

For the Windows NT operating system, the HP servers must be defined in the TCP/IP */etc/hosts* file. This procedure is used to define the HP servers in the */etc/hosts* file.

Before you begin

For a Windows NT system, the */etc/hosts f*ile is in the directory *\Winnt\system32\drivers\etc.*

For a Windows NT Terminal Server system, the */etc/hosts* file is in the directory *\WTSRV32\system32\drivers\etc.*

Task

Use these steps to define the HP servers in the TCP/IP /*etc/hosts* file.

1 Locate the */etc/hosts* file in the appropriate directory.

2 Capture all predefined host entries before overwriting the file on the Windows NT desktop.

3 Use **ftp** to copy the */etc/hosts* file that is located on the HP server to the Windows NT desktop.

END OF STEPS

□

Procedure 5-2 Creating a User Login on a Windows NT Desktop

Purpose The following procedure is used to create user logins on a Windows NT desktop.

Before you begin For Windows NT desktops already in use, customer defined logins and passwords might already be available on the desktop. If the customer requests use of one of these accounts, the installer does not have to create a new account for WaveStar SNMS users. The next step in GUI installation can proceed.

Task Use these steps to create user logins on a Windows NT desktop.

1 Log in as **Admin**.

2 Launch the User Manager For Domains application by navigating through the following menus:
Start ->Programs->Administrative Tools (Common)->User Manager For Domain

Result: A User Manager screen is displayed, which contains a menu bar and a scrollable table showing all defined users.

3 To create a new user, access the User pull-down menu item.

4 Select the **New User...** menu item.

Result: A New User screen appears.

5 Enter the following information in the New User screen:
Username: **ems**
Full Name: **EMS/NMS Manager**
Password: **ems123**
Confirm Password: **ems123**
Check the box **Password Never Expires** and press **Add**.

Result: The screen clears to prepare for the addition of another user.

6 Press **Close** on the New User screen to stop adding new users.

Result: Once the **ems** user ID is created, the User Manager application can be exited.

7 Access the User pull-down menu.

8 Select **Exit.**

END OF STEPS

□

Procedure 5-3 Installing Adobe Acrobat on a Windows NT Desktop

Purpose This procedure is used to install Adobe Acrobat on a Windows NT desktop.

Before you begin The Adobe Acrobat installation file, which is named *ar40eng.exe*, is available on the WaveStar SNMS installation disk. If the Service Pack 4.0 installation disk is still in the CD-ROM drive, switch disks.

For Windows NT Terminal Server systems, the default installation directory is *M:\Program Files\Adobe\Acrobat 4.0.* Because the boot partition is very small, change the following:

- the default drive directory from *M:* to *C:*
- the default acrobat reader install directory to *C:\ProgramFiles\Adobe\Acrobat 4.0.*

Task Use these steps to install Adobe Acrobat on a Windows NT desktop.

1 To install Acrobat Reader, open the **My Computer** desktop icon.

2 Click on the CD-ROM disk drive.

Result: A screen appears that lists all files on the CD-ROM.

3 Double click on the *ar40eng.exe* file to launch the Acrobat installation program.

4 Use the default configuration parameters to install the program.

5 Install Adobe Acrobat in *C:\ProgramFiles\Adobe\Acrobat 4.0.*

END OF STEPS

□

Procedure 5-4 Installing the Japanese Font Pack on a Windows NT Desktop

Purpose The following procedure is used to install the Japanese font pack on a Windows NT desktop.

Before you begin If Japanese language support is not required for this installation, this procedure can be skipped.

The Japanese font pack installation file, which is called *jpnfont.exe,* upgrades the Adobe Acrobat Reader to support the Japanese language. It is installed in the same directory as the Acrobat Reader program, which is *C:\Program Files\Adobe\Acrobat 4.0.*

Task Use these steps to install the Japanese font pack.

1 Login as **administrator**.

2 Open the **My Computer** desktop icon.

3 Click on the CD-ROM disk drive.

Result: A screen listing all files on the CD-ROM appears.

4 Double click on the *jpnfont.exe* file to launch the Adobe Acrobat installation program.

5 Use all default configuration parameters to install the program.

END OF STEPS

□

Procedure 5-5 Installing the GUI on a Windows NT Desktop

Purpose The following procedure is used to install the GUI application. on a Windows NT Desktop.

Before you begin Before installing the GUI application, determine the most appropriate disk that can accommodate the GUI software. We recommend at least 1GB of free space for the WaveStar SNMS application.

More than one release of the GUI can be installed on a single workstation. For instance, a release 2.0 GUI, a release 3.0 GUI, and a release 4.0 GUI can co-exist on the same Windows NT desktop. We recommend that all GUI versions reside on the same disk.

In most cases, the GUI application should not reside on the same disk as the operating system. Therefore, the GUI software should be installed on the D: or E: drive. To create a new logical disk, use the Windows NT administrator utility *Disk Administrator,* which can be reached from the **Start** button by navigating through the following cascading menus: **Start ->Programs->Administrative Tools (Common)->Disk Administrator**.

Once launched, the Disk Administrator utility graphically depicts the server disk formatting.

For terminal server installations, the installation disk should always be the C: drive. Because WaveStar NMS and WaveStar SNMS share configuration files, both applications must reside on the same disk. The root directory of all WaveStar NMS files on the Windows NT desktop is */jui.*

Task Use these steps to install the GUI application.

1 Insert the WaveStar SNMS installation disk in the CD-ROM drive.

2 Open the **My Computer** desktop icon.

3 Click on the CD-ROM disk drive.

Result: A screen listing all files on the CD-ROM appears.

4 Double click the *snms*.tar* file to launch the extract installation program.

Result: The installation program displays a Winzip screen requesting a directory for installation.

5 If a previous version of SNMS is already installed on the workstation, a warning message can indicate that files are about to be overwritten. Press **Yes To All** to continue the installation.

Result: The GUI is installed in the root directory *\snmsR4.2*.

END OF STEPS

□

Procedure 5-6 Creating a Short Cut to Run the GUI on a Windows NT Desktop

Purpose The following procedure is used to create a short cut to run the GUI on a Windows NT desktop.

Before you begin The GUI already be installed on the desktop before you can create a short cut.

Task Use these steps to create a short cut to run the GUI on a Windows NT desktop.

1 Right click on (the background of) your PC screen.

2 Select **New**.

3 Select **Shortcut**.

4 On the command line, select **Browse.**

5 Look for the directory in which the GUI client resides.

6 Select **snms.bat** and the correct directory.

7 Enter a name for the shortcut that you are creating.

8 Click **Finish**.

9 Enter the name of the shortcut.

10 Once you see the icon for the shortcut, right click on the icon.

11 Select **Properties**.

12 Click **Shortcut**.

13 At the Target line, type **-host <hostname>**.

14 Click **OK**.

END OF STEPS

□

Configuring WaveStar SNMS on a Windows NT Desktop

Updating the WS-NMS F-interface File

The WaveStar SNMS software contains an F-interface configuration file that helps WaveStar NMS locate different versions of WaveStar SNMS software. The pathname of this file is:

<GUI Root Directory>/snc/fint/sncFint.cfg.

WaveStar NMS accesses a copy of this file from the directory:

\jui\jnm\itm\southbound\snc\sncfint

If the *sncFint.cfg* file is not already present in that directory, a copy of the file must be put into:

\jui\jnm\itm\southbound\snc\sncfint

The file format for the file *sncFint.cfg* is the same in every release of WaveStar SNMS software.

Updating the WS_NMS Classpath

The Java classpath parameter identifies the source of Java files that the GUI executes. The classpath variable for the WaveStar SNMS GUI is automatically set based on values in the *sncFint.cfg* file. However, the classpath for WaveStar NMS must be updated to point to any version of the WaveStar SNMS GUI client. In other words, the WaveStar NMS classpath variable needs to include an *\snmsR3.0* or *\snmsR4.0* or ... directory in its list of classpath directories. The WaveStar NMS file that might have to be edited is:

\jui\bin\run_jnm.bat

Only one WaveStar SNMS root directory has to be included in the WaveStar NMS classpath variable.

□

Procedure 5-7 Configuring the HP Server for WaveStar SNMS User Logins

Purpose Beginning with WaveStar SNM Release 4.2, WaveStar NMS uses its own login IDs in order to login to WaveStar SNMS. For WaveStar SNMS to support this feature, CSL support must be enabled.

Before you begin The default password for the WaveStar SNMS server is *ems123*.

Task Use these steps to configure CSL support.

1 Telnet to the WaveStar SNMS server.

2 Login to the WaveStar SNMS server using the **ems** login.

3 Access the *$GS_CONFIG_PATH* file with an editor such as **vi**:
Example: **vi $GS_CONFIG_PATH**

4 Search for the CSL_ENABLE value. The default line in the file should be **CSL_ENABLE = 0**

5 Change the value of zero to one. The change line should read **CSL_ENABLE = 1**

6 Save the file.

7 Exit out of the editor.

8 Execute the command: **apprestart -n GUI_Server**

9 Log out of the WaveStar SNMS server.

END OF STEPS

Procedure 5-8 Testing the GUI on a Windows NT Desktop

Purpose This procedure is used to test the GUI from an MS-DOS prompt.

Before you begin The GUI must be installed and the WaveStar SNMS server application must be running on the HP server.

Task Use these steps to test the GUI from an MS-DOS prompt.

1 Launch an MS-DOS window using the start button by navigating through the following cascading menus:
Start->Programs->Command Prompt

2 At the MS-DOS prompt, change the directory to the root directory of the GUI application.

3 To launch an SNMS GUI, execute the command line:
SNMS -host <hostname>

END OF STEPS

□

6 GUI Client Installation on a Sun Workstation

Overview

Purpose This chapter describes the procedure to install the GUI client on each of the supported platforms.

Contents The following topics are discussed in this chapter:

Procedure 6-1 Creating an EMS User Login on a Sun Workstation

Purpose

The following procedure is used to create user logins for a Sun Workstation using **admintool**, which is a graphical user tool that is used to create user accounts.

Before you begin

The WaveStar SNMS GUI for the Sun Workstation is delivered on the WaveStar SNMS GUI Client CD-ROM for HP-UX installations.

Solaris users are not prevented from invoking a WaveStar SNMS GUI. Therefore, any Sun user account can be used to launch the GUI. However, an **ems** user account should be created on the Sun Workstation as a default. Other users can run the GUI from the *EMShome* directory.

Task

Use these steps to create user logins on the Sun Workstation using **admintool**.

1 Login as **root**.

2 Execute the command: **admintool**.

3 Use the add menu item to display the new user information dialog. The following parameters should be configured:
User Name: **ems**
Login Shell: **Korn**
Create Home Directory: **<button pushed>**
Path: **/export/home/ems**

4 Press **OK** to create the user account.

5 Exit the tool when complete.

END OF STEPS

□

Procedure 6-2 Configuring Domain Name Resolution on a Sun Workstation

Purpose The information in this procedure is used to help configure the domain name resolution on a Sun Workstation.

Before you begin A Sun Workstation that is in use might already have domain name resolution properly configured. To determine the proper domain name resolution and IP connectivity, use the **ping** command. If name resolution configuration appears to be correct, skip this procedure.

Task Use the following information to help configure the domain name resolution on a Sun Workstation.

1 The definition of name servers is stored in the file */etc/resolv.conf*. In the following example, the *resolve.conf* file defines the IP domain name and defines two name servers:

```
domain      ho.lucent.com
nameserver  135.17.1.12
nameserver  135.3.1.13
```

2 The file */etc/nsswitch.conf* can be used to specify the order in which IP names are resolved. To specify that the */etc/hosts* file should be checked before making a DNS query, find the line that begins with *hosts: flag* and specify the following: **hosts: files dns**

3 Both configuration files are text files and can be edited using the **vi** editor.

END OF STEPS

□

Procedure 6-3 Installing Adobe Acrobat on a Sun Workstation

Purpose This procedure is used to install Adobe Acrobat on a Sun Workstation.

Before you begin The Adobe Acrobat installation file is contained on the WaveStar SNMS GUI installation disk. The file on the disk is called *solaris.arws-40.tar.*

If Adobe Acrobat 4.0 is already installed, this procedure can be skipped. You can check the version information on the Acrobat splash screen. The Acrobat reader executable file is called *acroread.* The Acrobat reader software is installed in the */opt/Acrobat4* directory.

Task Use these steps to install Adobe Acrobat on a Sun Workstation.

1 Log in as **root**.

2 Insert the disk into the CD-ROM drive.

Result: The Solaris OS automatically mounts the disk under the directory */cdrom/cdrom0* and provides a graphical browser that can display the contents of the disk.

3 From the CDE tool-bar, launch a console window to access a shell prompt.

4 At the shell prompt, create a temporary directory.

5 Copy the file *solaris.arws-40.tar* into the temporary directory created in the previous step.

6 Unpack the tar file using the command: **tar -xvf solaris.arws-40.tar**

Result: Unpacking the tar file creates a directory called *SSOLRS.install*.

7 Go into the *SSOLRS.install* directory and execute the INSTALL script using the following command lines:
cd SSOLRS.install
./INSTALL

Result: The INSTALL script begins execution.

8 As the INSTALL scrip executes, accept the end user agreement and install the software in the default directory.

Result: The INSTALL script completes.

9 When the script completes execution, execute the following command line to enable the EMS user to access the Adobe Acrobat reader:
ln -s /opt/Acrobat4/bin/acroread /usr/bin/acroread

10 To clean up the Adobe Acrobat installation files, delete the contents of the temporary directory by executing the following command lines.
cd /
rm -rf <temporary directory>

END OF STEPS

□

Procedure 6-4 Installing the Japanese Font Pack on a Sun Workstation

Purpose This procedure is used to install the Japanese font pack for the Adobe Acrobat Reader on a Sun Workstation.

Before you begin The Japanese font pack installation file, which is called *jpnfont.tar*, upgrades the Adobe Acrobat Reader for Japanese Language support. It is installed in the directory that houses the Acrobat Reader program. If Japanese language support is not required for your installation, skip this procedure.

Task Use these steps to install the Japanese font pack on a Sun Workstation.

1 At the shell prompt, make a temporary directory.

2 Copy the file */cdrom/cdrom/0/jpnfont.tar* into the temporary directory created in the previous step.

3 Unpack the tar file using the following command: **tar -xvf jpnfont.tar**

Result: Unpacking the tar file creates the directory *JPNKIT.*

4 Change directories to the *JPNKIT* directory: **cd JPNKIT**

5 Use the following command line to execute the INSTALL script: **./INSTALL**

Result: As the INSTALL script executes, accept the end user agreement and install the software in the default directory.

6 After the script completes execution, clean up the contents of the temporary directory:

cd /
rm -rf <temporary directory>

END OF STEPS

Procedure 6-5 Installing the GUI on a Sun Workstation

Purpose The following procedure is used to install the GUI application on a Sun Workstation.

Task Use these steps to install the GUI application on a Sun Workstation.

1 At the shell prompt, copy the WaveStar SNMS tar file from the CD-ROM to the EMS home directory.

2 Once the copy is complete, set global permissions on the tar file in the EMS home directory by using the following command lines:
cp /cdrom/cdrom0/snmsR*.tar /export/home/ems
chmod 777 /export/home/ems/snmsR*.tar

3 When completed, eject the CD-ROM from the drive using the command: **eject cdrom0**

4 Log out as **root**.

5 Log in as **ems**.

6 To unpack the GUI tar file, use the command: **tar -xvf snmsR*.tar**

Result: Unpacking the tar file creates a subdirectory that contains all Java files in their proper location.

END OF STEPS

□

Procedure 6-6 Testing the GUI on a Sun Workstation

Purpose This procedure is used to test the GUI application on a Sun Workstation.

Before you begin Once the GUI is installed and the WaveStar SNMS server application is running on the HP server, you can test the GUI from the shell prompt.

Task Use these steps to test the GUI application on a Sun Workstation.

1 Change directories to the root directory of the GUI application:
cd <root directory of GUI application>
For example: to change to the root directory of a release 4.0 SNMS GUI, execute the command: **cd snmsR40**

2 To launch a WaveStar SNMS GUI, execute the command:
snms.sh -host <hostname>

END OF STEPS

7 Thin Client

Overview

Purpose

This chapter describes the procedure to install the GUI client on the Thin Client platform.

The Thin Client software is used to access a Windows NT Terminal Server from a UNIX workstation. The Thin Client software, called Independent Computing Architecture (ICA), treats a UNIX workstation as a dumb terminal, but with desktop access that is equivalent to a Windows NT Terminal Server. The Thin Client software is delivered on the WaveStar SNMS UNIX installation disk.

ICA software is supported on these installations of UNIX:

- SOLARIS 2.6+
- HPUX 10.20 +
- AIX 4.1+
- Windows platform

Contents

The following topics are discussed in this chapter:

Procedure 7-1 Creating an EMS User Account on a Sun Workstation

Purpose This procedure is used to create user UNIX logins on a Sun Workstation.

Before you begin To create a user UNIX login on a Sun Workstation you are to use **admintool**, which is a graphical user tool to create new user accounts.

Task Use these steps to create user UNIX logins on a Sun Workstation

1 Login as **root**.

2 Execute the command **admintool**.

3 Use the add menu item to display the new user information dialog.

4 Configure the following parameters as shown:
User Name: **ems**
Login Shell: **Korn**
Create Home Directory: **<button pushed>**
Path: **/home/ems**

5 Press **OK** to create the user account.

6 Exit the tool when completed.

□

Procedure 7-2 Creating an EMS User Account on a HP-UX Desktop

Purpose

This procedure is used to create user UNIX logins on an HP-UX desktop.

Before you begin

To create a user UNIX login on an HP-UX desktop, you are to use **sam**, which is a graphical user tool used to administer an HP-UX desktop.

Task

Use these steps to create user UNIX logins on an HP-UX desktop.

1 Double click on the icons for **Accounts for Users and Groups** and **Local Users** to reach the user account management screen.

2 Under the Actions menu item, use **add** to add a user account.

3 Configure the following parameters as shown:
Login Name: **ems**
Start-up program: **/usr/bin/ksh**
Create Home Directory: **<button pushed>**
Home Directory: **/home/ems**

4 Press **OK** to create the user account.

5 Exit **sam** when complete.

END OF STEPS

□

Procedure 7-3 Creating an EMS User Account on an AIX Desktop

Purpose This procedure is used to create user UNIX logins on an AIX desktop.

Before you begin To create a user UNIX login on an HP-UX desktop you are to use **smit**.

Task Use these steps to create user UNIX logins on an AIX desktop.

1 Login as **root**.

2 Execute the command **smit**.

END OF STEPS

□

Procedure 7-4 Copying an ICA File from the Windows NT Terminal Server

Purpose

This procedure is used to copy the Independent Computing Architecture (ICA) file from the Windows NT Terminal Server.

Before you begin

Three versions of ICA installation files for different UNIX environments reside on the WaveStar SNMS GUI installation disk for the Windows NT Terminal Server platform:

- *solaris.ica.tar* are the ICA files for Solaris 2.6 and 2.7 systems
- *hp.ica.tar a*re the ICA files for HP-UX 10.20 and HP-UX 11.0
- *aix.ica.tar* are ICA files for AIX 4.1 and 4.2

Task

Use these steps to copy an ICA file from the Windows NT terminal server.

1 Login to the Windows NT Terminal server using the appropriate login, which is **ems** or **administrator**.

2 Launch an MS-DOS window by navigating through the following menus:
Start -> Programs -> Command Prompt

3 In the MS-DOS window, change directories to the CD-ROM drive. The directory should be labeled **D**.

4 Open an FTP session to the target workstation. To launch FTP, type the command: **ftp <IP address of workstation>**

5 When prompted for login identification, use **root** and the root password.

6 Using binary transfer, put the correct ICA tar file into the home directory of root by executing the following command lines:
bin
put <ica tar file>

7 End the FTP session by typing **exit**.

8 Log out of the Windows NT Terminal server.

END OF STEPS

Procedure 7-5 Unpacking the ica.tar File

Purpose This procedure is used to unpack the *ica.tar* file.

Task Use these steps to unpack the *ica.tar* file

1 Log in as **root**.

2 To unpack the tar file, execute the command:
tar -xvf /{solaris|hp|aix}.ica.tar

Result: A directory */usr/add-on/ui/tools/ICA* is created that contains all the ICA files.

END OF STEPS

□

Procedure 7-6 Configuring the ICA Software

Purpose This procedure is used to configure ICA software.

The script */usr/add-on/ui/tools/ICA/setup_ems.sh* is used to configure the ICA client to launch the WaveStar SNMS GUI application on a Windows NT Terminal Server. The *setup_ems.sh* script can also be configured for ICA to launch a Windows NT desktop interface.

Before you begin To configure the ICA client, you will need the following information:

- IP address of the Windows NT Terminal Server
- Windows NT Terminal Server disk and the directory that contains the WaveStar SNMS GUI software
- the name of the WaveStar SNMS host
- the type of GUI (i.e., SNMS)

You need to use the *setup_ems.sh* script. The options of the *setup_ems.sh* script, in the order in which they should be input, are the following:

- *-h <WaveStar SNMS host name>* identifies the WaveStar SNMS host name. This option is used for IP address resolution. The host name must be defined in the Windows NT Terminal Server's file *M:\{WTSRC|WINNT}\System32\drivers\etc\hosts*.
- *-d <directory of GUI software>* identifies the disk and the directory of the GUI software
- *-t <IP address of Windows NT Terminal Server>* identifies the IP address of the Windows NT Terminal Server
- *-snms* is the flag for the WaveStar SNMS GUI
- *-nt* is the flag for the Windows NT desktop

Examples:

To configure ICA to launch the WaveStar SNMS GUI, which is located in the directory *c:\snms4.0*, on a host called *dino* for a Windows NT Terminal Server with an IP address *135.17.95.127*, the following command would be executed:

setup_ems.sh -host dino -d c:\\snms4.0 -t 135.17.95.127 -snms

For some users, system administration needs to be supported from a UNIX desktop. Therefore, login access to the Windows NT administrator account is necessary. To configure ICA to launch a Windows NT desktop for the Windows NT Terminal Server with an IP address 135.17.95.127, execute the following command:

setup_ems.sh -t 135.17.95.127 -nt

Task To configure the ICA client to launch the WaveStar SNMS GUI application on the Windows NT Terminal Server, execute the **setup_ems.sh** command.

Result: Each invocation of the **setup_ems.sh** command creates an alias definition in the *ems_aliases* file, which is located in the directory */usr/add-on/ui/tools/ICA*. This alias file can be invoked from each user profile (for example: *.vueprofile*, *.dtprofile*, or *.profile*) so the alias definition is defined in the current shell at user login.

END OF STEPS

Procedure 7-7 Updating the User Profile and Testing the GUI

Purpose This procedure is used to update the user profile and to test the WaveStar SNMS GUI.

Task Use these steps to update the user profile and test the GUI.

1 Log out as **root**.

2 Add the following line to the user's profile:
. /usr/add-on/ui/tools/ICA/ems_aliases

3 When completed, execute the profile in the current shell via the command: **./{.vueprofile | .dtprofile | .profile}**

4 Test each alias created in the user profile.

END OF STEPS

□

8 GUI Client Installation on a Windows NT Terminal Server Platform

Overview

Purpose This chapter describes the procedure to install the GUI client on the Windows NT Terminal Server platform.

Contents The following topics are discussed in this chapter:

NT Terminal Server Platform

Purpose

The Windows NT Server 4.0 Terminal Server Edition (or NT Terminal Server 4.0) is a variant of the NT Server 4.0 operating system that supports terminal emulation for different user desktops. Terminal emulation is achieved through the use of a thin client application, called RDP, that treats the client as a dumb terminal, thereby allowing a user access to all Windows NT functions through a Windows desktop.

Microsoft, along with several other companies, have enhanced the functionality of NT Terminal Server client/server computing. The Citrix Corporation, which specializes in thin client computing across different platforms and networks, is the company most notable in their enhancement efforts.

Citrix Metaframe

Metaframe is a Citrix software product that extends the functionality of Microsoft's RDP software by providing server based computing to a larger variety of hardware/software platforms. Using Citrix's ICA, Metaframe can support connections to all WaveStar SNMS and WaveStar NMS target GUI platforms including HP-UX desktops and Solaris workstations. ICA uses data compression to guarantee high performance and security between client and server. Metaframe server software is bundled with WaveStar SNMS and WaveStar NMS software deliveries.

Before you begin

Several steps are required to install/configure the NT Terminal Server operating environment:

- Configuration of NT Server 4.0 Terminal Server Edition
- Installation and Configuration of Metaframe 1.8
- Server Disk Configuration
- SNMS User Configuration
- Terminal Server Connection Configuration
- Installation and Configuration of Each Client Workstation

The Windows NT Server software arrives pre-configured on each server ordered through Lucent. Currently, the recommended platforms are:

- HP NetServer LH4 Server
- Dell 6300 PowerEdge Server

Both platforms are identically equipped with two processors, 1 GB of RAM, three 9 GB drives configured for RAID 5, and dual Ethernet ports.

The HP and Dell factories install the NT Terminal Server Operating System with 10 user licenses. Site specific configuration, required for WaveSTar SNMS and WaveStar NMS, includes the following:

1. Network Configuration
2. Paging
3. Service Pack 4 Upgrade

Installation and configuration of each client workstation

Citrix ICA client software must be loaded on each client UNIX workstation that will launch the WaveStar SNMS Java GUI from the NT Terminal Server. The currently supported versions of UNIX are Solaris, AIX, and HP-UX. 3.6.1.

ICA Client software is freely available from the Citrix web site. However, WaveStar SNMS and WaveStar NMS repackage the ICA Client software to include a setup file with the Citrix software. This software is available on the WaveStar SNMS Application Software CD-ROM.

Procedure 8-1 Configuring Network Attributes

Purpose

This procedure is used to configure the Identification, Services, Protocols, Adapters, and Bindings attributes of the network.

Before you begin

You will be required to specify options for the Identification and Services tabs. The Protocol, Adapter, and Bindings tabs are optional.

You will need to have the following information handy:

- computer name
- workgroup (if application)
- IP Address, Subnet Mask, and Default Gateway
- each network adapter—if only one network adapter is used, connect the 10BaseT LAN connection to the configured port and test LAN connectivity through the **ping** command (via MS-DOS window).
- the IP address of each domain name server in the network in the search order

Task

Use these steps to configure the network.

1 Activate network configuration via the network icon on the control panel or the properties option on the Network Neighborhood desktop icon.

Result: A network configuration screen, called **Network**, appears.

2 In the Identification tab, configure the Computer Name and Workgroup parameters. If a workgroup is not applicable, leave the field blank.

3 In the Services tab, select the TCP/IP Protocol list item and press **Properties**.

Result: A Microsoft TCP/IP Properties screen appears, which contains five configuration tabs labeled: IP Address, SNMS, WINS Address, DHCP Relay, and Routing.

4 In the IP address tab, press **Specify an IP address.**

5 Configure the associated parameters for the IP Address, Subnet Mask, and Default Gateway.

6 Use the Adapter pull-down menu for each network adapter.

7 If more that one gateway needs to be configured, press **Advanced** and add applicable gateways.

8 In the DNS tab, enter the IP address for each domain name server in the network in search order, where the IP address at the top of the list is the first domain name server checked.

9 All other tabs are for optional information. To save the entered information, press **OK**.

END OF STEPS

□

Procedure 8-2 Configuring the Paging Size

Purpose This procedure is used to configure the paging size.

Before you begin Although three disks are installed on the server, the RAID controller treats all disks as one storage segment of size of 17+ GBs. (The size differs a little depending on the RAID controller manufacturer.) The Windows NT Administrator can partition this storage segment into a set of logical disk drives of NTFS or FAT format. The Windows NT utility for configuring the storage segment, which is called Disk Administrator, can be reached from the Start button:

Start -> Programs -> Administrative Tools (Common) -> Disk Administrator

The default configuration for each server is a single drive labeled C, with a default size of 2GBs. The format should be NTFS, but the manufacturer can deliver this drive in FAT format. The default C drive contains all Windows NT operating system files and is also to be used for operating system paging.

Task Use these steps to configure the paging size.

1 To check the amount of existing paging space, launch the **System properties** screen from the control panel screen or from the Properties pull down menu item on the My Computer desktop icon.

2 Click the **Performance** tab.

Result: The Total paging file size for all disk volumes appears.

3 If the Total paging file size for all disk volumes is less than 1024 MB, press **Change**.

Result: A Virtual Memory screen appears.

4 Select the C drive from the drive list.

5 Enter 1024 for both the Initial Size (MB) and Maximum Size (MB) input parameters.

6 Press **Set** to apply the parameters.

7 Press **OK** to exit the screen.

8 Press **Close** to exit the System Properties screen.

Result: To re-initialize the paging file, a dialog box indicates that a system reboot is needed.

9 Press **OK** to reboot.

END OF STEPS

□

Procedure 8-3 Upgrading to Service Pack 4

Purpose This procedure is used to upgrade to the Windows NT Service Pack 4.

Before you begin Service Pack 4 for the Windows NT Server 4.0 Terminal Server Edition contains a comprehensive set of problem fixes (including Y2K fixes) for the Windows NT Server operating system.

The installed Service Pack version is viewable from the System Properties screen. This screen is launched from the control panel screen or from the Properties pull-down menu item on the My Computer desktop icon. The Service Pack number and the NT version are displayed in the General tab folder.

The Terminal Server Service Pack 4.0 filename is called *Wtsi386.exe*.

Task Use the procedure to upgrade to the Windows NT Service Pack 4.

1 Load the CD-ROM containing the Terminal Server Service Pack into the CD-ROM drive of the computer.

2 Open the My Computer desktop icon.

3 Click on the CD-ROM disk drive.

Result: A screen listing all files on the CD-ROM appears.

4 Double click on the **Wtsi386.exe** file, which is the Terminal Server Service Pack 4.0 filename, to begin installation.

Result: The following prompt may be displayed during the installation: `In order to install this service pack, the system must first be in INSTALL mode. To place the system in INSTALL mode, you can start this program from the Add/`

```
Remove Programs applet from Control Panel.
Would you like this program to place the
system in INSTALL mode instead?
```

5 Press **Yes**.

Result: The end user license agreement screen appears.

6 At the bottom of the end user license agreement screen, select both check boxes for the following:
`Accept this license agreement` (must accept before installing the Service Pack)
`Backup file necessary to uninstall this Service Pack at a later time`

7 Press **Install**.

8 If the following prompt: `Your system is installed with 128 bit security. Do you wish to install this service pack?` appears on any North American system, press **Yes**:

9 At the final completion message: `Windows NT Terminal Server 4.0 Service Pack 4 installation is complete....` press **Restart** to reboot.

□

Metaframe 1.8

Licensing

Metaframe 1.8 is delivered on a CD-ROM along with user documentation. It is a licensed product that must be activated 30 days after the software is installed.

Two types of licensing agreements are offered:

- The standard installation of Metaframe includes 15 user licenses. For servers with 15 Metaframe licenses, the maximum number of simultaneous users is restricted by the maximum number of NT user licenses (10).
- For low-use servers, Metaframe can be purchased with 5 user licenses. For servers with 5 Metaframe licenses, the maximum number of simultaneous users is restricted by the maximum number of Metaframe licenses (5).

Activation is accomplished by registering the software license with Citrix through their web site, which is **www.citrix.com**. Once registration is complete, the user receives an activation code that must be entered into the Metaframe program. If web access is not available on the server, any computer with web access can be used to retrieve the activation code.

Disk Assignments

The target configuration for the terminal server defines two logical drives and one CD-ROM. The disk drives have the assigned letters C, M, and D:

- The M drive is the default boot partition. It is the original default partition labeled C, and changed to the letter M when Metaframe is installed. The recommended size for this drive is 2 GBs.
- The C drive is the WaveStar SNMS and WaveStar NMS application drive. It consists of the original, unformatted storage space available in the server. The recommended size is 15 GBs.
- The D drive is the CD-ROM drive.

During the Metaframe software installation procedure, the installer is asked whether to re-label available server storage devices to avoid conflict with the storage devices on the client workstation. The installer replies **yes** to this prompt, which allows the installation procedure to rename the boot partition (previously labeled C drive) to drive M, and rename the CD-ROM to drive N.

Once the Metaframe software installation is complete, the installer must create a new C drive from unformatted storage space, and re-label the CD-ROM drive to D.

Procedure 8-4 Installing Metaframe 1.8

Purpose

This procedure is used to install Metaframe 1.8.

Before you begin

The Metaframe software is delivered on a single CD-ROM. A label on the outside of the CD-ROM jewel case contains the base license number for the product. It has the format:

xxx-xxxx-xxxx-xxxx-xxxxxx.

You will need this base license number during installation.

Once installation commences in step 5, several informational screens and data prompt screens appear. Use the **Next** button to move from screen to screen. The following data is required:

- Add License Pack (step 6 and 7) requires base license pack information, which can be found on the back of the CD-ROM jewel case. Only one license pack is installed.
- Metaframe supports TCP/IP clients, IPX clients, and NetBIOS clients. For WaveStar SNMS and/or WaveStar NMS, only TCP/IP clients are supported. Therefore, make sure the TCP/IP check box is the only network connection selected when prompted for Network ICA Connections (step 8).
- The Add Modems prompt should be ignored because modems are not supported (step 9).

Related information

Refer to the previous section, **Metaframe 1.8,** before beginning this procedure.

Task

Use these steps to install Metaframe 1.8.

1 Log in to the server using the **Administrator** login.

2 Insert the installation CD in the CD-ROM drive.

Result: The installation procedure automatically displays a splash screen with three options: Metaframe Setup, Setup ICA Client, and Browse this CD. If the splash screen does appear, go to step 3. If the splash screen does not appear after a few seconds, double click on the My Computer desktop icon.

3 When the My Computer screen is displayed, double click on the CD-ROM device to launch the Metaframe installation software.

4 To start the installation process, press the button labeled **Metaframe Setup**.

Result: The Metaframe license agreement screen appears.

5 Press the **I Agree** button on the license agreement screen.

Result: The installation process commences. Several informational screens and data prompt screens appear. Use the **Next** button to navigate from screen to screen for information required in the next five steps.

6 When Add License Pack appears, press the button label **Add License Pack**.

Result: The license screen, along with a dialog box, prompts for the license.

7 Enter the license number, including the hyphens, as it appears on the jewel case.

Result: Only one license pack is installed.

8 When Network ICA Connection appears, check only the TCP/IP box as the network connection. Ignore the Add Modems prompt because modems are not supported.

9 Enable the check box labeled **Remap the server drives**.

Result: The pull-down menu become enabled. Make sure the pull-down menu choice is **M**. When completed, the system automatically reboots.

10 After the system reboots, logging in as any user causes the system to display a warning message indicating that 30 days remain before the Metaframe temporary license expires. This warning message is meant to prompt the administrator to activate the Citrix Metaframe license.

END OF STEPS

□

Procedure 8-5 Recording the Metaframe License Number

Purpose When the installer enters the license from the back of the CD-ROM jewel case, Metaframe appends eight characters to the license string. You will need this complete license string to obtain an activation code from the Citrix web site.

Before you begin The Metaframe License can be retrieved from the Citrix Licensing Screen.

Task Use this procedure to activate the Metaframe License.

1 Log in as **Administrator**.

2 Select the Metaframe task bar.

Result: The Metaframe task bar contains a set of buttons, each with an associated tool tip. Passing the cursor over the each button should display the tool tip.

3 Press the button (the second button from the top of the task bar) with the tool tip indicating **Citrix Licensing**.

Result: On the Citrix Licensing screen, each Service Pack license is listed—there should be only one Service Pack license.

4 Record the license number for the Service Pack entered during installation.

Result: You can leave this screen open, since it will be needed to enter the activation code for this license.

END OF STEPS

□

Procedure 8-6 Retrieving the Metaframe Activation Code

Purpose This procedure is used to activate the Metaframe license and to retrieve an activation code.

Before you begin To retrieve the activation code for the license, you will need web access using any standard web browser.

Task Use these steps to activate the Metaframe license and to retrieve the activation code.

1 Navigate to the URL **www.citrix.com/activate.**

2 Follow the instructions for Metaframe license activation.

Result: During the installation, you will be required to enter company information. Use information for yourself or information for the author. When you reach the last screen, the activation code is displayed.

3 When you reach the last screen, look for the activation code and record the activation code onto the back of the CD-ROM jewel case for re-installation.

END OF STEPS

□

Procedure 8-7 Activating the Metaframe License

Purpose This procedure is used to activate the Metaframe license from the Citrix Licensing screen.

Task Use these steps to activate the Metaframe license from the Citrix Licensing screen.

1 Select the line containing the Metaframe license number (the text line should read *Metaframe 1.8 for Windows*).

Result: The line only becomes highlighted when the License Description field is selected. A confirmation dialog should indicate that the license is now activated.

2 Once the license is activated, close the Citrix Licensing Screen.

END OF STEPS

□

Procedure 8-8 Configuring the Server Disk

Purpose This procedure is used to configure the server disk.

Task Use these steps to configure the server disk.

1 To perform disk configuration, log in as **Administrator.**

2 Launch the Disk Administrator utility from the **start** button, via the following cascading menus:
Start-> Programs -> Administrative Tools (Common) -> Disk Administrator

Result: Once launched, the Disk Administrator program graphically depicts the server disk formatting.

END OF STEPS

□

Procedure 8-9 Changing the CD-ROM Drive Letter To D

Purpose This procedure is used to change the CD-ROM drive to the letter **D**.

Task Use these steps to change the CD-ROM drive to the letter D.

1 Go to the box representing CD-ROM 0, which should be labeled as N.

2 Use the left mouse button to select the box that represents the CD-ROM.

3 Display the popup menu for the CD-ROM by pressing the right mouse button in the selected box.

4 From the popup menu, choose the option labeled **Assign Drive Letter**.

Result: A dialog box indicates the available drive letter choices.

5 Assign the drive to letter **D**.

6 Press **OK**.

Result: A confirmation dialog indicates that the assignment will be performed immediately. You are asked whether you want to continue.

7 Press **Yes**.

END OF STEPS

□

Procedure 8-10 Creating a New C Drive

Purpose This procedure is used to create a new C drive.

Before you begin The size of free space on the disk should be approximately 15 GBs.

Task Use these steps to create a new C drive.

1. In the graphical picture depicting Disk 0, go to the box labeled **Free Space**.

   Result: The size of the space should approximately 15 GBs.

2. Use the left mouse button to select the **Free Space** box.

3. Display the associated popup menu by pressing the right mouse button in the selected box.

4. Select the **Create** menu item from the popup menu.

   Result: A dialog box indicates that this new partition may not work with MS-DOS.

5. Press **Yes** to continue the operation.

   Result: A new screen titled *Create Primary Partition* appears, which prompts for the size of the new partition.

6. Enter the total amount of free space available in the associated text field.

7. Press **OK** to complete the operation.

   Result: The label on the selected box changes to unformatted.

8 Display the popup menu again by pressing the right mouse button in the selected box.

9 Select the **Assign Drive Letter** menu item from the popup menu.

Result: A dialog box indicates the available drive letter choices.

10 Assign the drive to letter C and press **OK**.

Result: The letter of the drive on the selected box changes to **C**.

11 Display the popup menu again by pressing the right mouse button in the selected box.

12 Select the **Commit Changes Now** menu item from the popup menu.

Result: A dialog box asks whether the change should be written to disk.

13 Press **Yes** to affirm the change.

Result: A dialog box indicates successful completion.

14 Press **OK**.

15 Display the popup menu a fourth time by pressing the right mouse button in the selected box.

16 Select the **Format** menu item from the popup menu.

Result: A dialog box prompting the user for several items.

17 Change the file system type from **FAT** to **NTFS**.

18 Press **Start**.

19 Press **OK** for all subsequent dialog box warning and status messages.

Result: The label on the selected box should have changed to NTFS. The disk configuration is completed.

20 To exit the disk administrator program, use the **File** menu bar pull-down menu and select the **Exit** menu item.

END OF STEPS

□

Procedure 8-11 Configuring the WaveStar SNMS User

Purpose This procedure is used to configure the WaveStar SNMS user.

Before you begin All WaveStar SNMS users access the Windows NT Terminal Server through the EMS user ID. The default EMS password, *ems123*, is used with the **ems** login ID.

This **ems** login and password are configured into the ICA software installed on each client workstation. When a user launches the GUI on the Windows NT Terminal Server, the user is automatically launched using the EMS login ID.

Task Use these steps to configure the WaveStar SNMS user.

1 To perform user configuration, log in as **Admin.**

2 Launch the User Manager For Domains application from the Start button, via the following cascading menus:
Start -> Programs -> Administrative Tools (Common) -> User Manager For Domains

Result: A **User Manager** screen appears, which contains a menu bar and a scrollable table showing all defined users.

3 To create a new user, access the User pull-down menu item.

4 Select the **New User** menu item.

Result: A New User screen appears.

5 On the New User Screen, enter the following information:
Username: **ems**
Full Name: **ems user**
Password: **ems123**
Confirm Password: **ems123**

Check the box **Password Never Expires**.
Press **Add**.

Result: If errors do not occur, the screen clears to add another user.

6 Press **Close** on the New User screen to stop adding new users.

Result: Once the EMS user ID is created, the User Manager application can be exited.

7 Access the User pull-down menu.

8 Select **Exit**.

END OF STEPS

□

Procedure 8-12 Configuring the Terminal Server Client

Purpose This procedure is used to configure the terminal server client.

Before you begin The Terminal Server defines the concept of sessions. A session is a single user connection from a client to a server. A session consists of either:

- a running WaveStar SNMS standalone application
- a running WaveStar NMS application and all associated WaveStar SNMS cut-through GUIs

Exiting a running WaveStar SNMS standalone application or exiting a running a WaveStar NMS application automatically terminates the user session.

In addition to shutting down the application, the user can close the window in which one of the above sessions is running. Closing the window also closes the associated session.

Session termination on window closure is a configurable attribute. By default, closing a session's window does not terminate the session. Instead, the session remains active, waiting for the user to reconnect to the session. Once a client workstation reconnects to the session, that user resumes interaction with the previous session at the point where that user left off.

In Windows NT Terminal Server terminology, the default behavior for a broken session is disconnection. The Windows NT Terminal Server should be configured to reset the session when it becomes broken.

Task Use these steps to configure the terminal server client.

1 To perform session configuration, log in as **Administrator**.

2 Launch the Terminal Server Connection Configuration application from the Start button by navigating through these cascading menus: **Start -> Programs -> Administrative Tools (Common) -> Terminal Server Connection Configuration**

Result: A Terminal Server Connection Configuration screen appears, which contains a menu bar and a scrollable table showing these two lines:

```
ica-tcp   tcp  Citrix    ICA    3.0
rdp-tcp   tcp  Microsoft RDP   4.0
```

3 Double click the line specifying the ica-tcp connection.

Result: An Edit Connection screen appears.

4 Press **Advanced**.

Result: An Advanced Connection Settings screen appears that has a configuration parameter at the bottom of the screen labeled:

```
On a broken or timed-out connection
<disconnect > the session
```

5 A check box next to this configuration parameter is labeled (Inherit User Config). Disable the inheritance option (for the above configuration parameter only) by clicking on the adjoining check box.

Result: The configuration parameters choice list is enabled.

6 Choose the reset value from the choice list.

Result: When completed, the configuration parameter should read:

```
On a broken or timed-out connection <reset >
the session.
```

7 Press **OK** to save the configuration.

Result: The Advanced Connection Settings screen closes.

8 If a dialog box indicates that the configuration change will apply to all future sessions only, press **OK**.

9 On the Edit Connection Screen, press **OK**.

Result: The Edit Connection Screen closes.

10 On the Terminal Server Connection Configuration screen, access the User pull-down menu.

11 Select **Exit**.

END OF STEPS

9 Redundancy Installation and Operations

Overview

Purpose This chapter contains the procedures needed to install a redundant system.

Contents The following topics are covered in this chapter

Procedure 9-1 Creating an OS/WaveStar SNMS Mirrored Disk for a Root Volume Group

Purpose This procedure is used to configure an OS/WaveStar SNMS mirrored disk for the root volume group.

Although the configuration of disk mirroring is done automatically by the **init_disk** command, this section briefly mentions the important steps in the procedure (root, data, database).

Task Use these steps to configure an OS/WaveStar SNMS mirrored disk for the root volume group.

1 Create a bootable root LVM disk to be used as the mirror.
pvcreate -B /dev/rdsk/cXtYdZ

2 Add this disk to the current root volume group.
vgextend -g pvg1 /dev/vg00 /dev/dsk/cXtYdZ

3 Make the new disk a boot disk.
mkboot /dev/rdsk/cXtYdZ

4 Copy the correct AUTO file into the new LIF area.
mkboot -a “hpux” /dev/rdsk/cXtYdZ

5 Mirror the root and primary swap logical volumes and all devices in Vg00, such as */usr, /swap*. The root logical volume must be mirrored first to ensure that it occupies the first contiguous set of extents on the new disk. The command used to mirror a logical volume is:
lvextend -m 1 /dev/vg00/lvol1 /dev/dsk/cXtYdZ
Execute this command for each logical volume (**lvol1** through **lvol9**).

6 Determine if the BDRA is correct with the following command:
/usr/sbin/lvlnboot -R /dev/vg00

7 Verify that the boot area was properly mirrored:
lvlnboot -v

END OF STEPS

□

Procedure 9-2 Creating an OS/WaveStar SNMS Mirrored Disk for all Other Volume Groups

Purpose This procedure is used to configure an OS/WaveStar SNMS mirrored disk for all other volume groups.

Although the configuration of disk mirroring is done automatically by the **init_disk** command, this section briefly mentions the important steps in the procedure (root, data, database).

Task Use these steps to configure an OS/WaveStar SNMS mirrored disk for all other volume groups.

1 Create an LVM disk to be used as the mirror.
pvcreate /dev/rdsk/cXtYdZ

2 Add this disk to the volume group.
vgextend -g pvg1 /dev/vg0x /dev/dsk/cXtYdZ

3 Mirror all logical volumes and all devices in <volume group>. The command used to mirror a logical volume is:
lvextend -m 1 /dev/vg0x/lvoly /dev/dsk/cXtYdZ
Execute this command for each logical volume.

4 Verify that all logical volumes were mirrored successfully by executing the following command line:
lvdisplay /dev/vg0x/lvoly

Result: When the display appears, look for `LVstatus= available/syncd` and mirrored copies = 1.

END OF STEPS

□

Procedure 9-3 Manually Synchronizing a Mirrored Logical Volume and Replacing a Disk

Purpose If the volume group is not currently active, LVM automatically synchronizes the mirrored copies of all logical volumes at boot time or later with the **vgchange** command; otherwise, manual synchronization is needed.

Before you begin The **vgcfgrestore** command sequence, which you will execute in step 4, replaces the **pvcreate**, **vgcreate**, and **lvcreate** commands. This entire step assumes that a valid *lvm* configuration file exists to restore. Check */etc/lvmconf* for *vg0x.conf*, which is created when changes are made to the logical volume configuration by the command **vgcfgbackup**.

Task Use these steps to do a manual synchronization.

1 Deactivate the volume group by executing: **vgchange -a n vg0x**

2 Replace the disk.

3 Verify that **ioscan** recognizes the disk.

4 Execute **vgcfgrestore** to restore the physical volume data, volume group, and logical volume data to the new disk. For example: **vgcfgrestore -n /dev/vg0x /dev/rdsk/cXtYdZ** (path to the replaced disk).

5 Activate the volume group: **vgchange -a y vg0x**

Result: When the volume group is activated, the new disk automatically is synchronized to the existing disk. Depending on the size of the disk and the number of logical volumes, this process

can take from 35 to 60 minutes. Once completed, the logical volumes are synchronized. The **cmcluster** commands then execute and the application comes up.

6 Verify the mirror status by executing the following command line:
vgdisplay -v vg0x | grep "LV Status"

Result: The system returns `available/syncd` for each logical volume one the disks are fully mirrored. The system returns `available/stale` if the disks are not fully mirrored.

7 If the disk contains any DB spaces, execute the following command to activate the dbspaces:
login as **informix**
onspaces -s dbspname -p /dev/informix/pathname -o offset -O -y

END OF STEPS

Procedure 9-4 Setting up NTP with the Real Time Source Server

Purpose This procedure is used to setup NTP with the Real Time Source Server.

Before you begin We strongly recommend that you enable NTP with the Real Time Source Server on all redundancy nodes. The use of NTP ensures that the system time on all nodes is consistent, resulting in consistent and stable Informix ER, consistent timestamps in log files, and consistent behavior of message services.

Task To enable NTP on all redundancy nodes, use these steps for all servers configured in a redundant system.

1 Login as **root**.

2 Make sure that an xntp process is not currently running by executing the following command line:
ps -ef | grep xntpd

Result: If an xntp process is running, go to the next step. If an xntp process is not running, go to step 4.

3 If an xntp process is running, manually stop it by executing the following command line:
/sbin/init.d/xntpd stop

4 Access the file */etc/ntp.conf* using the **vi** editor:
vi /etc/ntp.conf

5 Insert the following information into the */etc/ntp.conf* file:
server <TimeServer> [version <version>]

Where: *TimeServer* is a real network time source server, which can be a hostname or an IP address. If it is a hostname, make sure the TimeServer's hostname can be referenced by the host—if it cannot, add

TimeServer's hostname and IP in the */etc/hosts* file. TimeServer differs based on availability and customer preference. The *version#* is version of NTP run on the TimeServer.
For example: **server 135.1.1.200 version 3**

6 Access the file */etc/rc.config.d/netdaemons* for editing using the **vi** editor:
vi /etc/rc.config.d/netdaemons

7 In the */etc/rc.config.d/netdaemons* file, set environment variable XNTPD to 1: **XNTPD=1**

8 In the */etc/rc.config.d/netdaemons* file, set the environment variable NTPDATE_SERVER:
export NTPDATE_SERVER=<TimeServer>

9 Save the changes that you just made to the file.

Result: The xntp process starts at boot time.

10 The xntp process can be started manually by executing the following command line:
/sbin/init.d/xntpd start

END OF STEPS

□

Procedure 9-5 Setting up NTP between Redundancy Servers

Purpose

The two procedures in this section are used to set up NTP between redundancy servers.

Before you begin

Designating one of the redundancy hosts as the local primary (time) server provides a temporary solution for NTP in the redundancy system. This configuration might result in error when the designated source goes down completely (losses of power). Using a real network time source is strongly recommended.

Setting up NTP by using the local primary host as the time server takes approximately 15 minutes before it goes into effect. An error message might warn about a lack of the proper time source.

Task

Use these steps to set up the source server (local primary).

1 On the local primary, login as **root**.

2 Start SAM by executing the following command: **sam**

3 Navigate to **Time**.

4 From Time, navigate to **NTP Network Time Sources**.

5 Select **Actions**.

6 Select **Configure the NTP Local Clock**.

7 Select **Lock Clock.**

8 Click **OK**.

9 Select **Actions**.

10 Select **Add the Remote Server or Peer**.

11 Enter the host name (the name of the local primary).

12 Click **OK**.

13 Select **Actions**.

14 Select **Start NTP**.

15 Exit SAM.

16 Enter the command **ntpq -p** to verify the configuration.

17 Use the **vi** editor to access */etc/ntp.conf* and change the source server at the end of the file to the following address: **127.127.1.1**

18 Start SAM by executing the following command: **sam**

19 Navigate to **Time**.

20 From Time, navigate to **NTP Network Time Sources**.

21 Select **Actions**.

22 Select **Stop NTP**.

23 Select **Actions**.

24 Select **Start NTP**.

25 Enter the command **ntpq -p** to verify the that two entries have been made for the local host.

END OF STEPS

Task Use these steps to set up the client (all other hosts):

1 On the client server, login as **root**.

2 Start SAM by executing the following command: **sam**

3 Navigate to **Time**.

4 From Time, navigate to **NTP Network Time Sources**.

5 Select **Actions**.

6 Select **Add the Remote Server or Peer**.

7 Enter the synchronized server name (the name of the local primary).

8 Select **OK**.

9 Select **Actions**.

10 Select **Start NTP**.

11 Exit SAM.

12 Enter the command **ntpq -p** to verify the existence of the primary server.

13 Access the */var/adm/syslog/syslog.log* file to verify that tick adjust is working. The hosts must be synchronized within a minute so they can be rejoined.

END OF STEPS

□

Procedure 9-6 Connecting the RS-232 MC/ServiceGuard Cluster for the K-Class Server

Purpose

This procedure is used to connect the RS-232 MC/ServiceGuard cluster for the K-Class servers that are configured for local redundancy.

Before you begin

This procedure is **only** needed for the HP K-Class servers in a local redundancy configuration because a serial line (RS-232) heartbeat must be configured. The L-Class servers and the N-Class servers do not support a serial line (RS-232) heartbeat configuration.

Before you configure the serial line (RS-232) to carry heartbeat, determine the serial device file that corresponds with the serial port on each node.

Task

Use these steps to connect the RS-232 MC/ServiceGuard cluster.

1. Use an RS-232 cable with null modem to connect to the serial port on each node. Port 6 is recommended.

2. If the host comes with a MUX MDP panel, use **ioscan -fnC** to display hardware addresses and device file names. For example:
   ioscan -fnC tty

3. Once the device file has been identified, verify the connection from a terminal on the primary by executing: **cat < /dev/tty0p6.**

4. Verify the connection from a terminal on the secondary by executing: **cat /etc/passwd > /dev/tty0p6**

5 Repeat the same test with the servers reversed.

END OF STEPS

Procedure 9-7 Doing Post Installation Tasks

Purpose The following procedure is used to check various files and perform miscellaneous housekeeping functions after WaveStar SNMS has been installed.

Before you begin WaveStar SNMS must be installed before beginning this procedure.

Task Use these steps on all nodes in the redundancy configuration (both local and geographic redundancy).

1 Verify that the */etc/lvmrc* file sets AUTO_VG_ACTIVATE to 1 to allow the OS to activate all volume groups at boot time.

2 Check */etc/services* for these MC/ServiceGuard related entries:

```
hacl-hb    5300/tcp      # High Availability (HA) Cluster
heartbeat
hacl-gs     5301/tcp      # HA Cluster General Services
hacl-cfg    5302/tcp      # HA Cluster TCP configuration
hacl-cfg    5302/udp     # HA Cluster UDP configuration
hacl-probe  5303/tcp     # HA Cluster TCP probe
hacl-probe  5303/udp    # HA Cluster UDP probe
hacl-local  5304/tcp      # HA Cluster Commands
hacl-test   5305/tcp      # HA Cluster Test
hacl-dlm    5408/tcp     # HA Cluster distributed lock manager
```

3 Check */etc/inetd.conf* for these MC/ServiceGuard related entries:

```
hacl-cfg    dgram   udp    wait    root  /usr/lbin/cmclconfd
cmclconfd -p
phacl-cfg    stream  tcp    nowait  root  /usr/lbin/cmclconfd
cmclconfd -c
```

4 Check */etc/resolv.conf* to determine if a DNS server has been added. The DNS server entry should resemble the format:
nameserver xxx.xxx.xxx.xxx
Where: xxx.xxx.xxx.xxx is the IP address, in dotted notation, of the

DNS server that can send e-mail. This address is used for the WaveStar SNMS monitoring function of geographic redundancy. It is used to send email or a text pager to the operator after WaveStar SNMS detects that the host on the remote site cannot be reached. If a domain needs to be added, the syntax is: domain xxx.yyy.com.

5 If a mail server has not been added to */etc/resolv.conf*, add a DNS entry in the */etc/resolv.conf* file so WaveStar SNMS can determine the server for mail relay.

6 Check */etc/fstab* to verify that a cluster shared volume group does not require mount.

7 Check */etc/rc.config.d/cmcluster* to verify that AUTOSTART_CMCLD is set to 0.

8 Comment out the automated startup of the WaveStar SNMS application by editing the */etc/snc.rc* file and commenting out the following line:
su - ems -c "up -b -n"

9 Configure all required network interface cards via SAM.

10 On the primary host, login once as **root** and once as **ems**, and add the secondary/remote host name to the *.rhost* files as follows:
echo "<secondary hostname>" >> /.rhosts
echo "<secondary hostname>" >> ~ems/.rhosts
For example:
echo "pumbaa" >> /.rhosts
echo "pumbaa" >> ~ems/.rhosts

11 On the secondary/remote host, login once as **root** and once as **ems**, and add the primary host name to the *.rhosts* files as follows:
echo "<primary hostname>" >> /.rhosts
echo "<primary hostname>" >> ~ems/.rhosts
For example:

echo “timon” >> /.rhosts
echo “timon” >> ~ems/.rhosts

12 Add an entry in the */etc/hosts* file on each host containing the name and the IP address of the other host, along with the floating IP address for the local redundant host.
For example, on pumbaa add:
135,17.13.252 <tab> timon timon.ho.lucent.com

END OF STEPS

Procedure 9-8 Creating a Cluster Lock Volume Group

Purpose MC/ServiceGuard requires a cluster lock volume group to be created in order to resolve conflicts within the clustered arrangement.

Task Use these steps to create a clustered lock volume group.

1 Login as **root.**

2 Execute the following command:
sam

3 Click on **Disks and File Systems.**

4 Click on **Volume Groups**.

5 Click on **Actions**.

6 Click on **Create**.

7 Click on **Select New Volume Group**.

8 Enter volume group name and click **OK**.

9 Click on **Select Disk(s)**.

10 Select the disk and click **OK**.

11 Click on **OK** again.

12 Click on **File** and then on **Exit.**

13 Click on **File** and then exit SAM.

END OF STEPS

□

Procedure 9-9 Exporting the Cluster Lock Volume Group

Purpose This procedure is used to explore the Cluster Lock Volume group.

Before you begin The Cluster Lock Volume group should first be created on the primary host and then it should be exported to the secondary host.

Related information Refer to *Procedure 9-8 Creating a Cluster Lock Volume Group* to first create a cluster lock volume group.

Task Use these steps to export the cluster lock volume group. As an example, */dev/clvg00* has been created for Cluster Lock Volume Group on the primary host.

1 Log in as **root** on the primary host.

2 Take the cluster off line:
vgchange -a n /dev/clvg00

3 Copy the mapping of the volume group to a specified file:
vgexport -p -s -m /tmp/clvg00.map /dev/clvg00

4 Put the cluster back on line:
vgchange -a y /dev/clvg00

5 Copy the map file to the secondary nodes:
rcp /tmp/clvg00.map secondary:/tmp/clvg00.map

6 On the secondary host, login in as **root**.

7 Make a directory:
mkdir -p /dev/clvg00

8 Create a control file by running:
mknod /dev/clvg00/group c 64 0xhh0000
Where: hh is unique (hh=value of shared lock volume).

9 Import the volume group data using the map file from primary node.
vgimport -v -s -m /tmp/clvg00.map /dev/<cluster VG name>

END OF STEPS

Procedure 9-10 Executing the installHA Script

Purpose This procedure is used to install the high availability (HA) related scripts and to set up cluster configuration files.

Before you begin To set up a local redundancy configuration, the installHA script only has to be run on the local primary host. To set up a geographic redundancy configuration, the installHA script has to be run on the local primary host first, then on the remote primary host.

The installHA script prompts the administrator for information that is covered in the planning session. An empty string is not allowed when entering information during installation. Based on the correct information, the installHA can customize all cluster and package files.

The installHA script generates and copies the binary cluster configuration file to the other node. During a cluster configuration, errors should not occur; if errors do occur, the cluster binary file will not be created correctly.

The installHA script distributes package control scripts and all OA&M scripts to all nodes.

Task Use these steps to execute the installHA script.

1. Login as **ems.**

2. Enter the command: **su root**.

3. To launch the installHA script through installEms, exeucte the following command line and make the following selection:
   installEms
   Select option 6, **Configure Redundancy**

4. To launch the installHA script directly, enter:
   /ems/etc/installHA

5 If configuring local redundancy, select **Option 1 Local Redundancy Only**.

6 If configuring geographic redundancy on the primary host, select **Option 2 Geographic Redundancy Only** and then select the **Production** option.

7 If configuring geographic redundancy on the remote primary host, select **Option 2 Geographic Redundancy Only** and then the **Disaster Recovery** Option.

END OF STEPS

□

Procedure 9-11 Starting the Event Monitoring Service (EMS)

Purpose This procedure is used to start the Event Monitoring Service (EMS).

Before you begin Before you begin this procedure, EMS must be installed.

Task Use these steps to start the EMS.

1 Verify that the following links exist under */sbin/SnmpAgent.d* after the HP bundle is installed.

```
lrwxrwxrwx   1 root       sys             23 May 11 19:20
K435SnmpHpunix -> /sbin/init.d/SnmpHpunix
lrwxrwxrwx   1 root       sys             21 May 11 19:20
K435SnmpMib2 -> /sbin/init.d/SnmpMib2
lrwxrwxrwx   1 root       sys             23 May 11 19:20
K435SnmpTrpDst -> /sbin/init.d/SnmpTrpDst
lrwxrwxrwx   1 root       sys             23 May 11 19:21
K440SnmpMaster -> /sbin/init.d/SnmpMaster
lrwxrwxrwx   1 root       sys             23 May 11 19:22
S560SnmpMaster -> /sbin/init.d/SnmpMaster
lrwxrwxrwx   1 root       sys             23 May 11 19:22
S565SnmpHpunix -> /sbin/init.d/SnmpHpunix
lrwxrwxrwx   1 root       sys             21 May 11 19:22
S565SnmpMib2 -> /sbin/init.d/SnmpMib2
lrwxrwxrwx   1 root       sys             23 May 11 19:21
S565SnmpTrpDst -> /sbin/init.d/SnmpTrpDst
```

Result: If the links shown exist, go to step 3. If the links shown do not exist, go to step 2.

2 If the links shown in step 1 do not exist, create them.

3 Start the WaveStar SNMP Master Network Management daemon, **/usr/sbin/snmpdm**

Result: Go to *Procedure 9-12 Configuring EMS for Event Monitoring.*

END OF STEPS

Procedure 9-12 Configuring EMS for Event Monitoring

Purpose This procedure is used to configure EMS for event monitoring, which includes the following:

- monitoring disk status (step 5)
- monitoring the status of the LAN interface (step 30)
- notifying events via TCP (steps 11 and 36) and/or email (steps 24 and 48)

Before you begin EMS must be installed and started before you can begin this procedure.

During this procedure, you will need access to the SAM utility.

Task Use these steps to configure EMS for event monitoring.

1 Execute SAM by typing: **sam.**

2 Go to **Resource Management.**

3 Go to **Event Monitoring Service.**

4 To setup disk monitoring execute steps 5 through 29. To setup LAN monitoring execute steps 30 through 52.

5 Click on the **Actions** pulldown from main menu bar.

6 Select **Add Monitoring Request.**

Result: The Add or Copy Monitoring Request window appears.

7 In the **Resource Classes** subwindow, do the following:
Double click **vg**
Double click a **vg volume group**

Double click **pv-pvlink**
Double click **status**
In the **Resource Instances** subwindow, select *** disk**

8 Click **OK.**

Result: The Monitoring Request Parameters window is displayed

9 For the Notify field select: **When value changes**

10 For the Polling Interval field select: **30 seconds**

11 For the Notify via field select: **TCP**

12 For the Host field enter: **<hostname>**

13 For the Port field enter: **32000**

14 For the Comment field enter: **vgXX disk problem**

15 Click **OK.**

Result: The Note window appears.

16 Click **OK.**

Result: You are returned to the Event Monitoring Service window.

17 Repeat steps 5 through 16 for each volume group.

18 Click the **Actions** pulldown from the main menu bar.

19 Select **Add Monitoring Request.**

Result: The add or Copy Monitoring Request window appears.

20 In the **Resource Classes** subwindow, double click the following:
Double click **vg**
Double click a **vg volume group**
Double click **pv-pvlink**
Double click **status**
In the **Resource Instances** subwindow, select ***disk.**

21 Click **OK.**

Result: The Monitoring Request Parameters window appears.

22 For the Notify field select: **When value is = "DOWN"**

23 For the Polling Interval field select: **30 seconds**

24 For the Notify via field select: **Email**

25 For the Email Address field enter: **<id>@xxx.com**

26 For the Comment field enter: **vgXX disk is down**

27 Click **OK**.

Result: The Note window appears.

28 Click **OK**.

Result: You are returned to the Event Monitoring Service window.

29 Repeat steps 18 through 28 for each volume group.

30 Click the **Actions** pulldown from the main menu bar.

31 Select **Add Monitoring Request.**

Result: The Add or Copy Monitoring Request window appears.

32 In the **Resource Classes** subwindow, do the following:
Select **net**
Select **interfaces**
Select **lan**
Select **status**
In the **Resource Instances** subwindow, select *** (All Instances).**

33 Click **OK.**

Result: The Monitoring Request Parameters window appears.

34 For the Notify field select: **When value changes**

35 For the Polling Interval field select: **30 seconds**

36 For the Notify via field select: **TCP**

37 For the Host field enter: <**hostname**>

38 For the Port field enter: **32000**

39 For the Comment field enter: **lan problem**

40 Click **OK.**

Result: The Note window appears.

41 Click **OK.**

Result: You are returned to the Event Monitoring Service window.

42 Click on the **Actions** pulldown from the main menu bar.

43 Select **Add Monitoring Request.**

Result: The Add or Copy Monitoring Request window appears.

44 In the **Resource Classes** subwindow, do the following:
Select **net**
Select **interfaces**
Select **lan**
Select **status**
In the **Resource Instances** subwindow, select *** (All Instances)**

45 Click **OK.**

Result: The Monitoring Request Parameters window appears.

46 For the Notify field select: **When value is = "DOWN"**

47 For the Polling Interval field select: **30 seconds**

48 For the Notify via field select: **Email**

49 For the Email Address field enter: **<id>@xxx.com**

50 For the Comment field enter: **lan is down**

51 Click **OK.**

Result: The Note window is displayed.

52 Click **OK.**

Result: You are returned to the Event Monitoring Service window.

53 Click on the **File** pulldown from the main menu bar.

54 Click on **Exit.**

Result: You are returned to the SAM main window.

55 Click on the **File** pulldown from the main menu bar.

56 Click on **Exit SAM.**

END OF STEPS

□

Procedure 9-13 Viewing Cluster Status

Purpose This procedure is used to view cluster status.

Before you begin All WaveStar SNMS specific redundancy files are initially loaded in */ems/etc*. Later, by running */ems/etc/installHA*, the installHA script customizes and distributes these specific redundancy files into several directories.

Native MC/ServiceGuard executables are stored in */usr/sbin*. Cluster and package related files are in */etc/cmcluster*.

This procedure provides two methods to view cluster status:

- a brief status of the cluster, node, and package with **cmviewcl**
- detailed status of all aspects of the cluster, node, and package with **cmviewcl -v**

Task Use these steps to check an MC/ServiceGuard cluster status.

1 Login as **root** or **ems**.

2 For a brief status of the cluster, node, and package, run **cmviewcl**

Result: A brief status appears.

3 For detailed information for all aspects of the cluster, node, and package, run **cmviewcl -v**

Result: A detailed status appears.

END OF STEPS

□

Procedure 9-14 Starting a Cluster

Purpose This procedure is used to start a cluster.

Before you begin Before you run any redundancy operation procedure, make sure that the cluster is actually ready to run. Verify the following:

- Is the primary host ready (OS, hardware, and software)?
- Is WaveStar SNMS loaded correctly? You might want to try to bring up WaveStar SNMS manually as a simplex system outside the redundancy.
- Is redundancy configured correctly?
- Is the Informix ER ready to run? Has the ER configuration part of the installHA finished successfully?

This procedure is used to start a cluster; however, if AUTOSTART_CMCLD is set to 1, which is not recommended, in */etc/rc.config.d/cmcluster*, the cluster starts automatically while booting.

Task Use these steps to start a cluster.

1 If the MC/ServiceGuard cluster is currently down, login as **root** on the local host that you want to become active.

2 Check the topology file */ems/etc/HA_Topology.cfg* to verify that the status field for this host is *active* and that the status field for any other host is *down*.

3 Execute the command: **cmruncl -v** on that particular host.

Result: The cluster and the package sncPkg start.

4 Logout from the local host.

END OF STEPS

□

Procedure 9-15 Starting the sncPkg Package

Purpose This procedure is used to start the sncPkg package, which is the primary package that runs on local cluster or remote cluster.

Before you begin The startup process for the sncPkg package performs the following tasks:

- directory clean up
- starts Informix ER
- brings up WaveStar SNMS
- starts a monitor process
- resyncs topology among all redundancy nodes

When the cluster is first started, it attempts to start sncPkg on an active host. However, sncPkg might be down. If sncPkg is down, start it in the local cluster or the remote cluster.

As long as sncPkg is running, a **dn** command is not allowed because it causes unnecessary package switching.

Task Use these steps to start sncPkg.

1 Login as **root**.

2 To start sncPkg on a particular Node_Switching enabled node, enter the command line:
cmrunpkg -n <active node name> sncPkg

Result: The sncPkg on the particular node is started.

END OF STEPS

□

Procedure 9-16 Starting the standbyPkg Package

Purpose

This procedure is used to start the standbyPkg package.

Before you begin

The standbyPkg only runs when a standby node exists in an MC/serviceGuard Cluster (not in a single node cluster). When the standby node first rejoins the redundancy, it attempts to start the standbyPkg on the node if an sncPkg is running on some other node in the cluster. However, the standbyPkg can be down, which can be attributed to various reasons.

Task

To start the standbyPkg in the local cluster or the remote cluster, use *Procedure 9-17 Rejoining a Node in Redundancy*.

END OF STEPS

□

Procedure 9-17 Rejoining a Node in Redundancy

Purpose

This procedure is used to bring a node from the state of *down* to the state of standby *ready* in a redundancy configuration. This procedure is used for both local and geographic redundancy configurations.

Before you begin

Before you do the steps in this procedure, make sure a host is running in active mode.

This procedure resynchronizes the database and flat files, and starts the application on the standby host. It also notifies MC/ServiceGuard that the standby host is ready to receive the package.

Running the **rejoin** command in a local cluster configurations results in the startup of the standbyPkg. Running the **rejoin** command in a geographic cluster configuration results in the startup of the sncPkg.

The database resynchronization process consists of the following parts (stop points):

- remove replication definition associated with this node
- drop and recreate database
- redefine replication
- activate replication
- suspend replication to keep all new data into a queue
- data resynchronized by unloading from active node and loading at this node
- resume replication

Data is resynchronized in two parts:

- The first part, critical data, which is that data that is needed when the system is coming up, is resynchronized out front.
- The second part, historical related information—such as historical alarms and command/response information—is resynchronized through background processing while the rest of the rejoin process is still occurring. Tables that will be resynchronized in the background are defined in */ems/etc/dbconfig/sncdb_tabs.skip*.

The entire resynchronization process could take from 30 minutes to over several hours depending upon the size of the database. At the end of the second part of data resynchronization, a `skipped table copy completed` message is put into the */tmp/er_resync.log* file.

Before running the **rejoin** command, make sure that the active node is up and running normally.

Task Use these steps to rejoin a node that is down in a redundant configuration.

1 On a node that is down, login as **ems**.

2 Enter the command: **su root** (Do not use the minus sign.)

3 Execute the following command line:
/ems/etc/rejoin

4 Answer **Y** to all the prompts.

END OF STEPS

□

Procedure 9-18 Halting the sncPkg Package

Purpose This procedure is used to halt the sncPkg package, which will:

- kill the HA_Mgr process and some other process
- stop ER replication
- clean up Event Forwarding directories
- shut down WaveStar SNMS and send an alarm to the console

Before you begin Before you run this procedure, realize the following:

- Halting a sncPkg with the application running in active mode results in not having an active WaveStar SNMS anywhere. Switching of the sncPkg package will not occur. Therefore, use this procedure with caution.
- Halting a sncPkg with the application running in standby mode removes the particular node from redundancy. Package switching does not occurs. To rejoin this node again use *Procedure 9-17 Rejoining a Node in Redundancy*.

Task Use the following steps to halt sncPkg.

1 Login as **root**.

2 To shutdown a running sncPkg on an active node, use the following command line:
cmhaltpkg -n <active node name> sncPkg

Result: The console message `"!! SNMS application is Shutting down!!"` appears.

END OF STEPS

□

Procedure 9-19 Halting the standbyPkg Package

Purpose

This procedure is used to halt the standbyPkg.

Before you begin

Halting the standbyPkg removes this node from the redundancy configuration and switching does not occur.

The package will be halted and disabled and the WaveStar SNMS application will also be shutdown. However, the WaveStar SNMS application can also be shut down using the **dn -x** command on the standby node**.**

Related information

To bring this node back into the redundancy configuration, use *Procedure 9-17 Rejoining a Node in Redundancy.*

Task

Use these steps to halt standbyPkg.

1 Login as **root**.

2 To shutdown a running standbyPkg on nodeS, execute:
cmhaltpkg -n <standby node name> standbyPkg

END OF STEPS

Procedure 9-20 Halting a Node in the MC/ServiceGuard Cluster

Purpose This procedure is used to halt a node in the MC/ServiceGuard cluster, which causes the node to halt its cluster daemon and remove itself from the existing cluster. This procedure also moves all running packages to the standby node if the standby node is ready to receive them.

Related information To bring the node back in the cluster again, use *Procedure 9-17 Rejoining a Node in Redundancy*.

Task Use these steps to halt a node in the MC/ServiceGuard cluster.

1 Login as **root**.

2 To force a node to halt even if packages are running, execute:
cmhaltnode -f

END OF STEPS

□

Procedure 9-21 Enabling/Disabling Package Switching

Purpose This procedure is used to enable and/or disable package switching.

Task Use these steps to enable/disable package switching.

1 Login as **root**.

2 When the cluster status shows that package switching is disabled, which usually occurs true after a failover, execute the following:
cmmodpkg [-e|-d] sncPkg
Where: **-e** is to used to enable and **-d** is used to disable.

3 When the cluster status shows that one node is disabled from running the package (switching the package to it from other node), execute the following to enable/disable it:
cmmodpkg -n node1 [-e|-d] sncPkg
Where: **-e** is to used to enable and **-d** is used to disable.

END OF STEPS

□

Procedure 9-22 Shutting Down a Running Cluster

Purpose This procedure is used to shut down a running cluster.

Before you begin When this procedure is executed, all packages are shut down first and then the cluster is shut down; therefore, proceed with caution.

Task To shut down a running cluster, execute the following:

cmhaltcl -f

END OF STEPS

□

Procedure 9-23 Shutting Down Replication

Purpose This procedure is used to execute er_remove.

Before you begin The er_remove script completely removes replication definitions from all nodes defined in *redstat*.

After er_remove executes, er_status reports on all nodes that are down.

Task Use these steps to run er_remove.

1 Login as user **ems**.

2 Execute the following command:
er_remove

END OF STEPS

□

Procedure 9-24 Checking Application Status

Purpose This procedure is used to check the status of the application with the **showtop** command, which displays the current redundancy topology adopted by this node and the mode in which the WaveStar SNMS application is running.

Task Use these steps to check application status.

1 Login as user **ems**.

2 As user **ems**, run the following command:
showtop

END OF STEPS

□

Procedure 9-25 Checking Replication Status

Purpose

This procedure is used to check the status of **er** with the **er_status** command, which shows the Informix replication status from this node.

Before you begin

All redundancy nodes should have same redundancy information, but the status report will not be exactly the same. If any one of hosts return different redundancy information, some corrective action needs to be performed immediately.

Task

Use these steps to check er_status.

1 Login as user **ems**.

2 Execute the following command:
er_status

END OF STEPS

□

Procedure 9-26 Switching Packages Manually within the Local MC/Service Guard Cluster

Purpose This procedure is used to switch packages manually from the current node to the local standby node within an MC/ServiceGuard cluster.

Before you begin If packages must be switched manually from the current node to the standby node, it must be done carefully. Check whether the receiving standby node is in good health by checking cluster status, application status, and ER status.

Related information To check cluster status, application status, and ER status refer to *Procedure 9-13 Viewing Cluster Status*, *Procedure 9-24 Checking Application Status*, and *Procedure 9-25 Executing er_status*.

Task Use these steps to switch packages manually from the current node to the standby node.

1 Login as **root**.

2 If the switchover should occur within the MC/ServiceGuard cluster, the following commands are recommended:

cmhaltpkg -n <current node> sncPkg
cmmodpkg -e -n <standby node> sncPkg
cmrunpkg -n <standby node> sncPkg

END OF STEPS

□

Procedure 9-27 Switching Packages Manually between Local and Remote Clusters

Purpose

This procedure is used to switch packages manually from the current node to the standby node if a site switchover is needed between local and remote clusters.

Before you begin

If packages must be switched manually from the current node to the standby node, it must be done carefully. Check whether the receiving standby node is in good health by checking cluster status, application status, and ER status.

Related information

To check cluster status, application status, and ER status refer to *Procedure 9-13 Viewing Cluster Status*, *Procedure 9-24 Checking Application Status*, and *Procedure 9-25 Executing er_status*.

If a site switchover is needed (because of an active host failure or a user on-demand request) in a geographic redundancy configuration in which one host is active and the other host is standby, login to the Cluster Administration GUI to do the switchover. Refer to the section titled *Cluster Administration GUI Operations* in the *WaveStar SNMS Administration Guide*.

Task

Use these steps to switch packages manually from the current node to the standby node.

1 Halt the sncPkg running ACTIVE application by executing the following command line:
cmhaltpkg -n <current node> sncPkg

Result: Wait until the halt package command finishes.

2 Log in to the remote host in the other cluster as **ems.**

3 Execute the following command line:
HA_MgrClient -m setOperMode -o ACTIVE

Result: The manual switch over for the active package executes. Do not do a manual switch for the standbyPkg because it is not necessary.

END OF STEPS

Procedure 9-28 Testing for Hardware Failover

Purpose This procedure is used to perform a quick test to determine if a hardware failover has occurred in a redundancy configuration.

Task To perform quick redundancy testing for hardware failover, use these steps.

1 Disconnect primary office LAN connection on active/standby hosts.

2 Disconnect primary OSI LAN connection on active/standby hosts.

3 Disconnect SCSI connection on primary disk array on active/standby hosts.

4 Disconnect both of primary and backup office LAN connections on active hosts.

END OF STEPS

□

Procedure 9-29 Testing for Software Failover

Purpose This procedure is used to perform a quick test to determine if a software failover has occurred in a redundancy configuration.

Before you begin This procedure must be performed on the active host.

Task To perform quick redundancy testing for software failover, use these steps.

1 Kill Orbix daemon by executing the following command lines:
ps -ef | grep orbix
kill -9 <orbix process id>

2 Kill the appmon daemon.

3 Fill the WaveStar SNMS disk space up to 98%.

END OF STEPS

□

A ColdStart Screen Output

Output The following messages are displayed when **./coldStart** is run:

 # login (as root)
 # cd /tmp
 # ./coldStart

```
================================================
START: INSTALLATION Thu Jun 7 15:59:17 EST 2001

EMS SYSTEM INITIALIZATION PROGRAM

This is a fresh start of coldStart
CHECK_POINT=0

The EMS new host initialization is about to begin. You will be
prompted for user information next. After all user input has been
entered, the installation will continue automatically. This process may
take up to 2 hours to complete and should not require user interaction
until completed.

Do you wish to continue with this initialization (y/n/q)? y

EMS_HOST_MODEL_NUM=L200
EMSROOT=/ems
EMS_GID=200
INFORMIX_GID=201
EMS_UID=200
INFORMIX_UID=201
TL1_UID=203
```

---
coldStart performs getInformix() function .....

INFORMIX LICENSE INFORMATION:

License information is required to validate the INFORMIX fileset.

Do you wish to specify INFORMIX license information at this time (y/n/q)? **y**

Please enter the Serial Number for the INFORMIX DynamicServer package: **<ABC>**

You have entered **<ABC>** as INFORMIX DynamicServer Serial Number.
Is this correct?
Press [y] for yes or [n] for no, then press [Return]: **y**

Please enter the Key for the INFORMIX DynamicServer package: **<DEF>**

You have entered <**DEF**> as INFORMIX DynamicServer Key.
Is this correct?
Press [y] for yes or [n] for no, then press [Return]: **y**
---
coldstart performs getDomain() function.....

Please enter your local DNS domain name (blank for none): [Return]

You have entered as local DNS domain name.
Is this correct?
Press [y] for yes or [n] for no, then press [Return]: **y**
INPUT REVIEW
The following is a review of the required information:

1. EMS Home Directory = /ems
2. EMS Group ID (GID) = 200
3. INFORMIX Group ID (GID) = 201
4. EMS User ID (UID) = 200
5. INFORMIX User ID (UID) = 201
6. TL1 User ID (UID) = 203
7. INFORMIX DynamicServer Serial Number = **<ABC>**
8. INFORMIX DynamicServer Key= **<DEF>**
9. Local DNS Domain Name =

WARNING

If communicating with ITM-NM (SONET), the Local DNS Domain Name MUST NOT be set.

Enter the item number [1-9] to change the current value.
Enter "s" to save the above input and continue.

What would you like to do [1-9 or s][q to quit]: s

EMS System Initialization will continue automatically.
Check /tmp/coldStart.log file for logged messages.

---

coldStart performs setUpGroup() function .....

Setting up groups.....

---

coldStart performs setUpUser() function .....

Setting up user logins.....

---

coldStart performs setUpInformix() function .....

Installing DynamicServer license will take about 10 minutes!

Informix Dynamic Server Version 7.31.UC3
Copyright (C) 1986-1999 Informix Software, Inc.

Installation and Configuration Script

This installation procedure must be run by a privileged user (Super User)
It will change the owner, group, mode, (and other file attributes on Secure systems) of all files of this package in this directory.

There must be a user "informix" and a group "informix" known to the system.

Press RETURN to continue,
or the interrupt key (usually CTRL-C or DEL) to abort.

Enter your serial number (for example, INF#X999999) >
Enter your serial number KEY (uppercase letters only) >

WARNING!
This software, and its authorized use and number of users, are subject to the applicable license agreement with Informix Software, Inc. If the number of users exceeds the licensed number, the excess users may be prevented from using the software. UNAUTHORIZED USE OR COPYING MAYSUBJECT YOU AND YOUR COMPANY TO SEVERE CIVIL AND CRIMINAL LIABILITIES.

Press RETURN to continue,
or the interrupt key (usually CTRL-C or DEL) to abort.

Installing directory .
Installing directory aaodir
Installing directory bin
Installing directory snmp
Installing directory snmp/snmpr
Installing directory snmp/peer
Installing directory dbssodir
Installing directory lib
Installing directory lib/csm
Installing directory msg
Installing directory msg/en_us
Installing directory msg/en_us/0333
Installing directory etc
Installing directory incl
Installing directory incl/hpl
Installing directory incl/esql
Installing directory release
Installing directory release/en_us
Installing directory release/en_us/0333
Installing directory forms
Installing directory demo
Installing directory demo/dbaccess
Installing directory hhelp
Installing directory hhelp/xprinter
Installing directory hhelp/xprinter/FontMetrics
Installing directory hhelp/xprinter/FontMetrics/AFM
Installing directory hhelp/xprinter/FontMetrics/TFM
Installing directory hhelp/xprinter/PCLPPDS
Installing directory hhelp/xprinter/PPDS
Installing directory hhelp/xprinter/PSPPDS
Installing directory ism
Installing directory gls
Installing directory gls/cm3

```
Installing directory gls/cv9
Installing directory gls/lc11
Installing directory gls/lc11/cs_cz
Installing directory gls/lc11/da_dk
Installing directory gls/lc11/de_at
Installing directory gls/lc11/de_ch
Installing directory gls/lc11/de_de
Installing directory gls/lc11/en_au
Installing directory gls/lc11/en_gb
Installing directory gls/lc11/en_us
Installing directory gls/lc11/es_es
Installing directory gls/lc11/fi_fi
Installing directory gls/lc11/fr_be
Installing directory gls/lc11/fr_ca
Installing directory gls/lc11/fr_ch
Installing directory gls/lc11/fr_fr
Installing directory gls/lc11/is_is
Installing directory gls/lc11/it_it
Installing directory gls/lc11/ja_jp
Installing directory gls/lc11/ko_kr
Installing directory gls/lc11/nl_be
Installing directory gls/lc11/nl_nl
Installing directory gls/lc11/no_no
Installing directory gls/lc11/os
Installing directory gls/lc11/pl_pl
Installing directory gls/lc11/pt_br
Installing directory gls/lc11/pt_pt
Installing directory gls/lc11/ru_ru
Installing directory gls/lc11/sk_sk
Installing directory gls/lc11/sv_se
Installing directory gls/lc11/th_th
Installing directory gls/lc11/zh_cn
Installing directory gls/lc11/zh_tw
Installing directory bit maps

Installing Shared Libraries in System Directories ...

Linking /usr/lib/iosm07a.sl from lib/iosm07a.sl

Linking /usr/lib/ipldd07a.sl from lib/ipldd07a.sl

Installation of Informix Dynamic Server complete.

Done for installing DynamicServer!!!
```

Installing IECC license will take about 5 minutes!

Installation Script

This installation procedure must be run by root (super-user).
It will change the owner, group, and mode of all files of this
package in this directory. There must be a user "informix" and a
group "informix" known to the system.

Press RETURN to continue,
or the interrupt key (usually CTRL-C or DEL) to abort.

Enter your serial number (for example, INF#X999999) >
Enter your serial number KEY (uppercase letters only) >

WARNING!
This software, and its authorized use and number of users, are subject to the applicable license agreement with Informix Software, Inc. If the number of users exceeds the licensed number, the excess users may be prevented from using the software. UNAUTHORIZED USE OR COPYING MAY SUBJECT YOU AND YOUR COMPANY TO SEVERE CIVIL AND CRIMINAL LIABILITIES.

Press RETURN to continue,
or the interrupt key (usually CTRL-C or DEL) to abort.

Installing directory .
Installing directory bin
Installing directory lib
Installing directory msg
Installing directory msg/en_us
Installing directory msg/en_us/0333
Installing directory release
Installing directory release/en_us
Installing directory release/en_us/0333
Installing directory etc

Installing Shared Libraries in System Directories ...

Linking /usr/lib/liborb_r.sl from lib/liborb_r.sl

Installation of INFORMIX-Enterprise Command Center complete.

Done for installing IECC!!!
---
coldStart performs setUpOrbix() function .....

```
Install Orbix License.....

Orbix Daemon v3.0.1 (PATCH_60)
s1477-3.0.1 (PATCH_60): Orbix Version v3.0.1 (PATCH_60)  for HP
aCC A.03.13 on HP/UX 11.00

Implementation Repository Path    :/ems/Orbix/config/Repositories/
ImpRep
Daemon Port                  :1570
Daemon Port Base               :1590
Daemon Port Range              :1000
Orbix Errors File             :/ems/Orbix/config/ErrorMsgs
Orbix Locator Path             :/ems/Orbix/config/
Interface Repository Path       :/ems/Orbix/Interfaces
Local Host                  :oz
Local domain                 :

Java Interpreter              :/ems/Orbix/bin/jre
Default Classpath              :/ems/Orbix/config/:/ems/Orbix/lib/
classes.zip:/ems/Orbix/bin/NSclasses.zip:/ems/Orbix/lib/rt.jar:/ems/
Orbix/bin/orbixweb.jar:/ems/Orbix/tools/NamingServiceGUI/
marimba.zip:/ems/Orbix/tools/NamingServiceGUI/bongo.zip:/ems/
Orbix/tools/NamingServiceGUI/NSGUI.jar

Done for installing Orbix!!!
------------------------------------------------------------------------
coldStart performs setCronAt() function .....
------------------------------------------------------------------------
coldStart performs chgFSPerm() function .....
Set file system ownership, group and permission
------------------------------------------------------------------------

coldStart performs setUpFTP() function .....
Adding FTP related entries into /etc/passwd and /etc/group
Creating new home directory for FTP user
Setting up FTP home directory

Check /tmp/coldStart.log file for logged messages.

END: INSTALLATION Thu Jun  7 16:02:30 EDT 2001
```

B init_disk Scenario

Init_disk help and examples

The init_disk script enables you to work with standard and non-standard client configurations. Non-standard configurations are disk configurations that meet the total capacity requirement and have at least as many physical disks as volume groups. For example, having many 4Gb disks and the proper total capacity is a possibility. Conversely, meeting the capacity requirement with two 35Gb disks does not suffice.

Starting init_disk

Init_disk uses the **script** command to save its output into a log file. The **script** command cannot run in the background—that is, it cannot be coded like **script &** in the init_disk script, which means that you need to start init_disk twice, if **script** is not running:

- During the first run, init_disk starts the script and exits.
- During the second run, init_disk detects whether the **script** command is running. It does not restart it again and begins the configuration task.

Init_disk has a **-t** option, which is used for testing. When **-t** is used, init_disk, does not configure the disk—it displays messages and creates undo_disk scripts based on the configuration. If you removed the undo_disk files, but you need them, use **-t** to re-create it (assuming you did not change the hardware and the configuration file).

Checking The Hardware Configuration

When started, init_disk collects and displays all hardware system data, which includes CPU, memory, disks, and LAN card parameters. If init_disk was run before, you can review and use the saved parameters or let init_disk re-collect the data.

After the hardware and memory are checked, init_disk checks the disks and lists the disk path, size, and disk usage (y or n). Below is a sample output from an ST system:

```
/dev/rdsk/c0t3d0     8891556     n
/dev/rdsk/c0t4d0     8891556     n
/dev/rdsk/c0t5d0     8891556     n
/dev/rdsk/c0t6d0     8891556     n
/dev/rdsk/c1t3d0     8891556     n
/dev/rdsk/c1t4d0     8891556     n
/dev/rdsk/c1t6d0     8891556     y
```

Disk Configuration Templates

For each supported machine model, a disk template configuration file is delivered with init_disk. This file is based on the hardware configuration requirement. At run time, init_disk selects the default template configuration based on the machine model and the number of CPUs described in the requirement.

Saved Master Configuration File or User Supplied Configuration File

If init_disk was previously run and a master configuration file was saved, init_disk asks whether the saved configuration file or the default template configuration file should be used. If neither file should be used, specify the path of a different configuration file. Once a configuration file is specified, a temporary file is created for review and modification.

The templates are stored under /tmp. The names appear as a form of *disk_temp.* (Use the * for the many configurations.) The default templates for K-Class servers are for 9G disks. However, if the machine has 18G disks, the templates for 18G disks are to be used.

For example: the default template for a K380 with one CPU is /tmp/disk_temp.K380X1. If that system has 18G disks, the template to use is /tmp/disk_temp.K380X1_18G. The script asks if the default template is to be used. In this case, that answer would be **n**. The full path of the 18G template must be given.

Review and Modify the Configuration File

During an init_disk session, you can review and modify the temporary configuration file selected.

After the temporary configuration is modified and saved, **init_disk** validates its contents, which includes the syntax and the availability of disks and amount of disk space available for each volume group. Init_disk displays the validation results and you can modify the configuration file again. If the configuration file is error free, you can save it as the master configuration file. The modification, validation, and updating of the master configuration file continues until you decide that the process is complete. Once the process is complete, init_disk configures the disk based on the contents of the master configuration file. The results of each step are displayed.

Undo_disk

The undo_disk script is generated while creating the disk configuration. If the disks need to be restored to the configuration that existed before the init_disk was performed, run undo_disk to undo init_disk.

Tailor the Disk Configuration

You can tailor your disk configuration by modifying the disk configuration file. The following section provides you the definition and syntax of the disk configuration file.

Disk Configuration File Syntax

The disk configuration file syntax is as follows:

- A line starts with # is a comment line. It is ignored.
- Each row has four parameters.
  - The first parameter defines the volume group number, such as VG00, VG01
  - The second parameter defines the mount point or directory, such as ems, reports, dbsp2_1G, dbsp2_1G. The first character cannot be a /. (You can specify ems and tools, but not /ems and /tools.)
  - The third parameter defines the size (in M-bytes) of the disk space that the second parameter requires.

– The fourth parameter defines a keyword. Valid keywords are: data, dbspace, home, omni, pmspace, reports, tools, vgroup, vgdisk. Each keyword indicates the usage of the space.

  data is for /data.

  home is for /ems.

  reports is for /reports.

  tools is for /tools.

  omni is for /var/opt/omni.

  dbspace is for database space.

  pmspace is for performance monitoring space.

  vgroup is for volume group. If Type is *vgroup*, the size (the third parameter) specifies the total disk size required for the vgroup and the second parameter should be a - (dash). For each vgroup (VG01), one and only one entry with type vgroup must be specified, which is the first entry of that volume group.

  vgdisk is for disk assignment, which is an optional entry. If *vgdisk* is not specified for a *vgroup*, init_disk automatically selects and assigns the disk for that volume group. If *vgdisk* is specified, the second parameter must be a pv_path (e.g., c0t1d0) that is the block device path name of a physical volume and the size should be a - (dash). Once a disk (e.g., c0t2d0) is used in a vgdisk assignment, it is not selected by init_disk in the automatic select mode; meaning, init_disk does not assign the disk (e.g., c0t2d0) to other volume groups unless it is explicitly used in a vgdisk of another vgroup.

Allocate More than One Disks for One Volume Group

You can allocate more than one disk for one volume group. For example, you can use **vgdisk** to assign two disks (c0t3d0 and c0t4d0) for one vgroup (VG02).

```
VG02   -          9000   vgroup
VG02   c0t3d0     -      vgdisk
VG02   dbsp1_1G   1000   dbspace
VG02   pmsp1_2G   2000   pmspace
VG02   c0t4d0     -      vgdisk
VG02   pmsp2_2G   1000   pmspace
VG02   pmsp3_2G   1000   pmspace
```

In this example, disk c0t3d0 is used by volume group VG02 and dbsp1_1G and pmsp1_2G are allocated on c0t3d0. Also disk c0t4d0 is used by volume group VG02 and pmsp2_2G and pmsp3_2G are allocated on c0t4d0.

The order of the vgdisk row and the dbspace and pmspace rows are important. A dbspace or a pmspace gets space allocated to the disk assigned by a vgdisk (or assigned by init_disk automatically) that appears right before the dbspace or a pmspace line.

In this example, c0t3d0 and c0t4d0 are not assigned by init_disk for other vgroups. Make sure that the total disk space of c0t3d0 and c0t4d0 are fully used. You can assign c0t3d0 and c0t4d0 to other vgroups via the vgdisk statement.

Once a vgdisk is used in a vgroup, you must explicitly assign the disk for all mount points or directories (all second parameters), which means the following is an error, because automatic disk assignment and explicit disk assignment cannot be mixed:

```
VG02   -          9000   vgroup
#VG02  c0t3d0      -     vgdisk --- commented out or does not exist
VG02   dbsp1_1G    1000  dbspace
VG02   pmsp1_2G    2000  pmspace
VG02   c0t4d0      -     vgdisk
VG02   pmsp2_2G    1000  pmspace
VG02   pmsp3_2G    1000  pmspace
```

Allocate Space of One Disk for More than One Volume Group

You cannot use the **vgdisk** to assign one disk for more than one **vgroups**. For example, the following is an error:

```
VG02   -          9000   vgroup
VG02   c0t3d0      -     vgdisk
VG02   dbsp1_1G    1000  dbspace
VG02   pmsp1_2G    2000  pmspace
VG02   pmsp2_2G    1000  pmspace
VG02   pmsp3_2G    1000  pmspace
#
VG03   -          9000   vgroup
VG03   c0t3d0      -     vgdisk
VG03   dbsp2_1G    1000  dbspace
```

```
VG03    dbsp3_2G       1000    dbspace
VG03    pmsp4_2G        1000    pmspace
VG03    pmsp5_2G        2000    pmspace
```

For a redundancy configuration, specify the **pv_path** of the primary and secondary disks for all volume groups. The keywords are **vgdiskpri** and **vgdisksec**.

You also can specify swap space in the configuration. The keyword is **swap**. The **init_disk** utility only performs a limited validation for redundancy configurations.

Several redundancy configuration templates are provided with **init_disk**. It is better to modify a proper template for your system before starting **init_disk** and copying the configuration to /startup/disk_cfg and then start **init_disk**.

□

C WaveStar SNMS New Installation Input/Output

Installing installEms

The following pages show screen displays that appear during a new installation of the WaveStar SNMS application:

#login as root
installEms

InstallEms is checking Hardware, please be patient!

The current EMS run level is "Shutdown".

==========

EMS INSTALLATION AND CONFIGURATION PROGRAM
02-15-01

Current EMS Version: 6.0.0-128

Main Menu:
1) Backup the current EMS database & configuration settings
2) Restore a previously saved EMS database & configuration settings
3) Install/Upgrade EMS software
4) Configure EMS - making the provisioned parameters effective
5) Configure EMS using profile saved from last session
6) Configure Redundancy
7) Display EMS system information
8) Reenter ATOS licence
0) Exit

NOTE: Root permission ("su" without -) is required for all tasks

Specify your choice by number: **3**

The EMS Application installation is about to begin. This process may take up to 2 hours to complete and should not require any further user interaction.

Do you wish to continue with this installation (y/n)? **y**

WARNING:
The EMS Application database should be backed up prior to upgrading the software.

Do you wish to backup the EMS application database(y/n/q)? **n**

User bypassed backup prior to performing the upgrade
OLDVER=(5.1) NEWVER=(5.1)

Starting the APPLICATION LOADING process ...

What software media will be used to load the EMS Application:

1. CD-ROM
2. Digital Audio Tape (DAT)

Please enter the software media type [1/2/q]? **<1 or 2>**

Saving existing SNMS setup files ...

Saving the existing setup files ...
If this is an upgrade operation, it will destroy existing
files in the following directories:
bin,
tbin,
lib,
etc
Orbix/Interfaces

However, existing setup files have been saved for you to restore later.

Are you ready to proceed? (y) to proceed, <CR> to skip, or (q) to quit: **y**

Removing files from /ems/dt_bin ...
Removing files from /ems/bin ...
Removing files from /ems/Orbix/Interfaces ...
Removing files from /ems/tbin ...

Removing files from /ems/lib ...
Removing files from /ems/etc ...
Write-protect the delivery tape and put it in the tape drive.

Hit <CR> to continue .....

Reading table of content on Tape ....

This MEDIA contains the following filesets:

FILESET	SIZE(KB)	DESCRIPTION
l	0.0	
SNMS.snms-install.snmsInstall	124.8	“SNMS installation software”
SNMS.snms-install.snmslibc	1656.6	“Shared Library”
SNMS.snmsFixDir.snmsInterfaces	977.6	“interface files for Orbix”
SNMS.snmsFixDir.snmsRogue	2688.7	“RogueWave library for SNMS”
SNMS.snmsLocConf	239.0	'”Local SNMS tbin area”
SNMS.snmsRelease.snms	1505027.7	“snms application software”
EMSROOT	1505027.7	
/tools	3666.3	
Total	1508694.0	

Available space at /ems is: 4163032 Kbytes

Going ahead with the assumption that space is OK.

The new EMS files will be installed ...

Are you ready to proceed? (y) to proceed, <CR> to skip, or (q) to quit: **y**

======= 01/29/01 14:49:11 EST BEGIN swinstall SESSION
(non-interactive)

* Session started for user "root@neptune".

* Beginning Selection
* Target connection succeeded for "neptune:/".
* Source connection succeeded for

```
   “/dev/rmt/0m”
* Source:              /dev/rmt/0m
* Targets:             neptune:/
* Software selections:
        SNMS.snmsInterfaces,r=5.1
        SNMS.snmsRogue,r=5.1
* Selection succeeded.

* Beginning Analysis
* Session selections have been saved in the file
  "/var/adm/sw/sessions/swinstall.last".
WARNING: "neptune:/":  There will be no attempt to mount
filesystems that appear in the filesystem table.
* Analysis succeeded.

* Beginning Execution
* The execution phase succeeded for "neptune:/".
* Execution succeeded.

NOTE:    More information may be found in the agent logfile (location
is neptune:/var/adm/sw/swagent.log).

== 01/29/01 14:49:51 EST  END swinstall SESSION (non-interactive)

OS and Package files loaded.

== 01/29/01 14:49:51 EST  BEGIN swinstall SESSION (non-
interactive)

* Session started for user "root@neptune".

* Beginning Selection
* Target connection succeeded for "neptune:/ems".
* Source connection succeeded for
    “dev/rmt/0m”
* Source:              /dev/rmt/0m
* Targets:             neptune:/ems
* Software selections:
        SNMS.snms,r=5.1
* Selection succeeded.

* Beginning Analysis
* Session selections have been saved in the file
  "/var/adm/sw/sessions/swinstall.last".
WARNING: "neptune:/ems":  There will be no attempt to mount
```

filesystems
that appear in the filesystem table.
* Analysis succeeded.

* Beginning Execution
WARNING: "neptune:/ems": 1 postinstall or postremove scripts had warnings.
* Execution succeeded.

NOTE: More information may be found in the agent logfile (location is neptune:/ems/var/adm/sw/swagent.log).

== 01/29/01 15:00:53 EST END swinstall SESSION (non-interactive)

WaveStar SNMS release files are loaded.
ems
neptune m

Setting up .profile for user tl1 ...

Starting the EMS PROVISIONING process ...

At this time, you may choose a new set of environment parameters for the new SNMS configuration.

WARNING:
The EMS new host Informix Database configuration is about to begin. The Informix Database configuration will use socket instead of share memory. Please adjust your Name Service Switch accordingly.

Do you want to continue this process (y/n/q): **n**

Skip Informix Database configuration!

Press [ENTER] to continue.
The following LAN interface(s) have been detected:
lan 0 0/0/0/0 btlan3 CLAIMED INTERFACE PCI Ethernet (10110019)
lan 3 0/8/0/0 btlan5 CLAIMED INTERFACE PCI Ethernet (10110019)
lan 4 0/10/0/0 btlan5 CLAIMED INTERFACE PCI Ethernet (10110019)

Press [Enter] to continue
1. Network Service Attatchment Point (NSAP) forms (Fixed/Flexible)?: **Fixed**

2. Activate SONET Directory Services (y/n)?: **Y**

3. NE PROTOCAL INFORMATION

The current configuration is displayed:

CMISE: (y/n) **Y**
OSI TL1: (y/n) **Y**
X.25 TL1: (y/n) **Y**

4. Double Acknowledgement Feature (Enabled/Disabled)? **Enabled**

Please enter the item number [1-4] to make change.
Enter "s" to save the above input and continue.
Enter "q" to quit. **s**

The current OSI Configuration is summarized as following:

1. lan 0 0/0/0/0 - N/C
2. lan 3 0/8/0/0 - Primary 000000 0000 DD00
3. lan 4 0/10/0/0 - N/C

Please use the following menu to customize your local configuration

1. Primary OSI LAN interface number= 2
2. Organization Identifier= 000000
3. Routing Domain= 0000
4. OSI Area= DD00
5 OSI Lan Redundancy is not configured.
6. IP address for OSI over TCP/IP= 172016016100

Enter the item number [1-6] to change the current value.
Enter "s" to save the above input and continue.
What would you like to do [1-6, or s] [q to quit]: ***s***
CMISE INFORMATION REVIEW

The following is a review of Network Element protocol information:

1. EMS Name = ems123
2. Presentation Selector = 70737431
3. Session Selector = 73657331
4. Transport Selector = 747030
5. OLS-400G Support = YES

Enter the item number [1-5] to change the current value.
Enter "s" to save the above input and continue.
What would you like to do [1-5, or s] [q to quit]: **s**

DIB PREFIX REVIEW:

The following is a review of DIB prefix:

1. DIB Country Name prefix = US
2. DIB Organization Name prefix = LUCENT
3. DIB Organization Unit Name prefix = SNMS1;SNMS2

Enter the item number [1-3] to change the current value.
Enter "s" to save the above input and continue.
What would you like to do [1-3, or s] [q to quit]: **s**
Accept the current configuration (y/n/q)? **y**

Saving the configuration.....Configuration saved.

Your SNMS environment:

APPTAG	= EMS
EMSROOT	= /ems
APPCONFIG	= /ems/etc/appconfig
APPMON_PORT	= 7578
ROAMLOG	= /ems/log/data

Running Setup from scratch.
EMS is being reconfigured.

Successful Validation. Created appconfig from appconfig.t

Change permission of files.....

The following directories are currently defined for PM data collection -

/reports/pm

Do you wish to change the list of PM directories(y/n)? **n**

Creating link for ALLMETRO...

Creating link for OXC_LR...

Done creating links

After installEms exited, you may be logged out automatically.
If not, logout yourself. Login again as a EMS user, then
start SNMS with the "up" command.

Thank you for using "installEms"!

Configuring install_Ems

InstallEms is checking Hardware, please be patient!

The current EMS run level is "Shutdown".

==========

EMS INSTALLATION AND CONFIGURATION PROGRAM
02-15-01

Current EMS Version: 6.0.0-128

Main Menu:
1) Backup the current EMS database & configuration settings
2) Restore a previously saved EMS database & configuration settings
3) Install/Upgrade EMS software
4) Configure EMS - making the provisioned parameters effective
5) Configure EMS using profile saved from last session
6) Configure Redundancy
7) Display EMS system information
8) Reenter ATOS license
0) Exit

NOTE: Root permission ("su" without -) is required for all tasks

Specify your choice by number: **4**

Starting the EMS PROVISIONING process ...

At this time, you may choose a new set of environment parameters for the new SNMS configuration.

WARNING:

The EMS new host Informix Database configuration is about to begin. The Informix Database configuration will use socket instead of share memory. Please adjust your Name Service Switch accordingly.

Do you want to continue this process (y/n/q): **y**

You have mail.

Your SNMS environment:
APPTAG = EMS
EMSROOT = /ems
APPCONFIG = /ems/etc/appconfig
APPMON_PORT= 7578
ROAMLOG = /ems/log/data

Set up coniguration files...
How many CPUs available in this machine (default 1, q to quit):
mv: /tools/informix/etc/onconfig: cannot access: No such file or directory
Reinitialize informix online...
Waiting for system related databases to be built...

Parse configuration file and start to create dbspaces ...
Verifying physical disk space, please wait ...
Space successfully added.

** WARNING ** A level 0 archive of Root DBSpace will need to be done.
Verifying physical disk space, please wait ...
Space successfully added.

** WARNING ** A level 0 archive of Root DBSpace will need to be done.
Verifying physical disk space, please wait ...
Space successfully added.

** WARNING ** A level 0 archive of Root DBSpace will need to be done.
Verifying physical disk space, please wait ...
Space successfully added.

** WARNING ** A level 0 archive of Root DBSpace will need to be done.
Verifying physical disk space, please wait ...
Space successfully added.

** WARNING ** A level 0 archive of Root DBSpace will need to be done.
Verifying physical disk space, please wait ...
Space successfully added.
Verifying physical disk space, please wait ...
Space successfully added.

** WARNING ** A level 0 archive of Root DBSpace will need to be done.
Verifying physical disk space, please wait ...
Space successfully added.

** WARNING ** A level 0 archive of Root DBSpace will need to be done.
Verifying physical disk space, please wait ...
Space successfully added.

** WARNING ** A level 0 archive of Root DBSpace will need to be done.
Verifying physical disk space, please wait ...
Space successfully added.

** WARNING ** A level 0 archive of Root DBSpace will need to be done.
Verifying physical disk space, please wait ...
Chunk successfully added.

Verifying physical disk space, please wait ..
Chunk successfully added
Verifying physical disk space, please wait ...
Chunk successfully added
Verifying physical disk space, please wait ...
Space successfully added.

** WARNING ** A level 0 archive of Root DBSpace will need to be done.
Verifying physical disk space, please wait ...
Chunk successfully added.
Verifying physical disk space, please wait ...
Chunk successfully added.
Verifying physical disk space, please wait ...
Chunk successfully added.
Verifying physical disk space, please wait ...

Chunk successfully added.
Verifying physical disk space, please wait ...
Chunk successfully added.
Verifying physical disk space, please wait ...
Chunk successfully added.
Verifying physical disk space, please wait ...
Chunk successfully added.
Re-start Informix Online ...

11 dbspace(s) created and 10 chunks added successfully
++

Informix configuration completed.

You have to re-login as ems to establish variables before move-on.

++

logout

Press [ENTER] to continue. **Enter**

The following LAN interface(s) have been detected:

lan 0 0/0/0/0 btlan3 CLAIMED INTERFACE PCI Ethernet (10110019)
lan 2 0/2/0/0 btlan5 CLAIMED INTERFACE PCI

Ethernet (10110019)
lan 1 0/6/0/0 btlan5 CLAIMED INTERFACE PCI Ethernet (10110019)

Press [Enter] to continue: **Enter**
1. Network Service Attatchment Point (NSAP) forms (Fixed/ Flexible)?: **Fixed**

2. Activate SONET Directory Services (y/n)?: **Y**

3. NE PROTOCAL INFORMATION

The current configuration is displayed:

CMISE: (y/n) **Y**
OSI TL1: (y/n) **Y**
X.25 TL1: (y/n) **Y**

Please enter the item number [1-3] to make change.
Enter "s" to save the above input and continue.
Enter "q" to quit. **s**
The current OSI Configuration is summarized as following:

1. lan 0 0/0/0/0 - N/C
2. lan 2 0/2/0/0 - Primary 000000 0000 0000
3. lan 1 0/6/0/0 - N/C

Please use the following menu to customize your local configuration

1. Primary OSI LAN interface number= 2
2. Organization Identifier= 000000
3. Routing Domain= 0000
4. OSI Area= 0000
5 OSI Lan Redundancy is configured. Redunant OSI Lan interface = 3
6. IP address for OSI over TCP/IP= 135017013220

Enter the item number [1-6] to change the current value.
Enter "s" to save the above input and continue.
What would you like to do [1-6, or s] [q to quit]: **s**

CMISE INFORMATION REVIEW

The following is a review of Network Element protocol information:

1. EMS Name = ems123
2. Presentation Selector = 70737431
3. Session Selector = 73657331
4. Transport Selector = 747030
5. OLS-400G Support = YES

Enter the item number [1-5] to change the current value.
Enter "s" to save the above input and continue.
What would you like to do [1-5, or s] [q to quit]: **s**

DIB PREFIX REVIEW:

The following is a review of DIB prefix:

1. DIB Country Name prefix = US
2. DIB Organization Name prefix = LUCENT
3. DIB Organization Unit Name prefix = SNMS1;SNMS2

Enter the item number [1-3] to change the current value.
Enter "s" to save the above input and continue.
What would you like to do [1-3, or s] [q to quit]: **s**
Accept the current configuration (y/n/q)?**y**

Saving the configuration.....Configuration saved.

Your SNMS environment:
APPTAG = EMS
EMSROOT = /ems
APPCONFIG = /ems/etc/appconfig
APPMON_PORT= 7578
ROAMLOG = /ems/log/data

Running Setup from scratch.
EMS is being reconfigured.

Successful Validation. Created appconfig from appconfig.t

Change permission of files.....

The following directories are currently defined for PM data collection -

/reports/pm

Do you wish to change the list of PM directories(y/n)? **n**

After installEms exited, you may be logged out automatically.
If not, logout yourself. Login again as a EMS user, then
start SNMS with the "up" command.

Thank you for using "installEms"!

D rejoin Command Execution Screen Output

Screen Output

The following pages show screen output that appears during the **rejoin** command execution:

```
# /ems/etc/rejoin
Checking application status...
Get topology file and resync on all hosts...
Establishing connection to HA_Mgr.
Resync Database...
(c)Copyright 1983-1997 Hewlett-Packard Co.,  All Rights Reserved.
(c)Copyright 1979, 1980, 1983, 1985-1993 The Regents of the Univ. of
California
(c)Copyright 1980, 1984, 1986 Novell, Inc.
(c)Copyright 1986-1992 Sun Microsystems, Inc.
(c)Copyright 1985, 1986, 1988 Massachusetts Institute of Technology
(c)Copyright 1989-1993The Open Software Foundation, Inc.
(c)Copyright 1986 Digital Equipment Corp.
(c)Copyright 1990 Motorola, Inc.
(c)Copyright 1990, 1991, 1992 Cornell University
(c)Copyright 1989-1991 The University of Maryland
(c)Copyright 1988 Carnegie Mellon University=
(c)Copyright 1991-1997 Mentat, Inc.
(c)Copyright 1996 Morning Star Technologies, Inc.
(c)Copyright 1996 Progressive Systems, Inc.
(c)Copyright 1997 Isogon Corporation
```

RESTRICTED RIGHTS LEGEND

Use, duplication, or disclosure by the U.S. Government is subject to restrictions as set forth in sub-paragraph (c)(1)(ii) of the Rights in Technical Data and Computer Software clause in DFARS 252.227-7013.

Hewlett-Packard Company
3000 Hanover Street
Palo Alto, CA 94304 U.S.A.

Rights for non-DOD U.S. Government Departments and Agencies are as set forth in FAR 52.227-19(c)(1,2).

Your SNMS environment:
APPTAG = EMS
EMSROOT = /ems
APPCONFIG = /ems/etc/appconfig
APPMON_PORT= 7578
ROAMLOG = /ems/log/data

Establishing connection to HA_Mgr.
Resync start at Tue Jun 26 14:13:41 EDT 2001.....
Bring informix down ....
Bring informix up ....
er_status is DOWN, Skipped ER remove...
Running buildsmi ....
Bring informix down ....
Bring informix up ....
Dropping/Create database on STANDBY HOST (luna)...
ReConfig ER ...
ER Configuration between lahore and luna (as), (y/n)?y
ER Configuration between lahore and luna ...
Config module: EAPP
Config module: FM
Config module: LM
Config module: NM
Config module: CF
Config module: SDS
Config module: SM
Config module: UI
Config module: CFS1 CFS2 CFS3
Config module: PM1
Config module: PM2
Config module: PM3

```
Config module: PM4
Config module: PM5
Config module: NCI
Start replication...
Suspending replication to luna...
Do you need to do database resync ? (y/n) y
The data resync process might take hours to complete...
Unloading/Loading data...
directory lahore:/reports/resync not found, so created...
directory luna:/reports/resync not found, so created...
Do all snms copy w/o skip tables...
Clean ...
copybytable ems_db cf_ne2db 2
4 unloaded/4 loaded
copybytable ems_db cf_global_prov 2
3 unloaded/3 loaded
copybytable ems_db nt_trail 10
4 unloaded/4 loaded
copybytable ems_db nt_xcgroup 5
0 unloaded/skip loading
copybytable ems_db nt_userxc 12
0 unloaded/skip loading
copybytable ems_db ne_ne 36
4 unloaded/4 loaded
copybytable ems_db ne_subnet 6
4 unloaded/4 loaded
copybytable ems_db ne_dccsn 4
4 unloaded/4 loaded
copybytable ems_db ne_sonetnetwrk 2
1 unloaded/1 loaded
copybytable ems_db fm_dbactivelog 17
6 unloaded/6 loaded
copybytable ems_db fm_dbiafparams 5
0 unloaded/skip loading
copybytable ems_db fm_dbusam 9
0 unloaded/skip loading
copybytable ems_db fm_lastmessage 14
1 unloaded/1 loaded
copybytable ems_db fm_preference 3
7 unloaded/7 loaded
copybytable ems_db sm_user 20
3 unloaded/3 loaded
copybytable ems_db sm_cmddict 10
```

```
1544 unloaded/1544 loaded
copybytable ems_db sm_cmdgrp 2
7 unloaded/7 loaded
copybytable ems_db sm_cmdgrpdict 2
0 unloaded/skip loading
copybytable ems_db sm_tgtgrp 2
2 unloaded/2 loaded
copybytable ems_db sm_tgtgrpdict 2
0 unloaded/skip loading
copybytable ems_db sm_neuser 4
9 unloaded/9 loaded
copybytable ems_db sm_secparams 8
1 unloaded/1 loaded
copybytable ems_db oam_schedinfo 19
0 unloaded/skip loading
copybytable ems_db oam_schedstat 5
0 unloaded/skip loading
copybytable ems_db oam_prntgrp 4
0 unloaded/skip loading
copybytable ems_db oam_pmfiles 6
0 unloaded/skip loading
copybytable ems_db lm_ps_neevent 12
0 unloaded/skip loading
copybytable ems_db sds_prefix 4
3 unloaded/3 loaded
copybytable ems_db sds_ne 10
3 unloaded/3 loaded
copybytable ems_db sds_ae 6
3 unloaded/3 loaded
copybytable ems_db ui_cpack 7
0 unloaded/skip loading
copybytable ems_db ui_node 4
0 unloaded/skip loading
copybytable ems_db ui_view 3
0 unloaded/skip loading
copybytable ems_db ui_aggr 4
0 unloaded/skip loading
copybytable ems_db ui_aggrchild 4
0 unloaded/skip loading
copybytable ems_db ui_user 4
2 unloaded/2 loaded
copybytable ems_db ui_usrrpt 5
0 unloaded/skip loading
```

```
copybytable ems_db ui_dbactivelog 21
0 unloaded/skip loading
copybytable ems_db eapp_fmprofile 6
97 unloaded/97 loaded
copybytable ems_db eapp_fmnemap 6
14 unloaded/14 loaded
copybytable ems_db eapp_pmprofile 7
30 unloaded/30 loaded
copybytable ems_db eapp_pmnemap 6
12 unloaded/12 loaded
copybytable cf_db1 snc_assoc 12
0 unloaded/skip loading
copybytable cf_db1 snc_bay 15
1 unloaded/1 loaded
copybytable cf_db1 snc_cktpack 14
11 unloaded/11 loaded
copybytable cf_db1 snc_ctp 12
214 unloaded/214 loaded
copybytable cf_db1 snc_ctpattribute 4
1536 unloaded/1536 loaded
copybytable cf_db1 snc_discrete 4
0 unloaded/skip loading
copybytable cf_db1 snc_discattribute 4
0 unloaded/skip loading
copybytable cf_db1 snc_element 20
2 unloaded/2 loaded
copybytable cf_db1 snc_eqptattribute 4
1731 unloaded/1731 loaded
copybytable cf_db1 snc_neattribute 4
22 unloaded/22 loaded
copybytable cf_db1 snc_port 9
0 unloaded/skip loading
copybytable cf_db1 snc_portattribute 4
0 unloaded/skip loading
copybytable cf_db1 snc_pgattribute 4
31 unloaded/31 loaded
copybytable cf_db1 snc_protgroup 6
4 unloaded/4 loaded
copybytable cf_db1 snc_shelf 16
1 unloaded/1 loaded
copybytable cf_db1 snc_slot 19
26 unloaded/26 loaded
copybytable cf_db1 snc_ttp 12
```

```
14 unloaded/14 loaded
copybytable cf_db1 snc_ttpattribute 4
316 unloaded/316 loaded
copybytable cf_db1 snc_xc2tprel 3
1 unloaded/1 loaded
copybytable cf_db1 snc_xcattribute 4
6 unloaded/6 loaded
copybytable cf_db1 snc_xconn 7
1 unloaded/1 loaded
copybytable cf_db2 snc_assoc 12
0 unloaded/skip loading
copybytable cf_db2 snc_bay 15
1 unloaded/1 loaded
copybytable cf_db2 snc_cktpack 14
10 unloaded/10 loaded
copybytable cf_db2 snc_ctp 12
154 unloaded/154 loaded
copybytable cf_db2 snc_ctpattribute 4
1344 unloaded/1344 loaded
copybytable cf_db2 snc_discrete 4
0 unloaded/skip loading
copybytable cf_db2 snc_discattribute 4
0 unloaded/skip loading
copybytable cf_db2 snc_element 20
1 unloaded/1 loaded
copybytable cf_db2 snc_eqptattribute 4
1946 unloaded/1946 loaded
copybytable cf_db2 snc_neattribute 4
21 unloaded/21 loaded
copybytable cf_db2 snc_port 9
0 unloaded/skip loading
copybytable cf_db2 snc_portattribute 4
0 unloaded/skip loading
copybytable cf_db2 snc_pgattribute 4
36 unloaded/36 loaded
copybytable cf_db2 snc_protgroup 6
4 unloaded/4 loaded
copybytable cf_db2 snc_shelf 16
1 unloaded/1 loaded
copybytable cf_db2 snc_slot 19
26 unloaded/26 loaded
copybytable cf_db2 snc_ttp 12
18 unloaded/18 loaded
```

copybytable cf_db2 snc_ttpattribute 4
468 unloaded/468 loaded
copybytable cf_db2 snc_xc2tprel 3
0 unloaded/skip loading
copybytable cf_db2 snc_xcattribute 4
0 unloaded/skip loading
copybytable cf_db2 snc_xconn 7
0 unloaded/skip loading
copybytable cf_db3 snc_assoc 12
0 unloaded/skip loading
copybytable cf_db3 snc_bay 15
1 unloaded/1 loaded
copybytable cf_db3 snc_cktpack 14
12 unloaded/12 loaded
copybytable cf_db3 snc_ctp 12
162 unloaded/162 loaded
copybytable cf_db3 snc_ctpattribute 4
1296 unloaded/1296 loaded

copybytable cf_db3 snc_discrete 4
0 unloaded/skip loading
copybytable cf_db3 snc_discattribute 4
0 unloaded/skip loading
copybytable cf_db3 snc_element 20
1 unloaded/1 loaded
copybytable cf_db3 snc_eqptattribute 4
1964 unloaded/1964 loaded
copybytable cf_db3 snc_neattribute 4
21 unloaded/21 loaded
copybytable cf_db3 snc_port 9
0 unloaded/skip loading
copybytable cf_db3 snc_portattribute 4
0 unloaded/skip loading
copybytable cf_db3 snc_pgattribute 4
37 unloaded/37 loaded
copybytable cf_db3 snc_protgroup 6
4 unloaded/4 loaded
copybytable cf_db3 snc_shelf 16
1 unloaded/1 loaded
copybytable cf_db3 snc_slot 19
26 unloaded/26 loaded
copybytable cf_db3 snc_ttp 12
26 unloaded/26 loaded

```
copybytable cf_db3 snc_ttpattribute 4
468 unloaded/468 loaded
copybytable cf_db3 snc_xc2tprel 3
1 unloaded/1 loaded
copybytable cf_db3 snc_xcattribute 4
6 unloaded/6 loaded
copybytable cf_db3 snc_xconn 7
1 unloaded/1 loaded
copybytable pm_db pm_monitorheader 6
0 unloaded/skip loading
copybytable pm_db pm_monitorlookup 6
0 unloaded/skip loading
copybytable pm_db pm_datamap 2
32 unloaded/32 loaded
copybytable tmf_db nci_snc 9
0 unloaded/skip loading
copybytable tmf_db nci_snc_xc 5
0 unloaded/skip loading
copybytable tmf_db nci_snc_tp 5
0 unloaded/skip loading
copybytable tmf_db nci_snc_tp_tr_pars 5
0 unloaded/skip loading

copybytable tmf_db nci_snc_tp_assoc 4
0 unloaded/skip loading
copybytable tmf_db nci_snc_xc_tp_asso 4
0 unloaded/skip loading
copybytable tmf_db nci_snc_add_info 3
0 unloaded/skip loading
copybytable tmf_db nci_userlabel 5
0 unloaded/skip loading
copybytable tmf_db nci_pm_tp 4
0 unloaded/skip loading
copybytable tmf_db nci_tp 7
0 unloaded/skip loading
copybytable tmf_db nci_nf_alarm 5
0 unloaded/skip loading=
copybytable tmf_db nci_nf_alarm_atp 2
0 unloaded/skip loading
copybytable tmf_db nci_nf_tca 11
0 unloaded/skip loading
copybytable tmf_db nci_nf_co 7
0 unloaded/skip loading
```

```
copybytable tmf_db nci_nf_co_me 11
0 unloaded/skip loading
copybytable tmf_db nci_nf_co_tp 20
0 unloaded/skip loading
copybytable tmf_db nci_nf_co_tp_lp 5
0 unloaded/skip loading
copybytable tmf_db nci_nf_co_snc 24
0 unloaded/skip loading
copybytable tmf_db nci_nf_co_snc_tp 6
0 unloaded/skip loading
copybytable tmf_db nci_nf_co_pgp 16
0 unloaded/skip loading
copybytable tmf_db nci_nf_co_pgp_tp 7
0 unloaded/skip loading
copybytable tmf_db nci_nf_do 6
0 unloaded/skip loading
copybytable tmf_db nci_nf_ps 12
0 unloaded/skip loading
copybytable tmf_db nci_nf_sps 16
0 unloaded/skip loading
copybytable tmf_db nci_nf_avcsc 11
0 unloaded/skip loading
copybytable tmf_db nci_nf_client_id 4
0 unloaded/skip loading
copybytable tmf_db nci_nf_filters 4
0 unloaded/skip loading

snms copy completed...
Sending 2nd large data files in background...
Resume replication to luna...
Resync completed at Tue Jun 26 14:24:22 EDT 2001...
logout
Resync flat files...
lahoreis active machine.
process not attached to terminal
Usage:who [-rbtpludAasHTqRm] [am i] [utmp_like_file]

r     run level
b    boot time
t      time changes
p     processes other than getty or users
l      login processes
u     useful information
d     dead processes
```

A accounting information
a all (rbtpludA options)
s short form of who (no time since last output or pid)
H print header
T status of tty (+ writable, - not writable, x exclusive open, ? hung)
q quick who
R print host name
/ems/etc/BR_rc
/ems/etc/CF_rc
/ems/etc/CM_Server_rc
/ems/etc/CM_rc
/ems/etc/CSB_rc
/ems/etc/EAPP_rc
/ems/etc/FM_rc
/ems/etc/LD_rc
/ems/etc/LM_Client_rc
/ems/etc/LM_rc
/ems/etc/NM_rc
/ems/etc/OBR_rc
/ems/etc/OA_LogPurger_rc
/ems/etc/OSB_rc
/ems/etc/OSWDL_rc
/ems/etc/PM_DbManager.rc
/ems/etc/PM_FTAM.rc
/ems/etc/PM_rc
/ems/etc/RP_rc
/ems/etc/SDSenv_rc
/ems/etc/SF_rc
/ems/etc/SM_Sec_rc

/ems/etc/SNC_MON_rc
/ems/etc/TLA_CMD_rc
/ems/etc/X25_rc
/ems/etc/foldtrc
/ems/etc/globalenv.rc
/ems/etc/trc
/ems/etc/vuewmrc
290 blocks
/ems/etc/CF_CktPackInfo
20 blocks
/ems/etc/OL_.config
10 blocks
/ems/etc/duainit

10 blocks
/ems/config/OA/scheduler/MultiNeJob.config
10 blocks
10 blocks
/ems/neData
10 blocks
/ems/.pm
/ems/.pm/.pm_global
/ems/.pm/DbManager
/ems/.pm/DbManager/.purge_mon_lookup.sql
/ems/.pm/DbManager/.PM_PurgeFile.sql
/ems/.pm/DbManager/.Pm_DbDataMap_PurgeFile
/ems/.pm/FTAM
/ems/.pm/.aid
/ems/.pm/.pm_divisors
/ems/.pm/.sondre
/ems/.pm/.sondre/lost.2001062
/ems/.pm/.sondre/lost.20010623
/ems/.pm/.sondre/lost.20010624
/ems/.pm/.sondre/lost.20010625
/ems/.pm/.sondre/lost.20010626
/ems/.pm/mapping
/ems/.pm/mapping/attributename
/ems/.pm/mapping/dirn
/ems/.pm/mapping/locn
/ems/.pm/mapping/mfamodifier
/ems/.pm/mapping/tca
/ems/.pm/mapping/validity
20 blocks
/ems/config/FM
/ems/config/FM/FM.cfg
/ems/config/FM/FM_Conditions
/ems/config/FM/GA_PATTERNTABLE

20 blocks
/reports/pm
10 blocks
/ems/userdb
/ems/userdb/GUI_Server
/ems/userdb/GUI_Server/port_label
/ems/userdb/GUI_Server/Port_Mapping
/ems/userdb/tfwdata
10 blocks

/ems/dsa/DB-bk
/ems/dsa/DB-bk/DB
/ems/dsa/DB-bk/DB.pfx
/ems/dsa/DB-bk/DB.att
/ems/dsa/DB-bk/DB.obc
/ems/dsa/DB-bk/DB.ncx
/ems/dsa/DB-bk/DB.dsa
/ems/dsa/DB-bk/DB.crf
/ems/dsa/DB-bk/aaaaaaaa.iDB
/ems/dsa/DB-bk/aaaaaaaa.vDB
/ems/dsa/DB-bk/baaaaaaa.iDB
/ems/dsa/DB-bk/BACKUP_ID
1180 blocks
1180 blocks

Your SNMS environment:
APPTAG = EMS
EMSROOT = /ems
APPCONFIG = /ems/etc/appconfig
APPMON_PORT= 7578
ROAMLOG = /ems/log/data

logout
Resync NE SW files...

Your SNMS environment:
APPTAG = EMS
EMSROOT = /ems

APPCONFIG = /ems/etc/appconfig
APPMON_PORT= 7578
ROAMLOG = /ems/log/data

logout

Your SNMS environment:
APPTAG = EMS
EMSROOT = /ems
APPCONFIG = /ems/etc/appconfig
APPMON_PORT= 7578
ROAMLOG = /ems/log/data

```
.ci
Appmon process is currently not running, it will now be started..
Appmon is already running
The old log will be cleared.

Current EMS Version: 5.1.0-152

Skip DB table creation becuase DB replication is on !!
Appmon is already running

====== Start EMS Application Processes==========

CURRENT RUN LEVEL IS: Shutdown

</tmp/SNC_LogDaemon.lock locked>.
Process <logdaemon> Started. "SNC_LogDaemon"
</tmp/SNC_LogDaemon.lock released>.
Process <orbixd> Started. "orbixd -u -c $ROAMLOG/
OrbixCheckpoint.dat > $ROAMLOG/OR.out 2>&1"
</tmp/stackHpov.lock locked>.
Process <stackHpov> Started. "startksh OsiStack /tmp/stackHpov.lock"

APPMON WARNING: waiting for /tmp/stackHpov.lock to be
unlocked for 1 minute
</tmp/stackHpov.lock released>.
Process <GUIunlock> Started. "rm -f /tmp/GUI_Wait_Locks/* /tmp/
CN_ttylocks/*"
Process <GUIunlock> Completed.
Process <sncCron> Started. "Crontab /ems/etc/cronProc"
Process <sncCron> Completed.
Process <ifr> Started. "ifr -L > $ROAMLOG/IFR.out 2>&1"
Process <putitNS> Started. "putit -port 7007 NS /ems/Orbix/bin/ns"
Process <putitNS> Completed.
<delay 1 second>
Process <tryNS> Started. "lsns"
Process <tryNS> Completed.
Process <chmodNS> Started. "chmodit i+all NS;chmodit l+all NS"
Process <chmodNS> Completed.
<delay 1 second>
</tmp/dsa.lock locked>.
Process <DsaStack> Started. "DsaStack /tmp/dsa.lock > /dev/null
2>&1"
</tmp/dsa.lock released>.
</tmp/HA_Mgr.lock locked>.
Process <HA_Mgr> Started. "HA_Mgr -server HA_Mgr -lockfile /tmp/
```

```
HA_Mgr.lock > /dev/null 2>&1"
</tmp/HA_Mgr.lock released>.
Process <putit2000> Started. "putit -port 2000 GUI_Server -persistent"
Process <putit2000> Completed.
<delay 2 seconds>
Process <putit3000> Started. "putit -port 3000 GDB_ServerFile -
persistent"
Process <putit3000> Completed.
<delay 2 seconds>
Process <putit4000> Started. "putit -port 4000 GDB_Server -
persistent"
Process <putit4000> Completed.
<delay 2 seconds>
Process <putitGDB> Started. "putit -port 4998 GDB_ServerNtwk -
persistent"
Process <putitGDB> Completed.
<delay 2 seconds>
Process <GDBchmodNtwk> Started. "chmodit GDB_ServerNtwk
i+all"
Process <GDBchmodNtwk> Completed.
<delay 2 seconds>
Process <putitGUI> Started. "putit -port 4999 GUI_AdminServer -
persistent"
Process <putitGUI> Completed
<delay 2 seconds>
Process <GUIchmodSrv> Started. "chmodit GUI_AdminServer i+all"
Process <GUIchmodSrv> Completed.
<delay 2 seconds>
Process <GUIchmod> Started. "chmodit GUI_Server i+all"
Process <GUIchmod> Completed.
Process <GDBchmodFile> Started. "chmodit GDB_ServerFile i+all"
Process <GDBchmodFile> Completed.
Process <GDBchmod> Started. "chmodit GDB_Server i+all"
Process <GDBchmod> Completed.
</tmp/GUI_TrcServer.lock locked>.
Process <GUI_TrcServer> Started. "GUI_TrcServer
TRACE_SERVER > $ROAMLOG/TRACE_SERVER.out"
</tmp/GUI_TrcServer.lock released>.
Process <DSA_Prov> Started. "DSA_Prov"
</tmp/LD_Manager.lock locked>.
Process <LD_Manager> Started. "LD_Manager -d 1 -t 5 -k /tmp/
LD_Manager.lock > $ROAMLOG/LD.out 2>&1"
</tmp/LD_Manager.lock released>.
```

```
</tmp/LM_Logger.lock locked>.
Process <LM_Logger> Started. "LM_Logger -s $LML_SIZE -t
$LML_TIMER -d $LML_DEBUG -u $LML_MTB -m
$LML_LOGMODE -k /tmp/LM_Logger.lock > /dev/null 2>&1"
</tmp/LM_Logger.lock released>.
</tmp/LM_Browser.lock locked>.
Process <LM_Browser> Started. "LM_Browser -k /tmp/
LM_Browser.lock"
</tmp/LM_Browser.lock released>.
Process <PM_DbManager> Started. "PM_DbManager -server
PM_DbManager"
Process <PM_DbServer> Started. "PM_DbServer -server
PM_DbServer"
</tmp/SB_Q3_400g.01.lock locked>.
Process <SB_Q3_400g01> Started. "startksh run400gq3 -i 01 /tmp/
SB_Q3_400g.01.lock"
</tmp/SB_Q3_400g.01.lock released>.
</tmp/SB_Q3_400g.02.lock locked>.
Process <SB_Q3_400g02> Started. "startksh run400gq3 -i 02 /tmp/
SB_Q3_400g.02.lock"
</tmp/SB_Q3_400g.02.lock released>.
</tmp/CM.lock locked>.
Process <CM_Server> Started. "CM_Server -l /tmp/CM.lock >
$ROAMLOG/CM.out 2>&1"
</tmp/CM.lock released>.
</tmp/NEH_Server.lock locked>.
Process <NEH_Server> Started. "NEH_Server -server NEH_Server -
lockfile /tmp/NEH_Server.lock"
</tmp/NEH_Server.lock released>.
</tmp/SDS_Server.lock locked>.
Process <SDS_Server> Started. "SDS_Server -l /tmp/
SDS_Server.lock"
</tmp/SDS_Server.lock released>.
</tmp/CS_SbOsi.lock locked>.
Process <CS_SbOsi> Started. "CS_SbOsi -s CS_SbOsi -i 01 -m dlp -t 3
-l /tmp/CS_SbOsi.lock"
</tmp/CS_SbOsi.lock released>.
</tmp/CS_Southbound.lock locked>.
Process <CS_Southbound> Started. "CS_Southbound -s
CS_Southbound01 -i 01 -t 3 -l /tmp/CS_Southbound.lock"
</tmp/CS_Southbound.lock released>.
</tmp/SB_TL1Mgr.lock locked>.
Process <SB_TL1Mgr> Started. "SB_TL1Mgr -server SB_TL1Mgr -
```

```
lockfile /tmp/SB_TL1Mgr.lock"
</tmp/SB_TL1Mgr.lock released>.
Process <PT_Mgr> Started. "PT_Mgr -server PT_Mgr"
</tmp/CF_NeProxy.lock locked>.
Process <CF_NeProxy> Started. "CF_NeProxy -server CF_NeAgent -
lockfile /tmp/CF_NeProxy.lock"
</tmp/CF_NeProxy.lock released>.
</tmp/CF_NeAgent_1.lock locked>.
Process <CF_NeAgent_1> Started. "CF_NeAgent -server
CF_NeAgent_1 -lockfile /tmp/CF_NeAgent_1.lock -S Agent0001"
</tmp/CF_NeAgent_1.lock released>.
Process <CF_NeAgent_2> Started. "CF_NeAgent -server
CF_NeAgent_2 -lockfile /tmp/CF_NeAgent_2.lock -S Agent0001"
Process <CF_NeAgent_3> Started. "CF_NeAgent -server
CF_NeAgent_3 -lockfile /tmp/CF_NeAgent_3.lock -S Agent0001"
</tmp/CF_DbServer.lock locked>.
Process <CF_DbServer> Started. "CF_DbServer -server CF_DbServer
-lockfile /tmp/CF_DbServer.lock"
</tmp/CF_DbServer.lock released>.
</tmp/NT_Manager.lock locked>.
Process <NT_Manager> Started. "NT_Manager -server NT_Manager -
lockfile /tmp/NT_Manager.lock"
</tmp/NT_Manager.lock released>.
Process <NT_Application> Started. "NT_Application -server
NT_Application"
</tmp/SNC_Mon.lock locked>.
Process <SNC_Mon> Started. "SNC_Mon SNC_Mon FM_Server /
tmp/SNC_Mon.lock > $ROAMLOG/SNC_Mon.out 2>&1"
</tmp/SNC_Mon.lock released>.
</tmp/FM_Db.lock locked>.
Process <FM_DbServer> Started. "FM_DbServer FM_Db /tmp/
FM_Db.lock"
</tmp/FM_Db.lock released>.
Process <DeviceMon> Started. "DeviceMon FM_server 32000 >
$ROAMLOG/DeviceMon.out"
</tmp/FM.lock locked>.
Process <FM_Server> Started. "FM_Server FM_Server /tmp/FM.lock"
</tmp/FM.lock released>.
</tmp/PROF.lock locked>.
Process <PROF_Prov> Started. "PROF_Prov PROF_Prov /tmp/
PROF.lock"
</tmp/PROF.lock released>.
</tmp/SB_Q3Gateway.lock locked>.
```

```
Process <SB_Q3Gateway> Started. "SB_Q3Gateway -f $SNCROOT/
etc/gwConfig.txt"
</tmp/SB_Q3Gateway.lock released>.
</tmp/BR_bacres.lock locked>.
Process <BR_bacres> Started. "BR_bacres -server BR_bacres -trace
BR=3 -lockfile /tmp/BR_bacres.lock > $ROAMLOG/BR.out 2>&1"
</tmp/BR_bacres.lock released>.
</tmp/SM_Security.lock locked>.
Process <SM_Security> Started. "SM_Security -lockfile /tmp/
SM_Security.lock -server SM_Security -trace SecServ=5 >
$ROAMLOG/SM.out 2>&1"
</tmp/SM_Security.lock released>.
Process <GDB_Server> Started. "GDB_Server GDB_Server"
Process <GDB_ServerFile> Started. "GDB_ServerFile
GDB_ServerFile > $ROAMLOG/GDB_File.out 2>&1"
Process <GDB_ServerNtwk> Started. "GDB_ServerNtwk
GDB_ServerNtwk > $ROAMLOG/GDB_Ntwk.out 2>&1"
Process <OBR_Main3K> Started. "OBR_Main3K -server
OBR_Main3K"
</tmp/SWM_Gateway.lock locked>.
Process <SWM_Gateway> Started. "SWM_Gateway -server
SWM_Gateway -lockfile /tmp/SWM_Gateway.lock -m dlp >
$ROAMLOG/SWM.out 2>&1"
</tmp/SWM_Gateway.lock released>.
</tmp/OAM_Scheduler.lock locked>.
Process <OAM_Scheduler> Started. "OAM_Scheduler -server
OAM_Scheduler -lockfile /tmp/OAM_Scheduler.lock > $ROAMLOG/
SCHED.out 2>&1"
</tmp/OAM_Scheduler.lock released>.
Process <GUI_Server> Started. "GUI_Server GUI_Server
>$ROAMLOG/GS.out 2>&1"
Process <GUI_AdminServer> Started. "UI_AdminServer
GUI_AdminServer >$ROAMLOG/GA.out 2>&1"
Process <GUI_JvmLauncher> Started. "GUI_JvmLauncher"
Process <PM_FTAM_1> Started. "PM_FTAM -server PM_FTAM_1"
Process <PM_FTAM_2> Started. "PM_FTAM -server PM_FTAM_2"
</tmp/PM_Dc.lock locked>.
Process <PM_Dc> Started. "PM_Dc -server PM_Dc -lockfile /tmp/
PM_Dc.lock"
</tmp/PM_Dc.lock released>.
</tmp/OAM_BcServer.lock locked>.
Process <OAM_BcServer> Started. "OAM_BcServer -server
OAM_BcServer -lockfile /tmp/OAM_BcServer.lock > $ROAMLOG/
```

```
BS.out 2>&1"
</tmp/OAM_BcServer.lock released>.
Process <putit6000> Started. "putit -port 6000 TMFNotifService -
persistent"
Process <putit6000> Completed.
Process <chmodtmf> Started. "chmodit TMFNotifService i+all"
Process <chmodtmf> Completed.
<delay 2 seconds>
</tmp/tmf_notifsvr.lock locked>.
Process <tmf_notifsvr> Started. "tmf_notifsvr -server
TMFNotifService -lockfile /tmp/tmf_notifsvr.lock -t $LML_TIMER"
</tmp/tmf_notifsvr.lock released>.
</tmp/tmf_gateway.lock locked>.
Process <tmf_gateway> Started. "tmf_gateway -server NetworkR1 -
lockfile /tmp/tmf_gateway.lock"
</tmp/tmf_gateway.lock released>.
Process <MTA> Started. "MTA MTA /tmp/MTA"

NEW RUN LEVEL IS: Running

====== EMS Application Processes are running==========

logout
Join to the cluster...
cmruncl : Cluster is already running on "lahore".
cmruncl : Cluster is already running on "luna".
cmrunnode  : Cluster is already running on "luna".
cmmodpkg  : Warning: Package sncPkg is already able to be switched.
cmmodpkg  : Completed successfully on all packages specified.
cmmodpkg  : Warning: Node luna is already able to run package
sncPkg.
cmmodpkg  : Completed successfully on all packages specified.
cmmodpkg  : Warning: Package standbyPkg is already unable to be
switched.
cmmodpkg  : Completed successfully on all packages specified.
cmmodpkg  : Warning: Node lahore is already unable to run package
standbyPkg cmmodpkg  : Completed successfully on all packages
specified.
cmmodpkg  : Warning: Node luna is already able to run package
standbyPkg.
cmmodpkg  : Completed successfully on all packages specified.
cmrunpkg  : Completed successfully on all packages specified.
Establishing connection to HA_Mgr.
[12913: New Connection
```

```
(lahore.ho.lucent.com,IT_daemon,*,ems,pid=12428,optimised) ]
[12913: New Connection
(lahore.ho.lucent.com,FM_Server,*,ems,pid=12966,optimised) ]
#
```

E HP Server Specifications

HP 9000 Servers and Peripherals

Classes of HP Servers Supported

The HP 9000 Servers that are supported as hosts for this release of WaveStar SNMS are the following:

- K-Class servers, which are legacy systems. Effective September 1, 2001, the HP 9000 K-Class servers will no longer be available for purchase. HP will discontinue product development and enhancements. Refer to HP's website for additional information.
- L-Class servers, which have been recently introduced
- N-Class servers, which have also been recently introduced

WaveStar SNMS Configurations Defined

A WaveStar SNMS hardware configuration is a supported set of hardware devices that function with the current release of WaveStar SNMS. In the broadest sense, WaveStar SNMS supports the following two types of hardware configurations:

- ***standalone configurations***, which include any one of the supported HP servers, mirrored disks, and the appropriate number of supported GUI clients
- ***redundant configurations***, which include a minimum of any two supported identical HP servers, along with mirrored disks and the appropriate number of supported GUI clients

Both standalone and redundant hardware configurations have ***Performance Monitoring (PM)*** of data, which measures the quality of service and identifies degrading or marginally operating systems before an alarm can be generated.

In addition, both standalone and redundant hardware configurations can have ***multiple CPUs,*** and redundant configurations can be configured for local or geographic (remote) redundancy.

Standalone Configuration Options

Standalone configurations include one HP server, the appropriate number of supported GUI clients, and mirrored disks on the L2000. Standalone configurations are provided with PM and with from one to eight CPUs.

The K-Class, L-Class, and N-Class servers are offered in standalone configurations.

Table 9-1 HP Standalone Server Configurations

Standalone Model	Number of CPUs Supported	Mirrored Disk Supported?
K380	1	no
	2	no
K580	4	no
	6	no
L2000	1	yes
	2	yes
	4	yes
N4000	8	no

Redundant Configuration Options

Redundant configurations apply to WaveStar SNMS R1.1 and later. A redundant configuration includes a minimum of any two supported identical HP servers, along with mirrored disks and the appropriate number of supported GUI clients. Redundant servers are configured with and/or without PM and from two to six CPUs in the following locations:

- ***Local redundancy*** uses two similarly equipped hosts located in the same building. Each host is configured with redundant hardware components. Should the primary host fail, the backup host is activated automatically without user intervention. The shared lock and its mirror disk must be accessible by both servers in a local redundancy configuration.
- ***Geographic redundancy*** relies on two similarly equipped hosts located in different geographical locations, for example: Chicago and Denver. Each host is configured with redundant hardware components, and resides on a TCP/IP WAN segment. Data replication and event forwarding via WAN are used to maintain EMS database and UNIX file system synchronization.

The K-Class and L-Class servers are both offered in redundant configurations. The N-Class server is not offered in a redundant configuration.

Table 9-2 HP Redundant Server Configurations

Standalone Model	Number of CPUs Supported	Mirrored Disk Supported?
K380	2	yes
K580	4	yes
	6	yes
L2000	2	yes
	4	yes

The kernel setting for a redundant configuration is the same as that for a standalone configuration.

Terminator cables are sometimes used in redundant configurations. If terminator cables are used, the resistors on the HSC SCSI card must be removed. Refer to the appropriate HP support person or documentation for the appropriate procedures.

Supported Disk Enclosures

The HVD10 is the disk enclosure system that replaces the HASS for the K-Class servers.

The SC10 is the disk enclosure that interworks exclusively with the L-Class and N-Class servers.

□

Local Redundancy Configuration by HP Specialists

Purpose

This reference section is provided for those people who must troubleshoot a hardware related problem and interwork with HP specialists. HP specialists are responsible for setting up a local redundancy hardware configuration based on WaveStar SNMS specifications.

When Self- Terminating Cables are Needed

When setting up two servers in a local redundancy configuration, pay special attention to the proper termination and addressing of the SCSI because the MC/Service Guard uses a shared lock disk. This type of connection requires the installation of self-terminating SCSI cables for the disk storage device that contains the shared disk. (The self-terminating SCSI cables are black.) To avoid having SCSI connection problems:

- The SCSI termination must be disabled on each SCSI card when a terminating cable is used.
- The SCSI ID must be configured for each shared SCSI card on both servers.

Avoid Double Termination

The SCSI bus should be properly terminated, especially for a local redundancy configuration. Double termination, which is caused by using the terminating cable while the terminating device on the SCSI adaptor (on the server) is active, is a common problem.

To avoid double termination on a local redundancy configuration, an HP specialist should perform the following:

- On a local redundancy configuration of K-Class servers, the HSC SCSI that connects to the terminating cable should have three resistors removed from the card.
- On local redundancy configuration of L-Class servers, the PCI SCSI that connects to the terminating cable should have a jumper reset to by pass termination on the card.

Different SCSI ID Settings

When a SCSI cable is connected between two servers in a local redundancy configuration, the SCSI interface cards at two ends of this connection should be set to different SCSI IDs.

Contact an HP specialist to perform the following:

- On the HSC card of the K-Class server, the adaptor must be physically retrieved and the jumpers must be reconfigured.
- On the PCI card of the L-Class server, a software reset is performed. The machine should be booted to the BCH prompt; and at the main menu, **user** and **sics** should be input. The information that is displayed should be similar to following (presuming 0/2/0/0 is the path where server is connected to the other server through terminating cable):

Path	Init	SCSI Rate
0/2/0/0	7	no limit

  The following command lines should be used to reset the SCSI ID and the SCSI rate:

  sics unit 0/2/0/0 6

  sics rate 0/2/0/0 no limit

□

Kernel Configurations for HP 11.0

System Turnable Parameters

The HP-UX 11.0 system tunable parameters for the WaveStar SNMS application are provided in the following table. If a default value or formula is provided, it should be used.

> **Important!** Never make the parameter value less than default value or less than the value derived from the formula provided.

The system uses a dynamic buffer cache to allocate buffer space. This preferred method allocates buffer space and supporting data structures as they are needed. It uses predefined minimum and maximum values to establish overall buffer cache space allocation limits; therefore, both *nbuf* and *bufpages* should be set to 0.

The kernel setting for a redundant configuration is the same as that for a standalone configuration.

Table 9-3 HP-UX System Tunable Parameters for WaveStar SNMS

Tunable Parameter	Default Value/Formula	Description
dbc_min_pct	12	Minimum dynamic buffer cache size as a percentage of system RAM size
dbc_max_pct	12	Maximum dynamic buffer cache size as a percentage of system RAM size
maxdsiz	0x04000000*14 or 0x7B03A000 for N4000 (8 CPUs) only	Maximum Data segment size (bytes)
maxfiles	1024	Soft file limit per process
maxfiles_lim	1024	Hard file limit per process
maxuprc	1024	Maximum number of user processes
maxusers	512	Value of MAXUSERS macro
maxswapchunks	1124 (K380, K580-4, L2000-1) 3684 (K580-6) 2148 (L2000-2) 3172 (L2000-4) 7268 (N4000-8)	Maximum number of swap chunks

Tunable Parameter	Default Value/Formula	Description
maxvgs (modified for this document)	40	Maximum number of volume group
bufpages	0	Number of buffer pages
nbuf	0	Number of buffer cache headers
npty	128	Number of ptys (pseudo ttys)
nstrpty	60	Maximum number of streams-based PTYs
nfile	((16*(NPROC+16+ MAXUSERS)/10+32+2* (NPTY+NSTRPTY))*4)	Maximum number of open files
nflocks	NPROC	Maximum number of file locks
ninode	(((NPROC+16+MAXUSERS)+ 32+(2*NPTY))*2)	Maximum number of inodes
msgmnb	65535	Maximum number of bytes on message queue
msgmax	32768	Message maximum size (bytes)
msgmni	NPROC	Number of message queue identifiers
msgseg	32767	Number of segments available for message
msgssz	128	Message segment size
msgtql	32767	Number of message headers
shmmax	(0X4000000*4)	Maximum shared memory segments (bytes)
semaem	16384	Maximum value for adjust on exit semaphores
semmni	2048	Number of semaphore identifiers
semmns	4096	Maximum number of semaphores
semmnu	128*4	Number of semaphore undo structures
semume	128*4	Semaphore undo entries per process
ncallout	nproc+16	Maximum number of pending timeouts
n2z_max_zstrbuf_pgs	8	X.25 internal use
n2z_outb_buffer_sz	4096	X.25 internal use

K380 (1 CPU) Standalone Configuration

Standalone Specifications

This table lists the specifications for a standalone K380 server with one CPU.

Table 9-4 K380 (1 CPU) Standalone Specifications

Item	Standalone Specifications*
Number of CPUs	1
HP-UX Version	11.00 (32 bit)
Memory	768MB
Swap/Dump Space	2248MB
WaveStar SNMS Disk Space	54GB with PM data collection
with PM	six, 9GB drives or three, 18GB drives
without PM	three 9GB drives
Additional Disk Space for TMF	Included (2GB)
DAT	DDS3
CD-ROM Drive	DVD
X.25 (optional)	1 ACC MUX
SCSI Controller	2
LAN Cards	2
Supported Workstations/PCs	20
Disk Enclosure	HVD10
Bus Mode	Full Bus/Dual Connection
Jumper Settings	1111
*Also applies to the K360, which HP has already discontinued.	

9GB Disk Partitions for a Standalone K380 with PM Support

This table shows the 9GB disk partitions for a standalone K380 (K360) with 1 CPU and PM support:

Table 9-5 9GB Disk Partitions for Standalone K380 (1 CPU) with PM Support

9GB Partition Number	Mount Point	Allocated Space
VG#0	Swap1Dump / /stand /opt /var /usr /home /tmp	2248MB 512MB 100MB 1024MB 1024MB 1024MB 100MB 1024MB
	dbspace	dbspe1_1G
VG#1	/ems	6GB
	/tools	600MB
	/reports	1.8GB
VG#2	dbspace	dbsp1_1G
	pmspace	pmsp{1-3}_2G
VG#3	dbspace	dbsp2_1G
	dbspace	dbsp3_1G
	pmspace	pmsp{4-6}_2G
VG#4	pmspace	pmsp{7-8}_2G
	pmspace	pmsp{9-10}_2G
VG#5	/data	4GB
	nbspace	nbsp1_2G
	pmspace	pmsp11_2G

18GB Disk Partitions for a Standalone K380 with PM Support

This table shows the 18GB disk partitions for a standalone K380 (K360) with one CPU and with PM support:

Table 9-6 18GB Disk Partitions for a Standalone K380 with One CPU and PM Support

18GB Partition Number	Mount Point	Allocated Space
VG#0	Swap1Dump / /stand /opt /var /usr /home /tmp	2248MB 512MB 100MB 1024MB 1024MB 1024MB 100MB 1024MB
	dbspace	dbspe1_1G
	/ems	6GB
	/tools	600MB
	/reports	1.8GB
VG#1	dbspace	dbsp1_1G
	pmspace	pmsp{1-3}_2G
	dbspace	dbsp2_1G
	dbspace	dbsp3_1G
	pmspace	pmsp{4-6}_2G
VG#2	pmspace	pmsp{7-8}_2G
	pmspace	pmsp{9-10}_2G
	/data	4GB
	nbspace	nbsp1_2G
	pmspace	pmsp11_2G

K380 (2 CPUs) Standalone and Redundant Configurations

Standalone and Redundant Specifications

This table lists the specifications for a standalone and redundant K380 server with two CPUs.

Table 9-7 K380 (2 CPUs) Standalone and Redundant Specifications

Item	Standalone Specifications**	Redundant Specifications**
Number of CPUs	2	2
HP-UX Version	11.00 (32 bit)	11.0 (32 bit)
Memory	1024MB	1024MB
Swap/Dump Space	2248MB	2248MB
WaveStar SNMS Disk Space*	99GB with PM	108GB
with PM	eleven, 9GB drives or six, 18GB drives	eleven, 9GB drives or six, 18GB drives
without PM	five, 9GB drives	five, 9GB drives
Base Disk Space (minimum)	N/A	18GB x 2
PM + NB Log Disk Space (minimum)	N/A	26GB x 2
Additional Disk Space for TMF	Included (2GB)	Included
DAT	DDS3	DDS3
CD-ROM Drive	DVD	DVD
X.25 (optional)	2 ACC MUX	N/A
SCSI Controller	3	4
LAN Interface (including CORE I/O card)	3	5
Cabinet	2.0m	2.0m, 1 per host
Supported Workstations/PCs	30	30
Disk Enclosure	HVD10	HVD10
Bus Mode	Full Bus/Dual Connection	Split Bus/Dual Connection
Jumper Settings	1111	01111

*Assumes that the user will be collecting PM data.

**Also applies to the K460, which HP has already MD'd, and the K580.

**Also applies to the K360, which HP has already MD'd.

9GB Disk Partitions for a Standalone K380 with PM Support

This table shows the 9GB disk partitions for a standalone K380 (K580/460) with 2 CPUs and PM support:

Table 9-8 9GB Disk Partitions for a Standalone K380 (2 CPUs) with PM Support

9GB Partition Number	Mount Point	Allocated Space
VG#0	Swap1Dump / /stand /opt /var /usr /home /tmp	2248MB 512MB 100MB 1024MB 1024MB 1024MB 100MB 1024MB
	dbspace	dbspe1_1G
VG#1	/ems	6GB
	/tools	600MB
	/reports	1.8G
VG#2	dbspace	dbsp1_1G
	pmspace	pmsp{1-3}_2G
VG#3	dbspace	dbsp2_1G
	pmspace	pmsp{4-6}_2G
VG#4	dbspace	dbsp3_1G
	dbspace	dbspe2_2G
	pmspace	pmsp{7-8}_2G
VG#5	dbspace	dbsp4_1G
	dbspace	dbsp5_2G
	pmspace	pmsp{9-10}_2G
VG#6	pmspace	pmsp{11-14}_2G
VG#7	pmspace	pmsp{15-18}_2G
VG#8	pmspace	pmsp{19-22}_2G
VG#9	pmspace	pmsp{23-26}_2G

9GB Partition Number	Mount Point	Allocated Space
VG#10	pmspace	pmsp{27-28}_2G
	/data	4GB
	nbspace	nbsp1_2G

18GB Disk Partitions for a Standalone K380 with PM Support

This table shows the 18GB disk partitions for a standalone K380 (K580/K460) with two CPUs and with PM support.

Table 9-9 18GB Disk Partitions for a Standalone K380 (2 CPUs) with PM Support

18GB Partition Number	Mount Point	Allocated Space
VG#0	Swap1Dump / /stand /opt /var /usr /home /tmp	2248MB 512MB 100MB 1024MB 1024MB 1024MB 100MB 1024MB
	dbspace	dbspe1_1G
	/ems	6GB
	/tools	600MB
	/reports	1.8G
VG#1	dbspace	dbsp1_1G
	pmspace	pmsp{1-3}_2G
	dbspace	dbsp2_1G
	pmspace	pmsp{4-6}_2G
VG#2	dbspace	dbsp3_1G
	dbspace	dbspe2_2G
	pmspace	pmsp{7-8}_2G
	dbspace	dbsp4_1G
	dbspace	dbsp5_2G
	pmspace	pmsp{9-10}_2G
VG#3	pmspace	pmsp{11-14}_2G
	pmspace	pmsp{15-18}_2G
VG#4	pmspace	pmsp{19-22}_2G
	pmspace	pmsp{23-26}_2G

18GB Partition Number	Mount Point	Allocated Space
VG#5	pmspace	pmsp{27-28}_2G
	/data	4GB
	nbspace	nbsp1_2G

9GBx2 Mirrored Disk Partitions for a Redundant K380

This table shows the 9GBx2 mirrored disk partitions for a redundant K380 (K360) with two CPUs.

Table 9-10 9GBx2 Mirrored Disk Partitions for a Redundant K380 (2 CPUs)

9GBx2 Partition Number	Mount Point	Allocated Space
VG00	Swap/Dump / /stand /opt /var /usr /home /tmp	2248MB 512MB 100MB 1024MB 1024MB 1024MB 100MB 1024MB
	dbspace	dbspe_1G
VG01	/ems	6GB
	/tools	600MB
	/reports	1.8GB
VG02	dbspace	dbsp1_1G
	pmspace	pmsp{1-3}_2G
VG03	dbspace	dbsp2_1G
	dbspace	dbsp3_1G
	pmspace	pmsp{4-6}_2G
VG04	pmspace	pmsp{7-10}_2G
VG05*	pmspace	pmsp{11,12}_2G
	nbspace	nbsp1_2G
	/data	4GB
* VG06 is recommended on the secondary host. VG05 is recommended to be on one of the shared disks and to be exported without any LVs to the secondary host for cluster lock.		

18GBx2 Mirrored Disk Partitions for a Redundant K380

This table shows the 18GBx2 mirrored disk partitions for a redundant K380 (K360) with two CPUs.

Table 9-11 18GBx2 Mirrored Disk Partitions for a Redundant K380 (2 CPUs)

18GBx2 Partition Number	Mount Point	Allocated Space
VG00	Swap/Dump / /stand /opt /var /usr /home /tmp	2248MB 512MB 100MB 1024MB 1024MB 1024MB 100MB 1024MB
	dbspace	dbspe_1G
	/ems	6GB
	/tools	600MB
	/reports	1.8GB
VG01	dbspace	dbsp1_1G
	pmspace	pmsp{1-3}_2G
	dbspace	dbsp2_1G
	dbspace	dbsp3_1G
	pmspace	pmsp{4-6}_2G
VG02*	pmspace	pmsp{7-10}_2G
	pmspace	pmsp{11,12}_2G
	nbspace	nbsp1_2G
	/data	4GB

* VG03 is recommended on the secondary host. VG02 is recommended to be on one of the shared disks and exported without any LVs to the secondary host for cluster lock.

Figure 9-1 Redundant K380 (2 CPUs) with J-Box

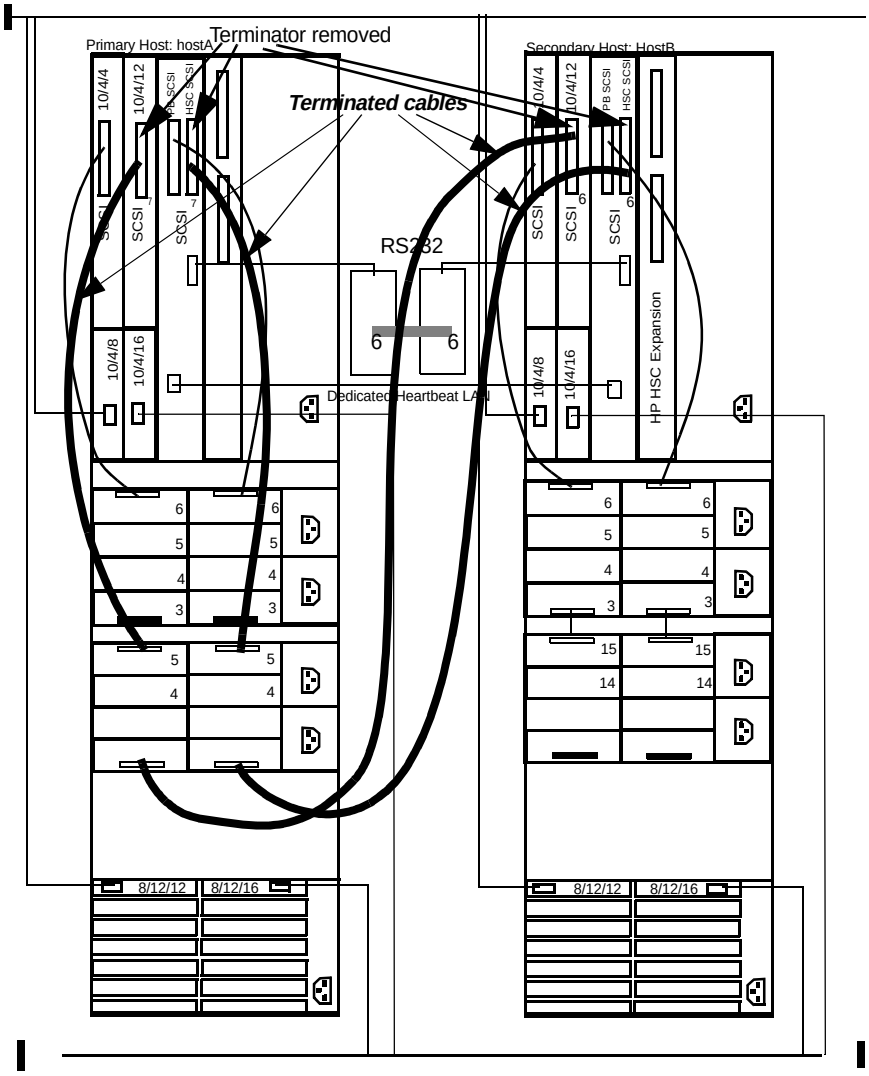
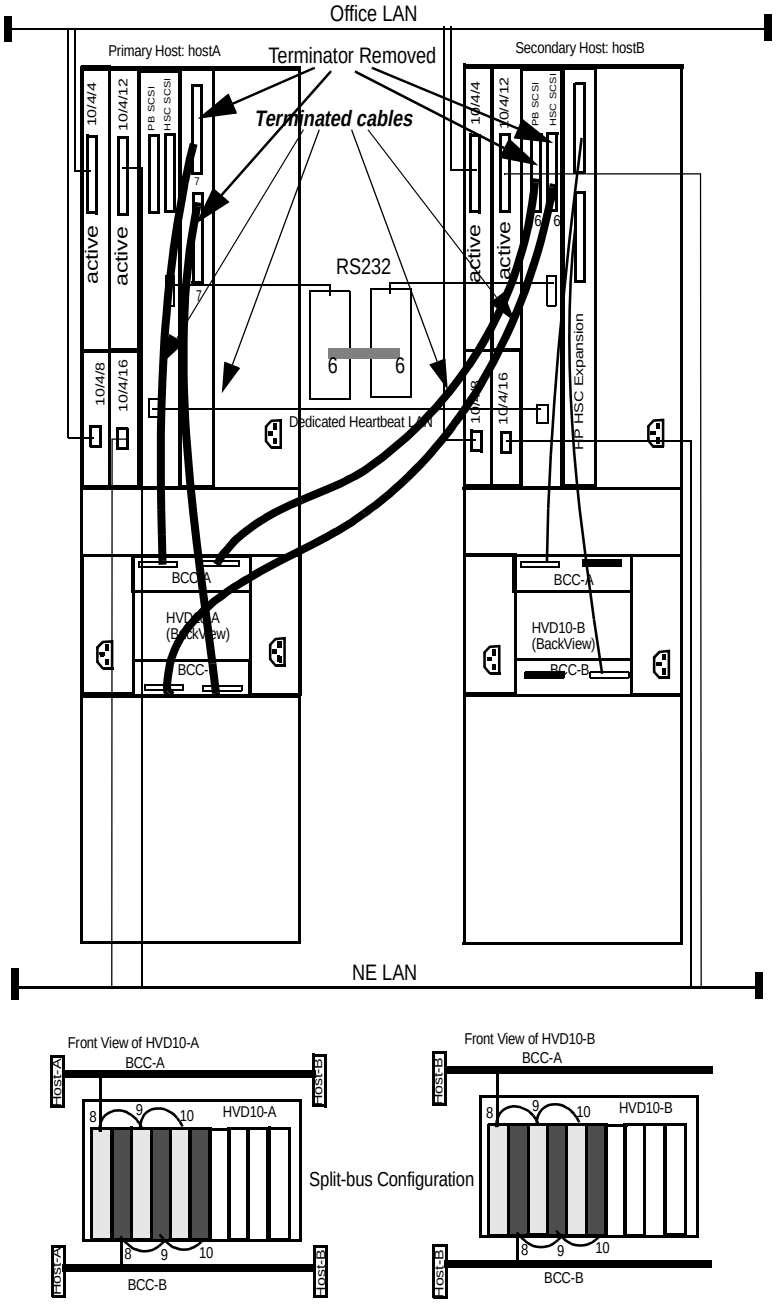


Figure 9-2 Redundant K380 (2 CPUs) with HVD10



K580 (4 CPUs) Standalone and Redundant Configurations

Standalone and Redundant Specifications

This table lists the specifications for a standalone and redundant K580 with four CPUs.

Table 9-12 K580 (6 CPUs) Standalone and Redundant Specifications

Item	Standalone Specification*	Redundant Specification
Number of CPUs	4	4
HP-UX Version	11.00 (32 bit)	11.00 (32 bit)
Memory	1280MB	1280MB
Swap/Dump Space	2248MB	2248MB
WaveStar SNMS Disk Space	180GB with PM	288GB
with PM	twenty, 9GB drives or ten, 18GB drives	twenty, 9GB drives or ten, 18GB drives
without PM	six, 9GB drives	six, 9GB drives
Base Disk Space (minimum)	N/A	18GB x 2
PM + NB Log Disk Space (minimum)	N/A	94GB x 2
Additional Disk Space for TMF	Included (4GB)	Included
DAT	DDS3	DDS3
CD-ROM Drive	DVD	DVD
X.25 (optional)	2 ACC MUX	N/A
SCSI Controller	4	6
LAN Interface Card including the CORE I/O card)	3	5
Cabinet	2.0m	2.0m, 2 per host
Supported Workstations/PCs	30	30
Disk Enclosure	HVD10	HVD10
Bus Mode	Split Bus/Dual Connection	Split Bus/Dual Connection
Jumper Settings	01111	01111

*Also applies to the K460, which HP has already MD'd.

9GB Disk Partitions for a Standalone K580 (4 CPUs) with PM Support

This table shows the 9GB disk partitions for a standalone K580 (K460), with four CPUs and PM support.

Table 9-13 9GB Disk Partitions for a Standalone K580 (4 CPUs) with PM Support

9GB Partition Number	Mount Point	Allocated Space
VG#0	Swap1Dump / /stand /opt /var /usr /home /tmp	2248MB 512MB 100MB 1024MB 1024MB 1024MB 100MB 1024MB
	dbspace	dbspe1_1G
VG#1	/ems	6GB
	/tools	600MB
	/reports	1.8G
VG#2	dbspace	dbsp1_2G
	pmspace	pmsp{1-3}_2G
VG#3	dbspace	dbsp2_2G
	pmspace	pmsp{4-6}_2G
VG#4	dbspace	dbsp3_2G
	dbspace	dbspe2_2G
	pmspace	pmsp{7-8}_2G
VG#5	dbspace	dbsp4_2G
	pmspace	pmsp{9-11}_2G
VG#6	dbspace	dbsp5_2G
	pmspace	pmsp{12-14}_2G
VG#7	dbspace	dbsp6_2G
	dbspace	dbspe3_2G
	pmspace	pmsp{15-16}_2G
VG#8	pmspace	pmsp{17-20}_2G
VG#9	pmspace	pmsp{21-24}_2G

9GB Partition Number	Mount Point	Allocated Space
VG#10	pmspace	pmsp{25-28}_2G
VG#11	pmspace	pmsp{29-32}_2G
VG#12	pmspace	pmsp{33-36}_2G
VG#13	pmspace	pmsp{37-40}_2G
VG#14	pmspace	pmsp{41-44}_2G
VG#15	pmspace	pmsp{45-48}_2G
VG#16	pmspace	pmsp{49-52}_2G
VG#17	pmspace	pmsp{53-56}_2G
VG#18	pmspace	pmsp{57-60}_2G
	nbspace	nbsp{1-2}_2G
VG#19	/data	4GB
	/var/opt/omni (optional)	4GB

18GB Disk Partitions for a Standalone K580 (4 CPUs) with PM Support

This table shows the 18GB disk partitions for a standalone K580 (K460) with four CPUs and PM support:

Table 9-14 18GB Disk Partitions for a Standalone K580 (4 CPUs) with PM Support

18GB Partition Number	Mount Point	Allocated Space
VG#0	Swap1Dump / /stand /opt /var /usr /home /tmp	2248MB 512MB 100MB 1024MB 1024MB 1024MB 100MB 1024MB
	dbspace	dbspe1_1G
	/ems	6GB
	/tools	600MB
	/reports	1.8G
VG#1	dbspace	dbsp1_2G
	pmspace	pmsp{1-3}_2G
	dbspace	dbsp2_2G
	pmspace	pmsp{4-6}_2G
VG#2	dbspace	dbsp3_2G
	dbspace	dbspe2_2G
	pmspace	pmsp{7-8}_2G
	dbspace	dbsp4_2G
	pmspace	pmsp{9-11}_2G
VG#3	dbspace	dbsp5_2G
	pmspace	pmsp{12-14}_2G
	dbspace	dbsp6_2G
	dbspace	dbspe3_2G
	pmspace	pmsp{15-16}_2G
VG#4	pmspace	pmsp{17-20}_2G
	pmspace	pmsp{21-24}_2G

18GB Partition Number	Mount Point	Allocated Space
VG#5	pmspace	pmsp{25-28}_2G
	pmspace	pmsp{29-32}_2G
VG#6	pmspace	pmsp{33-36}_2G
	pmspace	pmsp{37-40}_2G
VG#7	pmspace	pmsp{41-44}_2G
	pmspace	pmsp{45-48}_2G
VG#8	pmspace	pmsp{49-52}_2G
	pmspace	pmsp{53-56}_2G
VG#9	pmspace	pmsp{57-60}_2G
	nbspace	nbsp{1-2}_2G
	/data	4GB
	/var/opt/omni (optional)	4GB

9GBx2 Mirrored Disk Partitions for a Redundant K580 (4 CPUs)

This table shows the 9GBx2 mirrored disk partitions for a redundant K580 with four CPUs.

Table 9-15 9GBx2 Mirrored Disk Partitions for a Redundant K580 (4 CPUs)

9GBx2 Partition Numbers	Mount Point	Allocated Space
VG00	Swap/Dump / /stand /opt /var /usr /home /tmp	2248MB 512MB 100MB 1024MB 1024MB 1024MB 100MB 1024MB
	dbspace	dbspe1_1G
VG01	/ems	6GB
	/tools	600MB
	/reports	1.8GB
VG02	dbspace	dbsp1_2G
	pmspace	pmsp{1-3}_2G
VG03	dbspace	dbsp2_2G
	pmspace	pmsp{4-6}_2G
VG04	dbspace	dbsp3_2G
	dbspace	dbspe2_2G
	pmspace	pmsp{7-8}_2G
VG05	dbspace	dbsp4_2G
	dbspace	dbspe3_2G
	pmspace	pmsp{9-10}_2G
VG06	dbspace	dbsp5_2G
	pmspace	pmsp{11-13}_2G
VG07	dbspace	dbsp6_2G
	pmspace	pmsp{14-16}_2G
VG08	pmspace	pmsp{17-20}_2G
VG09	pmspace	pmsp{21-24}_2G

9GBx2 Partition Numbers	Mount Point	Allocated Space
VG10	pmspace	pmsp{25-28}_2G
VG11	pmspace	pmsp{29-32}_2G
VG12	pmspace	pmsp{33-36}_2G
VG13	pmspace	pmsp{37-40}_2G
VG14	pmspace	pmsp{41-44}_2G
VG15*	nbspace	nbsp{1-2}_2G
	/data	4GB
* VG16 is recommended on the secondary host. VG15 is recommended to be on one of the shared disks and to be exported without any LVs to the secondary host for cluster lock.		

18GBx2 Mirrored Disk Partitions for a Redundant K580 (4 CPUs)

This table shows the 18GBx2 mirrored disk partitions for a redundant K580 with four CPUs.

Table 9-16 18GBx2 Mirrored Disk Partitions for a Redundant K580 (4 CPUs)

18GBx2 Partition Number	Mount Point	Allocated Space
VG00	Swap/Dump / /stand /opt /var /usr /home /tmp	2248MB 512MB 100MB 1024MB 1024MB 1024MB 100MB 1024MB
	dbspace	dbspe1_1G
	/ems	6GB
	/tools	600MB
	/reports	1.8GB
VG01	dbspace	dbsp1_2G
	pmspace	pmsp{1-3}_2G
	dbspace	dbsp2_2G
	pmspace	pmsp{4-6}_2G
VG02	dbspace	dbsp3_2G
	dbspace	dbspe2_2G
	pmspace	pmsp{7-8}_2G
	dbspace	dbsp4_2G
	dbspace	dbspe3_2G
	pmspace	pmsp{9-10}_2G
VG03	dbspace	dbsp5_2G
	pmspace	pmsp{11-13}_2G
	dbspace	dbsp6_2G
	pmspace	pmsp{14-16}_2G
VG04	pmspace	pmsp{17-20}_2G
	pmspace	pmsp{21-24}_2G

18GBx2 Partition Number	Mount Point	Allocated Space
VG05	pmspace	pmsp{25-28}_2G
	pmspace	pmsp{29-32}_2G
VG06	pmspace	pmsp{33-36}_2G
	pmspace	pmsp{37-40}_2G
VG07*	pmspace	pmsp{41-44}_2G
	nbspace	nbsp{1-2}_2G
	/data	4GB
*VG08 is recommended on the secondary host. VG07 is recommended to be on one of the shared disks and to be exported without any LVs to the secondary host for cluster lock.		

Figure 9-3 Redundant K580 (4 CPUs) with J-Box

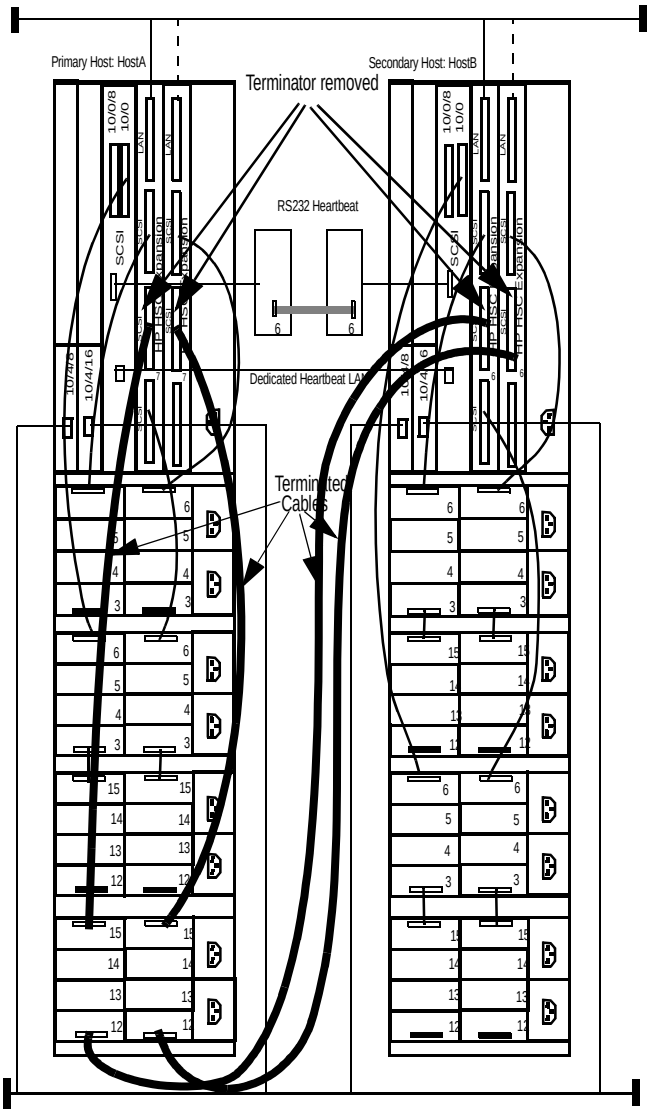
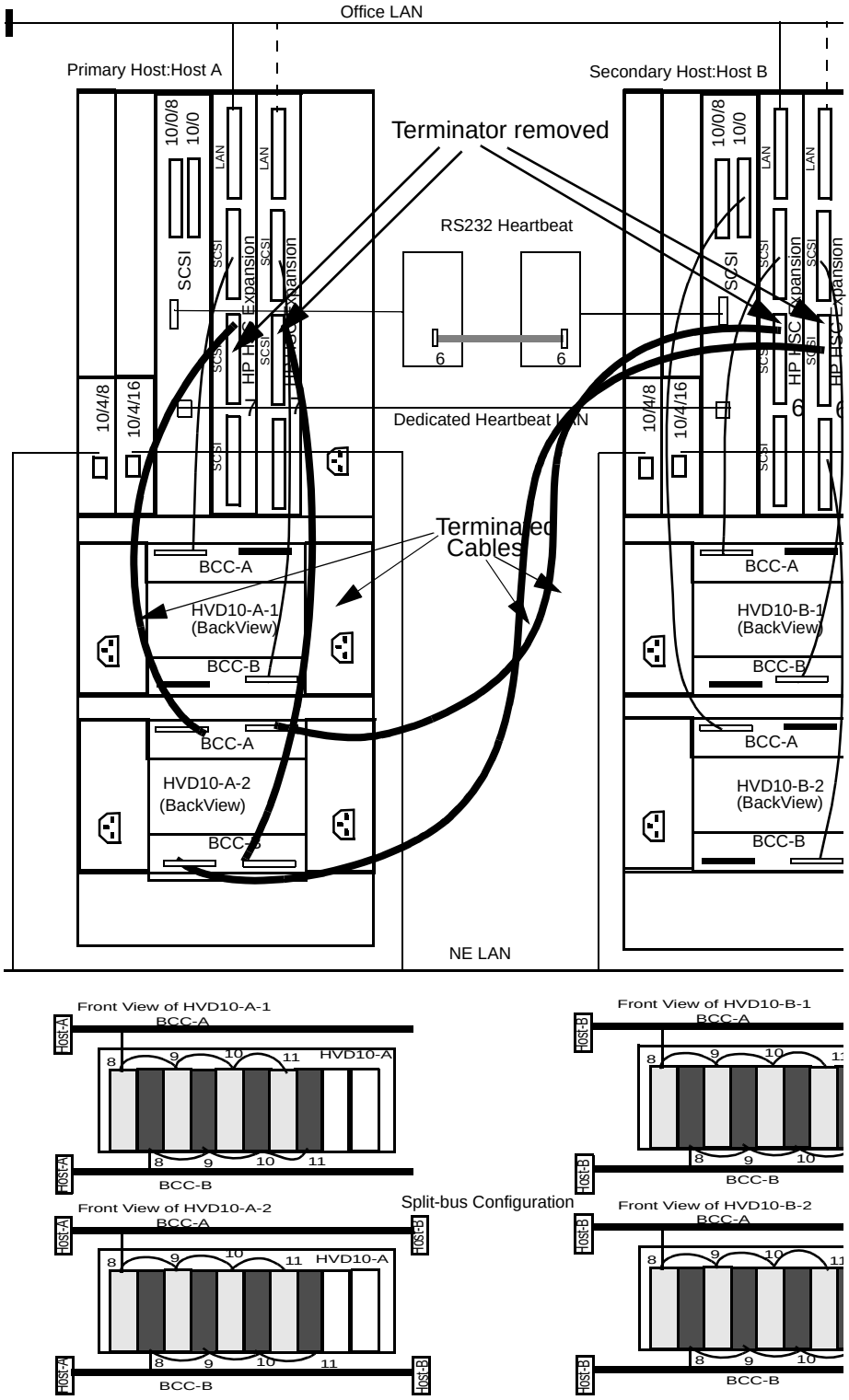


Figure 9-4 Redundant K580 (4 CPUs) with HVD10



K580 (6 CPUs) Standalone and Redundant Configurations

Standalone and Redundant Specifications

This table lists the specifications for a standalone and redundant K580 with six CPUs.

Table 9-17 K580 (6 CPUs) Standalone and Redundant Specifications

Item	Standalone Specification	Redundant Specification
Number of CPUs	6	6
HP-UX Version	11.00 (32 bit)	11.00 (32 bit)
Memory	2048MB	4096MB
Swap/Dump Space	2248MB	4296MB
WaveStar SNMS Disk Space	180GB	360GB
with PM	twenty, 9GB drives or ten, 18GB drives	twenty, 9GB drives or ten, 18GB drives
without PM	six, 9GB drives	six, 9GB drives
Base Disk Space (minimum)	N/A	20GB x 2
PM + NB Log Disk Space (minimum)	N/A	156GB x 2
Additional Space for TMF	Included (4GB)	Included
DAT	DDS3	DDS3
CD-ROM Drive	DVD	DVD
X.25 (optional)	2 ACC MUX	N/A
SCSI Controller	4	8
LAN Interface Card	3	7*
Cabinet	2.0m	2.0m, 2 per host
Supported Workstations/PCs	30	30
Disk Enclosure	HVD10	HVD10
Bus Mode	Split Bus/Dual Connection	Split Bus/Dual Connection
Jumper Settings	01111	01111

*7 LAN cards are needed because the system supports pure OSI and OSI and/or TCP/IP NEs. The WaveStar SNMS application, as configured in InstallEms, supports pure OSI redundancy and MC/ServiceGuide supports to redundancy TCP/IP LAN.

9GB Disk Partitions for a Standalone K580 (6 CPUs) with PM Support

This table shows the 9GB disk partitions for a standalone K580 (K460) with six CPUs and PM support:

Table 9-18 9GB Disk Partitions for a Standalone K580 (6 CPUs) with PM Support

9GB Partition Number	Mount Point	Allocated Space
VG#0	Swap1Dump / /stand /opt /var /usr /home /tmp	2248MB 512MB 100MB 1024MB 1024MB 1024MB 100MB 1024MB
	dbspace	dbspe1_1G
VG#1	/ems	6GB
	/tools	600MB
	/reports	1.8G
VG#2	dbspace	dbsp1_2G
	pmspace	pmsp{1-3}_2G
VG#3	dbspace	dbsp2_2G
	pmspace	pmsp{4-6}_2G
VG#4	dbspace	dbsp3_2G
	dbspace	dbspe2_2G
	pmspace	pmsp{7-8}_2G
VG#5	dbspace	dbsp4_2G
	pmspace	pmsp{9-11}_2G
VG#6	dbspace	dbsp5_2G
	pmspace	pmsp{12-14}_2G
VG#7	dbspace	dbsp6_2G
	dbspace	dbspe3_2G
	pmspace	pmsp{15-16}_2G
VG#8	pmspace	pmsp{17-20}_2G
VG#9	pmspace	pmsp{21-24}_2G

9GB Partition Number	Mount Point	Allocated Space
VG#10	pmspace	pmsp{25-28}_2G
VG#11	pmspace	pmsp{29-32}_2G
VG#12	pmspace	pmsp{33-36}_2G
VG#13	pmspace	pmsp{37-40}_2G
VG#14	pmspace	pmsp{41-44}_2G
VG#15	pmspace	pmsp{45-48}_2G
VG#16	pmspace	pmsp{49-52}_2G
VG#17	pmspace	pmsp{53-56}_2G
VG#18	pmspace	pmsp{57-58}_2G
	nbspace	nbsp{1-2}_2G
VG#19	/data	4GB
	/var/opt/omni (optional)	4GB

18GB Disk Partitions for a Standalone K580 with PM Support

This table shows the 18GB disk partitions for a K580 (K460) server with six CPUs and PM support:

Table 9-19 18GB Disk Partitions for a Standalone K580 (6 CPUs) with PM Support

18GB Partition Number	Mount Point	Allocated Space
VG#0	Swap1Dump / /stand /opt /var /usr /home /tmp	2248MB 512MB 100MB 1024MB 1024MB 1024MB 100MB 1024MB
	dbspace	dbspe1_1G
	/ems	6GB
	/tools	600MB
	/reports	1.8G
VG#1	dbspace	dbsp1_2G
	pmspace	pmsp{1-3}_2G
	dbspace	dbsp2_2G
	pmspace	pmsp{4-6}_2G
VG#2	dbspace	dbsp3_2G
	dbspace	dbspe2_2G
	pmspace	pmsp{7-8}_2G
	dbspace	dbsp4_2G
	pmspace	pmsp{9-11}_2G
VG#3	dbspace	dbsp5_2G
	pmspace	pmsp{12-14}_2G
	dbspace	dbsp6_2G
	dbspace	dbspe3_2G
	pmspace	pmsp{15-16}_2G
VG#4	pmspace	pmsp{17-20}_2G
	pmspace	pmsp{21-24}_2G

18GB Partition Number	Mount Point	Allocated Space
VG#5	pmspace	pmsp{25-28}_2G
	pmspace	pmsp{29-32}_2G
VG#6	pmspace	pmsp{33-36}_2G
	pmspace	pmsp{37-40}_2G
VG#7	pmspace	pmsp{41-44}_2G
	pmspace	pmsp{45-48}_2G
VG#8	pmspace	pmsp{49-52}_2G
	pmspace	pmsp{53-56}_2G
VG#9	pmspace	pmsp{57-58}_2G
	nbspace	nbsp{1-2}_2G
	/data	4GB
	/var/opt/omni (optional)	4GB

9GB/18GB Disk Partitions for a Redundant K580 (6 CPUs)

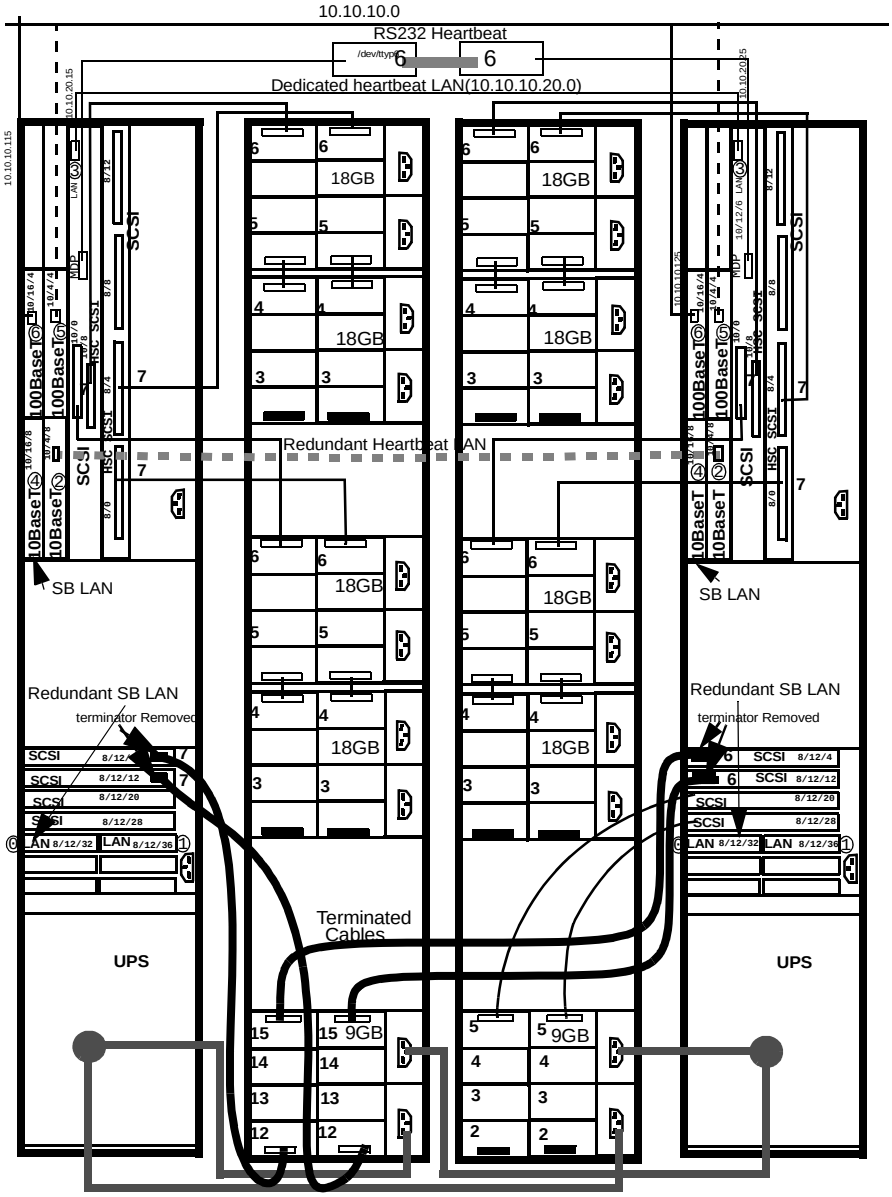
This table shows the 9GB/18GBx2 mirrored disk partitions for a redundant K580 with six CPUs.

Table 9-20 9GB/18GBx2 Mirrored Disk Partitions for a Redundant K580 (6 CPUs)

9/18GBx2 Partition Number	Mount Point	Allocated Space
VG00 (18GBx2)	Swap1/Dump / /stand /opt /var /usr /home /tmp /ems /tools /reports (Total Used)	4296MB 512MB 100MB 1024MB 1024MB 1024MB 100MB 1024MB 6GB 600MB 1.8G 17GB
VG01 (18GBx2)	/data	10GB
	/work (all purpose)	4GB
	/var/opt/omni (optional)	3.5GB
VG02 (18GBx2)	dbspace	dbsp1_2G
	pmspace	pmsp{1-7}_2G
VG03 (18GBx2)	Swap2	1024MB
	dbspace	dbsp2_2G
	pmspace	pmsp{8-14}_2G
VG04 (18GBx2)	Swap3	1024MB
	dbspace	dbsp3_2G
	pmspace	pmsp{15-21}_2G
VG05 (18GBx2)	Swap4	1024MB
	dbspace	dbsp4_2G
	pmspace	pmsp{22-28}_2G
VG06 (18GBx2)	dbspace	dbsp5_2G
	pmspace	pmsp{29-35}_2G

9/18GBx2 Partition Number	Mount Point	Allocated Space
VG07 (18GBx2)	pmspace	pm{36-42}_2G
	dbspace	dbsp6_2G
VG08 (18GBx2)	nbspace	nbsp1-2
	dbspace	dbspe1_1G
VG09 (9GBx2)	pmspace	pmsp{43-46}_2G
VG10 (9GBx2)	pmspace	pmsp{47-50}_2G
VG12 (9GBx2)	dbspace	dbspe2_2G

Figure 9-5 Redundant K580 (6 CPUs) with J-Box



L2000 (1 CPU) Standalone Configurations

Specifications This table lists the specifications for a standalone L2000 with one CPU.

Table 9-21 L2000 (1 CPU) Standalone Specifications

Item	Standalone without Mirrored Disk	Standalone with Mirrored Disk
Number of CPUs	1	1
HP-UX Version	HP-UX 11.0 (64 bit)	HP-UX 11.0 (64 bit)
Memory	1GB	2GB
Swap/Dump Space	2248MB	2248MB
Internal Disk	0	0
WaveStar SNMS Disk Space	90GB	360GB
Number of Disk Drives	five, 18GB drives	ten, 36GB drives
Additional Disk Space for TMF	Included (2GB)	Included (2GB)
DAT	DDS3x1	DDS3x1
CD-ROM Drive	DVDx1	DVDx1
SCSI Controller	2	2
PCI LAN (100BaseT)	2	2
X.25 (Optional)	N/A	N/A
Disk Enclosure	SC10	SC10
Bus Mode	Split Bus/Dual Connection	Split Bus/Dual Connection
Jumper Setting	01111	01111

L2000 Racking Specifications

HP has three specifications for server cabinets, which can be one of the following:

- E25 (25EIA units)
- E33 (33 EIA units)
- E41 (41 EIA units)

To better use floor space, the following table provides the racking specifications for L-Class server standalone configurations.

As an example, based upon the following specifications, two of any kind of L-Class servers can be put in one E33.

Table 9-22 L2000 (1 and 2 CPUs) Standalone Server Physical and Electrical Specifications

Item	Specification
Server	7 EIA
Smart Storage	2 EIA
Disk Enclosure	4 EIA
Total EIA Height	13 EIA
Total Power (at 220V)	< 15 Amps

18GB Disk Partitions for a Standalone L2000 (1 CPU)

This table shows the required disk partitions for standalone L2000 with one CPU. All file systems should be created as **Journal File System** type(**VxFS**).

Table 9-23 18GB Disk Partitions for a Standalone L2000 (1 CPU) Server

18GB Partition Number	Mount Point	Allocated Space
VG#0	Swap1/Dump / /stand /opt /var /usr /home /tmp	2248MB 512MB 104MB 1024MB 1024MB 1024MB 104MB 1024MB
VG#1	/ems	6GB
	/tools	600MB
	/reports	1.8GB
	/data	4GB
VG#2	dbspace	dbsp1_1G
	pmspace	pmsp{1-6}_2G
VG#3	dbspace	dbsp2_1G
	dbspace	dbsp3_1G
	pmspace	pmsp{7-12}_2G
	dbspace	dbspe1_1G
VG#4	nbspace	nbsp{1-2}_2G

36GB Disk Partitions for a Standalone L2000 (1 CPU)

This table shows the required disk partitions for standalone L2000 with one CPU. All file systems should be created as **Journal File System** type(**VxFS**).

Table 9-24 36GBx2 Mirrored Disk Partitions for a Standalone L2000 (1 CPU) Server

36GBx2 Partition Number	Mount Point	Allocated Space
VG00	Swap1/Dump / /stand /opt /var /usr /home /tmp	2248MB 512MB 104MB 1024MB 1024MB 1024MB 104MB 1024MB
VG01	/ems	6GB
	/tools	600MB
	/reports	1.8GB
	/data	4GB
	dbspace	dbsp2_1GB
	pmspace	pmsp{1-6}_2G
VG02	dbspace	dbsp1_1G
	dbspace	dbsp3_1G
	pmspace	pmsp{7-12}_2G
	dbspace	dbspe1_1G
VG03	nbspace	nbsp{1-2}_2G

L2000 (2 CPUs) Standalone and Redundant Configurations

Specifications This table lists the specifications for a standalone and redundant L2000 with two CPUs.

Table 9-25 L2000 (2 CPUs) Standalone Specifications

Item	Mirrored Standalone Specification	Redundant Specification
Number of CPUs	2	2
HP-UX Version	HP-UX 11.0 (64 bit)	HP-UX 11.0 (64 bit)
Memory	2GB	2GB
Swap/Dump Space	2248MB	2248MB
Internal Disk	0	0
WaveStar SNMS Disk Space	360GB	180GBx2
Number of Disk Drives	ten, 36GB drives	ten, 36GB drives
Additional Disk Space for TMF	Included (2GB)	Included
DAT	DDS3x1	12GB DDS
CD-ROM Drive	DVDx1	DVD
SCSI Controller	2	5
PCI LAN (100BaseT)	2	5
X.25 (Optional)	N/A	N/A
Disk Enclosure	SC10	SC10
Bus Mode	Split Bus/Dual Connection	Split Bus/Dual Connection
Jumper Setting	01111	01111

L2000 Racking Specifications

HP has three specifications for server cabinets, which can be one of the following:

- E25 (25EIA units)
- E33 (33 EIA units)
- E41 (41 EIA units)

To better use floor space, the following table provides the racking specifications for L-Class server standalone configurations.

As an example, based upon the following specifications, two of any kind of L-Class servers can be put in one E33.

Table 9-26 L2000 (2 CPUs) Standalone Server Physical and Electrical Specifications

Item	Specification
Server	7 EIA
Smart Storage	2 EIA
Disk Enclosure	4 EIA
Total EIA Height	13 EIA
Total Power (at 220V)	< 15 Amps

36GBx2 Mirrored Disk Partitions for a Standalone L2000 (2 CPUs)

This table shows the 36GBx2 mirrored disk partitions for a standalone L2000 with two CPUs.

Table 9-27 36GBx2 Mirrored Disk Partitions for a Standalone L2000 (2 CPUs)

36GBx2 Partition Number	Mount Point	Allocated Space
VG00	Swap1/Dump / /stand /opt /var /usr /home /tmp	2248MB 512MB 104MB 1024MB 1024MB 1024MB 104MB 1024MB
VG01	/ems	6GB
	/tools	600MB
	/reports	2GB
	/data	4GB
	dbspace	dbspe1_1G
	dbspace	dbsp2_1G
	pmspace	pmsp{1-7}_2G
VG02	dbspace	dbsp1_1G
	pmspace	pmsp{8-14}_2G
	dbspace	dbsp3_1G
	pmspace	pmsp{15-21}_2G
VG03	dbspace	dbsp4_1G
	pmspace	pmsp{22-28}_2G
	dbspace	dbsp5_2G
	dbspace	dbspe2_2G
	nbspace	nbsp1_2G

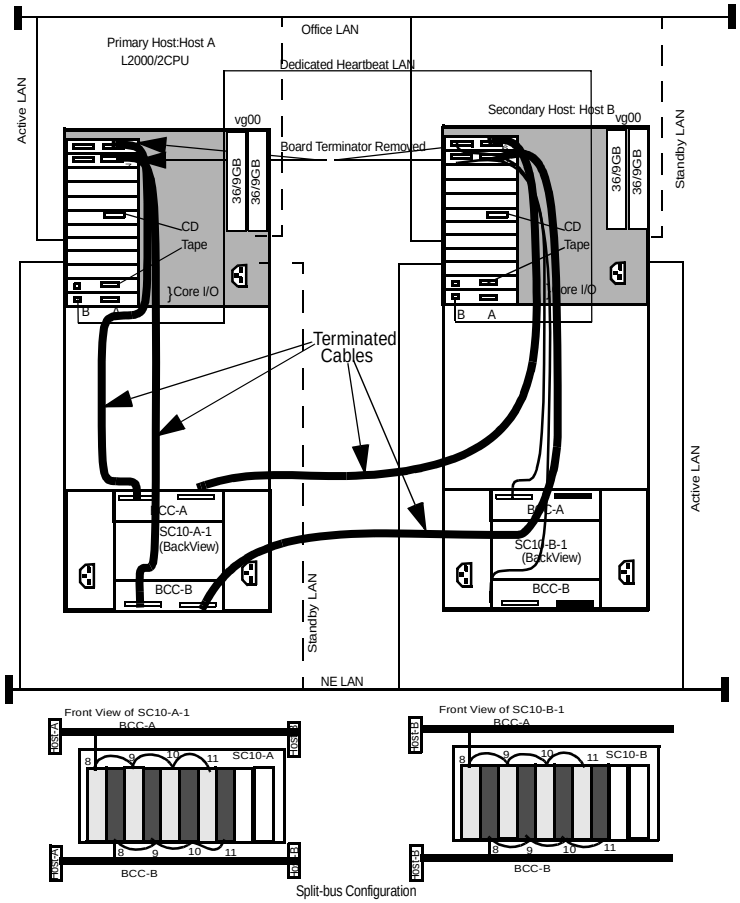
36GBx2 Mirrored Disk Partitions for a Redundant L2000 (2 CPUs)

This table shows the 36GBx2 mirrored disk partitions for a redundant L2000 with two CPUs.

Table 9-28 36GBx2 Mirrored Disk Partitions for a Redundant L2000 (2 CPUs)

36GBx2 Partition Number	Mount Point	Allocated Space
VG00	Swap1/Dump / /stand /opt /var /usr /home /tmp	2248MB 512MB 104MB 1024MB 1024MB 1024MB 104MB 1024MB
VG01	/ems	6GB
	/tools	600MB
	/reports	2GB
	/data	4GB
	dbspace	dbspe1_1G
	dbspace	dbsp2_1G
	pmspace	pmsp{1-7}_2G
VG02	dbspace	dbsp1_1G
	pmspace	pmsp{8-14}_2G
	dbspace	dbsp3_1G
	pmspace	pmsp{15-21}_2G
VG03	dbspace	dbsp4_1G
	pmspace	pmsp{22-28}_2G
	dbspace	dbsp5_2G
	dbspace	dbspe2_2G
	nbspace	nbsp1_2G
VG04*	cluster lock	cluster lock
* VG04 is on the shared 9GB disks that are used for cluster lock. It should be exported to the secondary host.		

Figure 9-6 L2000 (2 CPUs) Local Redundancy



L2000 (4 CPUs) Standalone and Redundant Configurations

Standalone and Redundant Specifications

This table lists the specifications for a standalone and redundant L2000 with four CPUs.

Table 9-29 L2000 (4 CPUs) Standalone and Redundant Specifications

Item	Mirrored Standalone Specification	Mirrored Redundant Specification
HP System Model	L2000	L2000-440
Number of CPUs	4	4
HP-UX Version	Release 11.0 (64 bit)	Release 11.0 (64 bit)
Memory	4GB	4GB
Swap/Dump Space	4296MB	4296MB
Internal Disk	0	0
WaveStar SNMS Disk Space	504GB	252GB x 2
Number of drives with PM	fourteen, 36GB drives	fourteen, 36GB drives
Additional Disk Space for TMF	Included (4GB)	Included
DAT	DDS 3 x 1	12GB DDS
CD-ROM Drive	DVD x 1	DVD
SCSI Controller	2	7
PCI LAN (100Base T)	2	5
X.25 (Optional)	N/A	N/A
Cabinet	1.25m	1.25m, 1/host
Disk Enclosure	SC10	SC10
Bus Mode	Split Bus/Dual Connection	Split Bus/Dual Connection
Jumper Setting	0111	0111

L-Class Server Racking Specifications

HP has three specifications for server cabinets, which can be one of the following:

- E25 (25EIA units)
- E33 (33 EIA units)
- E41 (41 EIA units)

To better use floor space, the following table provides the racking specifications for L-Class server standalone configurations.

As an example, based upon the following specifications, two of any kind of L-Class servers can be put in one E33.

Table 9-30 L2000 (4 CPUs) Standalone Server Physical and Electrical Specifications

Item	Specification
Server	7 EIA
Smart Storage	2 EIA
Disk Enclosure	4 EIA
Total EIA Height	13 EIA
Total Power (at 220V)	< 15 Amps

36GB Mirrored Disk Partitions for Standalone L2000 (4 CPUs)

This table shows the 36GB mirrored disk partitions for a standalone L2000 with four CPUs.

Table 9-31 36GB Mirrored Disk Partitions for a Standalone L2000 (4 CPUs)

36GBx2 Partition Number	Mount Point	Allocated Space
VG00	Swap1 / /stand /opt /var /usr /home /tmp	4296MB 512MB 104MB 1024MB 1024MB 1024MB 104MB 1024MB
VG01	/ems	6GB
	/data	10GB
	/reports	2GB
	/tools	600MB
	/work (all purpose)	4GB
	/var/opt/omni (optional)	4GB
VG02	dbspace	dbsp1_2G
	pmspace	pmsp{1-15}_2G
	dbspace	dbspe1_1G
VG03	dbspace	dbsp2_2G
	pmspace	pmsp{16-30}_2G
VG04	dbspace	dbsp3_2G
	pmspace	pmsp{31-45}_2G
VG05	dbspace	dbsp4_2G
	dbspace	dbspe2_2G
	pmspace	pmsp{46-60}_2G
VG06	dbspace	dbsp5_2G
	dbspace	dbsp6_2G
	nbspace	nbsp{1-2}_2G

36GBx2 Mirrored Disk Partitions for a Redundant L2000 (4 CPUs)

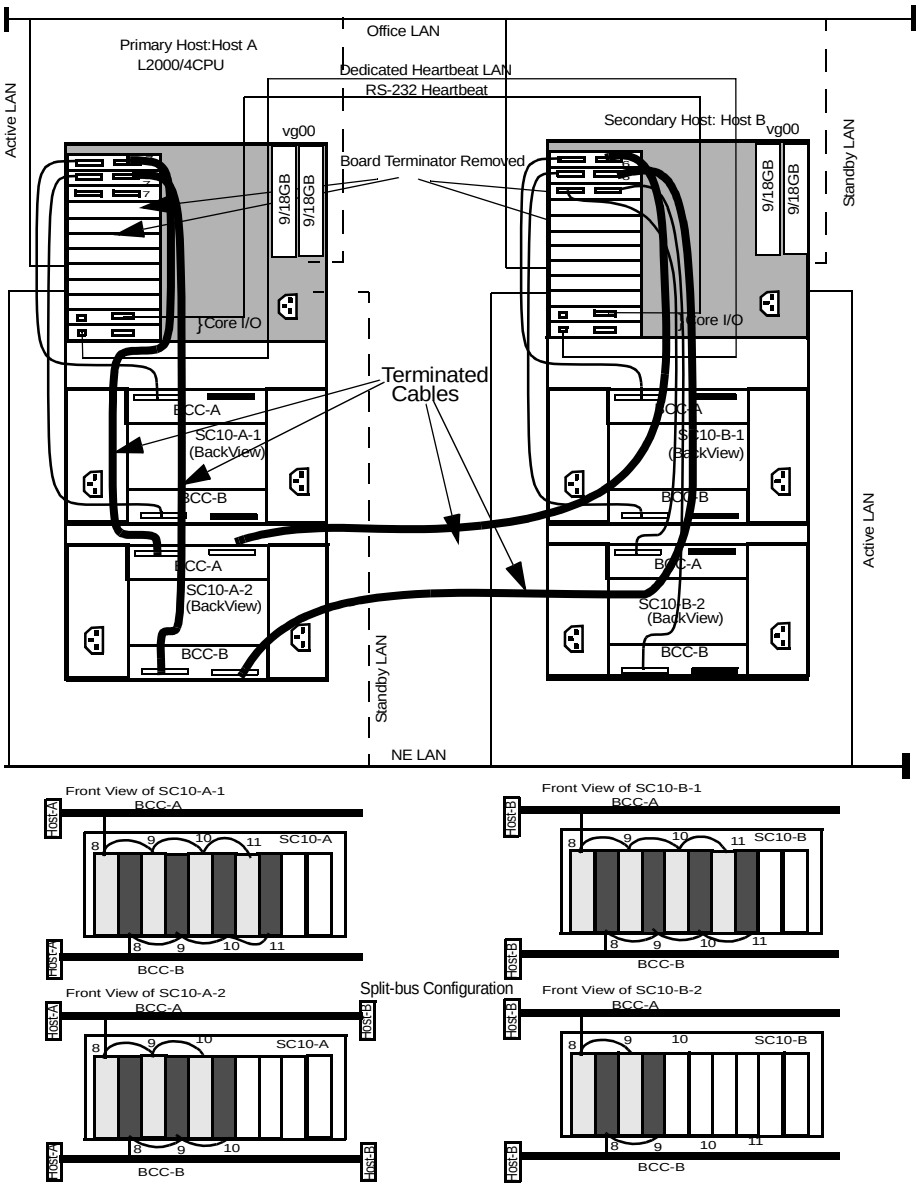
This table shows the 36GBx2 mirrored disk partitions for a redundant L2000 with four CPUs.

Table 9-32 36GBx2 Mirrored Disk Partitions for Redundant L2000 (4 CPUs)

36GBx2 Partition Number	Mount Point	Allocated Space
VG00	Swap1/Dump / /stand /opt /var /usr /home /tmp	4296MB 512MB 104MB 1024MB 1024MB 1024MB 104MB 1024MB
VG01	/ems	6GB
	/data	10GB
	/reports	2GB
	/tools	600MB
	/work (for all purposes)	4GB
	/var/opt/omni (optional)	4GB
VG02	dbspace	dbsp1_2G
	pmspace	pmsp{1-15}_2G
	dbspace	dbspe1_1G
VG03	dbspace	dbsp2_2G
	pmspace	pmsp{16-30}_2G
VG04	dbspace	dbsp3_2G
	pmspace	pmsp{31-45}_2G
VG05	dbspace	dbsp4_2G
	dbspace	dbspe2_2G
	pmspace	pmsp{46-60}_2G
VG06	dbspace	dbsp5_2G
	dbspace	dbsp6_2G
	nbspace	nbsp{1-2}_2G
VG07*	cluster lock	cluster lock

36GBx2 Partition Number	Mount Point	Allocated Space
*VG07 is on the shared 9GB disk that is used for cluster lock. It should be exported to the secondary host.		

Figure 9-7 Redundant L2000 (4 CPUs)



N4000 (8 CPUs) Standalone Configuration

Standalone Specifications

This table lists the specifications for a standalone N4000 with eight CPUs.

Table 9-33 N4000 (8 CPUs) Standalone Specifications

Item	Standalone Specification
HP System Model	N4000
Number of CPUs	8
HP-UX Version	HP-UX 11.0 (64 bit)
Memory	8GB
Swap/Dump Space	8392MB
Internal Disk	36GB / 9GB
WaveStar SNMS Disk Space	288GB
Number of Disk Drives	eight, 36GB
Additional Disk Space for TMF	Included (8GB)
DAT	DDS3x1
CD-ROM Drive	DVDx1
SCSI Controller	2
PCI LAN (100BaseT)	2
X.25 (Optional)	2 ACC MUX
Disk Enclosure	SC10
Bus Mode	Split Bus/Dual Connection
Jumper Settings	01111

N4000 Racking Specifications

HP has three specifications for server cabinets, which can be one of the following:

- E25 (25EIA units)
- E33 (33 EIA units)
- E41 (41 EIA units)

To better use floor space, the following table provides the racking specifications for N4000 server configuration. As an example, based upon the following specifications, two of any kind of N4000 configuration can be put in one E33.

Table 9-34 N4000 (8 CPUs) Physical and Electrical Specifications

Item	Specification
Server	10 EIA
Smart Storage	2 EIA
Disk Enclosure	4 EIA
Total EIA Height	16 EIA
Total Power (at 220V)	< 20 Amps

36GB Disk Partitions for a Standalone N4000

This table lists the 36GB disk partitions for a standalone N4000 (8 CPUs):

Table 9-35 36GB Disk Partitions for a Standalone N4000 (8 CPUs)

36GB Partition Number	Mount Point	Allocated Space
VG#0 (36GB/9GB)*	Swap1 / /stand /opt /var /usr /home /tmp	8392MB/2248MB 512MB 104MB 1024MB 1024MB 1024MB 104MB 1024MB
VG#1	/ems	6GB
	/data	10GB
	/reports	2GB
	/tools	600MB
	/work (all purpose)	4GB
	/var/opt/omni (optional)	4GB
VG#2	dbspace	dbsp1_2G
	Swap2	1024MB
	pmspace	pmsp{1-15}_2G
VG#3	dbspace	dbsp2_2G
	Swap3	1024MB
	pmspace	pmsp{16-30}_2G
VG#4	dbspace	dbsp3_2G
	Swap4	1024MB
	pmspace	pmsp{31-45}_2G
VG#5	dbspace	dbsp4_2G
	Swap5	1024MB
	pmspace	pmsp{46-50}_2G
	nbspace	nbsp{1-4}_2G

36GB Partition Number	Mount Point	Allocated Space
VG#6	dbspace	dbsp5_2G
	Swap6	1024MB
VG#7	dbspace	dbsp6_2G
	Swap7	1024MB
VG#8	dbspace	dbsp7_2G
	dbspace	dbsp8_2G
	dbspace	dbsp9_2G
	dbspace	dbsp10_2G
	dbspace	dbspe2_2G
	pmspace	pmsp{51-60}_2G
* If the 36GB disk is used as the root disk, set the Swap1/Dump equal to the memory size to accommodate the system core dump. If the 9GB disk is used as the root disk, set the Swap1/Dump 2248MB for standard		

F Checklists and Worksheets

Overview

Purpose The following checklists and worksheets will help you to gather essential information that is needed to upgrade existing systems and to install redundant systems.

- CD-ROM Checklist
- License Checklist
- Hardware/Software Checklist
- Hardware Planning per Node Worksheet
- Volume Group and Physical Volume per Node Worksheet
- Local Cluster Configuration Planning Worksheet
- Redundant Installation Worksheet
- installHA Worksheet
- WaveStar SNMS Upgrade Worksheets and Checklists

CD-ROM Checklist

Checklist For a complete installation of a new system for this release of WaveStar SNMS, you will need the following CD-ROMs:

✔	CD-ROMs Needed	Description
	WaveStar SNMS Core OS CD-ROM	Contains WaveStar SNMS Core OS for 32-bit HP® K-Series Servers and WaveStar SNMS Core OS for 64-bit HP L-Series and N-Series Servers.
	HP OpenView DM CD-ROM	Optional and user supplied. HP OpenView is used only for the WaveStar OLS 400G/800G NEs.
	WaveStar SNMS High Availability (HA) CD-ROM Release 6.0	Contains the MirrorDisk, HA Monitor, EMS, and MC/ServiceGuard.
	WaveStar SNMS Tools CD-ROM	Contains Informix, Orbix, and Perl
	WaveStar SNMS Application CD-ROM	Contains the ColdStart utility and the Application
	WaveStar SNMS GUI Client CD-ROMs	One CD-ROM is for a Windows NT desktop and the other CD-ROM is for an HP-UX desktop.
	WaveStar SNMS Northbound Telecommunications Management Forum (TMF) CORBA® Interface	

License Checklist

Checklist For a complete installation of a new system for this release of WaveStar SNMS, you will need the following licenses/codes:

✔	**License Needed**
	Informix® Dynamic Server serial number, license, and key
	HP OpenView license for your machine (optional—for CMIS NE only)
	ATOS license for your machine
	HP MirrorDisk/UX (optional)
	HP MC/ServiceGuard (optional)
	HP HA Monitor (optional)

Hardware/Software Checklist

Checklist For a complete installation of a new system for this release of WaveStar SNMS, you will need the following hardware/software items:

✔	**Hardware/Software Needed**
	a LAN interface card for host access
	a host IP address
	a subnet mask for the host IP
	a LAN interface card for Open Systems Interconnect (OSI)
	an IP address for the southbound LAN
	a subnet mask for OSI LAN IP
	a laptop PC and a serial cable to install the WebConsole on HP L-Series and N-Series servers
	the IP address and subnet mask for the WebConsole, if the WebConsole is used

Hardware Planning per Node Worksheet

HARDWARE WORKSHEET			
SPU Information			
S800 Host Name:		S800 Series No. :	
Memory Capacity:		Number of I/O Slots:	
LAN Information			
Name of Subnet:	Name of Interface:	IP Address	Traffic Type: Heartbeat/Client/NE/Standby/ Other ( )
Name of Subnet:	Name of Interface:	IP Address	Traffic Type: Heartbeat/Client/NE/Standby/ Othe ( )
Name of Subnet	Name of Interface:	IP Address	Traffic Type: Heartbeat/Client/NE/Standby/ Other ( )
Name of Subnet:	Name of Interface:	IP Address	Traffic Type: Heartbeat/Client/NE/Standby/ Othe r( )
Serial (RS232) Heartbeat Interface Information			
Node Name:		RS232 Device File:	
Node Name:		RS232 Device File:	
Disk I/O Information for Shared Disks			
Bus Type: SCSI	SLot Number:	Bus Address:	Device File Name:
Bus Type: SCSI	SLot Number:	Bus Address:	Device File Name:
Bus Type: SCSI	SLot Number:	Bus Address:	Device File Name:
Bus Type: SCSI	SLot Number:	Bus Address:	Device File Name:

HARDWARE WORKSHEET			
Bus Type: SCSI	SLot Number:	Bus Address:	Device File Name:
Bus Type: SCSI	SLot Number:	Bus Address:	Device File Name:
Bus Type: SCSI	SLot Number:	Bus Address:	Device File Name:
Bus Type: SCSI	SLot Number:	Bus Address:	Device File Name:

Volume Group and Physical Volume per Node Worksheet

Node Name:	
Volume Group Name: **/dev/vg00**	
Name of First Physical Volume Group:	Name of Second Physical Volume group:
Physical Volume Name:	Physical Volume Name:
Physical Volume Name:	Physical Volume Name:
Physical Volume Name:	Physical Volume Name:
Physical Volume Name:	Physical Volume Name:
Volume Group Name: **/dev/vg01**	
Name of First Physical Volume Group:	Name of Second Physical Volume group:
Physical Volume Name:	Physical Volume Name:
Physical Volume Name:	Physical Volume Name:
Physical Volume Name:	Physical Volume Name:
Physical Volume Name:	Physical Volume Name:
Volume Group Name: **/dev/vg02**	
Name of First Physical Volume Group:	Name of Second Physical Volume group:
Physical Volume Name:	Physical Volume Name:
Physical Volume Name:	Physical Volume Name:
Physical Volume Name:	Physical Volume Name:
Physical Volume Name:	Physical Volume Name:
Volume Group Name: **/dev/vg03**	
Name of First Physical Volume Group:	Name of Second Physical Volume group:
Physical Volume Name:	Physical Volume Name:
Physical Volume Name:	Physical Volume Name:
Physical Volume Name:	Physical Volume Name:
Physical Volume Name:	Physical Volume Name:
Volume Group Name: **/dev/vg04**	
Name of First Physical Volume Group:	Name of Second Physical Volume group:
Physical Volume Name:	Physical Volume Name:

Node Name:	
Physical Volume Name:	Physical Volume Name:
Physical Volume Name:	Physical Volume Name:
Physical Volume Name:	Physical Volume Name:
Volume Group Name: **/dev/vg05**	
Name of First Physical Volume Group:	Name of Second Physical Volume group:
Physical Volume Name:	Physical Volume Name:
Physical Volume Name:	Physical Volume Name:
Physical Volume Name:	Physical Volume Name:
Physical Volume Name:	Physical Volume Name:
Volume Group Name: **/dev/vg06**	
Name of First Physical Volume Group:	Name of Second Physical Volume group:
Physical Volume Name:	Physical Volume Name:
Physical Volume Name:	Physical Volume Name:
Physical Volume Name:	Physical Volume Name:
Physical Volume Name:	Physical Volume Name:
Volume Group Name: **/dev/vg07**	
Name of First Physical Volume Group:	Name of Second Physical Volume group:
Physical Volume Name:	Physical Volume Name:
Physical Volume Name:	Physical Volume Name:
Physical Volume Name:	Physical Volume Name:
Physical Volume Name:	Physical Volume Name:
Volume Group Name: **/dev/vg**	
Name of First Physical Volume Group:	Name of Second Physical Volume group:
Physical Volume Name:	Physical Volume Name:
Physical Volume Name:	Physical Volume Name:
Physical Volume Name:	Physical Volume Name:
Physical Volume Name:	Physical Volume Name:
Volume Group Name: **/dev/vg**	
Name of First Physical Volume Group:	Name of Second Physical Volume group:

Node Name:	
Physical Volume Name:	Physical Volume Name:
Physical Volume Name:	Physical Volume Name:
Physical Volume Name:	Physical Volume Name:
Physical Volume Name:	Physical Volume Name:
Volume Group Name: **/dev/vg**	
Name of First Physical Volume Group:	Name of Second Physical Volume group:
Physical Volume Name:	Physical Volume Name:
Physical Volume Name:	Physical Volume Name:
Physical Volume Name:	Physical Volume Name:
Physical Volume Name:	Physical Volume Name:
Volume Group Name: **/dev/vg**	
Name of First Physical Volume Group:	Name of Second Physical Volume group:
Physical Volume Name:	Physical Volume Name:
Physical Volume Name:	Physical Volume Name:
Physical Volume Name:	Physical Volume Name:
Physical Volume Name:	Physical Volume Name:
Volume Group Name: **/dev/vg**	
Name of First Physical Volume Group:	Name of Second Physical Volume group:
Physical Volume Name:	Physical Volume Name:
Physical Volume Name:	Physical Volume Name:
Physical Volume Name:	Physical Volume Name:
Physical Volume Name:	Physical Volume Name:
Volume Group Name: **/dev/vg**	
Name of First Physical Volume Group:	Name of Second Physical Volume group:
Physical Volume Name:	Physical Volume Name:
Physical Volume Name:	Physical Volume Name:
Physical Volume Name:	Physical Volume Name:
Physical Volume Name:	Physical Volume Name:
Volume Group Name: **/dev/vg**	

Node Name:	
Name of First Physical Volume Group:	Name of Second Physical Volume group:
Physical Volume Name:	Physical Volume Name:
Physical Volume Name:	Physical Volume Name:
Physical Volume Name:	Physical Volume Name:
Physical Volume Name:	Physical Volume Name:
Volume Group Name: **/dev/vg**	
Name of First Physical Volume Group:	Name of Second Physical Volume group:
Physical Volume Name:	Physical Volume Name:
Physical Volume Name:	Physical Volume Name:
Physical Volume Name:	Physical Volume Name:
Physical Volume Name:	Physical Volume Name:
Volume Group Name: **/dev/vg**	
Name of First Physical Volume Group:	Name of Second Physical Volume group:
Physical Volume Name:	Physical Volume Name:
Physical Volume Name:	Physical Volume Name:
Physical Volume Name:	Physical Volume Name:
Physical Volume Name:	Physical Volume Name:
Volume Group Name: **/dev/vg**	
Name of First Physical Volume Group:	Name of Second Physical Volume group:
Physical Volume Name:	Physical Volume Name:
Physical Volume Name:	Physical Volume Name:
Physical Volume Name:	Physical Volume Name:
Physical Volume Name:	Physical Volume Name:
Volume Group Name: **/dev/vg**	
Name of First Physical Volume Group:	Name of Second Physical Volume group:
Physical Volume Name:	Physical Volume Name:
Physical Volume Name:	Physical Volume Name:
Physical Volume Name:	Physical Volume Name:
Physical Volume Name:	Physical Volume Name:

Node Name:	
Volume Group Name: **/dev/vg**	
Name of First Physical Volume Group:	Name of Second Physical Volume group:
Physical Volume Name:	Physical Volume Name:
Physical Volume Name:	Physical Volume Name:
Physical Volume Name:	Physical Volume Name:
Physical Volume Name:	Physical Volume Name:

Local Cluster Configuration Planning Worksheet

Cluster Configuration Worksheet	
Cluster Name:	Virtual IP Address for sncPkg:
Primary Node Name:	subnet for sncPkg:
Secondary Node Name:	Cluster Volume Groups:
Information for Primary Node	Information for Secondary Node
Active Office LAN Name:	Active Office LAN Name:
Active Office LAN IP:	Active Office LAN IP:
Standby Office LAN Name:	Standby Office LAN Name:
Dedicated Heartbeat LAN name:	Dedicated Heartbeat LAN name:
Dedicated Heartbeat LAN IP:	Dedicated Heartbeat LAN IP:
Active OSI/TCPIP LAN name:	Active OSI/TCPIP LAN name:
Active OSI/TCPIP LAN IP:	Active OSI/TCPIP LAN IP:
Standby OSI/TCPIP LAN name:	Standby OSI/TCPIP LAN name:
Subnet Address for OSI LAN:	Subnet Address for OSI LAN:
Heartbeat Serial Device File:	Heartbeat Serial Device File:
Physical Volume name for the Cluster Lock Disk:	Physical Volume name for the Cluster Lock Disk:
First Lock Volume group:	

Cluster Configuration Worksheet		
Number of Shared Volume Groups:		
Remote Cluster Name:		
Primary Node Name:		
Secondary Node Name:		
Information for Remote Primary Node	Information for Remote Secondary Node	
Active Office LAN Name:	Active Office LAN Name:	
Active Office LAN IP:	Active Office LAN IP:	
Heartbeat Interval	2 sec	
Node Timeout	4 sec	
Network Polling Interval	2 sec	
Autostart Delay	0 sec	

Redundant Installation Worksheet

Worksheet Supply the names of the device files for the volume groups on the primary and standby servers.

Volume Group	Primary	Standby
Vg00 (root)		
Vg01		
Vg02		
Vg03		
Vg04		
Vg05		
Vg06		
Vg07		
Vg08		
Vg09		
Vg10		
Vg11		
Vg12		
Vg13		
Vg14		
Vg15		
Vg16		
Vg17		
vg18		
Vg19		
Vg20		

installHA Worksheet

Checklist Supply the needed information for the primary and standby servers.

Item	Primary	Standby
Machine Name		
Primary NB LAN Interface		
Primary NB LAN IP		
Standby/Backup NB LAN Interface		
Subaddress (from `netstat -in` NB)		
Primary SB LAN Interface		
Primary SB LAN IP		
Standby/Backup SB LAN		
Dedicated Heartbeat LAN		
Dedicated Heartbeat IP		
Dedicated HB Serial		
Floating IP Address		
Physical Volume Name (dev/dks/c2t5d0)		
Cluster Lock Volume Group (/dev/vg12)		

WaveStar SNMS Upgrade Worksheets and Checklists

Host information worksheet

Supply the following information for the host server being used in the configuration.

Host Information	
Host Name and System ID (uname -a)	
Host IP Address Local LAN (nslookup hostname)	
SCSI Address	
Subnetwork Mask	
Gateway IP (/etc/rc.config.d/netconf)	

Checklist of files to be copied (tar cv)

The files listed in the following table are those to be copied.

Files to be Copied (tar cv)		
✔	**File Location**	**Description**
	/home	User information for HP-UX 10.0
	/etc/hosts	IP information
	/etc/passwd	Login information
	/etc/group	Group information
	/opt/OV/osiam/osiam26F/license.dat	ATOS license file
	/var/opt/ifor/nodelock	HP OpenView License
	/ems/etc/SDSenv_rc	DIB information
	/ems/installEms.out	Configuration information
	/ems/etc/CM_Server.cfg	CM configuration file
	/ems/etc/400gr2Config.txt	400G file OpenLink License
	/ems/dsa	DSA directory
	/var/adm/sw/ .codewords	HP Codewords

Checklist of files used in redundancy configurations

The following checklist shows the files that are used in redundancy configurations.

Files Used for Redundancy Configurations		
✔	**Location**	**Description**
	/ems/HA/LOC/config/cluster.conf	installHA history
	/ems/etc/HA_Topology.cfg	Topology information
	/etc/cmcluster/sncCluster.ascii	Cluster configuration
	/etc/cmcluster/pkglist	Package list
	/etc/cmcluster/packages/pkgSnc.conf	SNC package information
	/etc/cmcluster/packages/pkgStandby.conf	Standby package information

Backup files for redundancy

The following table lists the command iterations needed to create a set of files that contain enough information to recreate pertinent information from scratch should the need arise.

Recreation Files		
✔	**Command Iteration**	**Description**
	dsp ne_ne> sel.rsf	Database information
	dsp sds_ne > sds.rsf	400G NASP information
	dsp sds_ae >> sds.rsf	400G NSAP information
	lanscan > lan.out	Shows mac and dn/up
	cat /etc/rc.config.d/netconf >> lan.out	LAN configuration file
	/etc/lvmtab	Disk layout
	ifconfig lan? >> lan.out	Use this command sequence for each LAN card configured
	vgdisplay -v > vg.out	Machine setup

Checklist of Files for R3.0 and Later Support

The following table contains files that are useful for R3.0 and later support.

Files for R3.0 and Later		
✔	**Location**	**Description**
	/etc/x25/x25_config	X.25 information
	/opt/acc/cfg/x25_config.answ	X.25 information
	/etc/inittab	SAAI data

Index

X