HP-UX 11i v1 Installation and Update Guide

HP Servers and Workstations

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This product includes cryptographic software written by Eric Young (**`eay@cryptsoft.com`**).

This product includes PHP, freely available from the PHP Group (**`http://www.php.net`**).

This product includes software developed by the OpenLDAP Project (**`http://www.openldap.org`**).

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About This Document

This guide describes installing (called **cold-installing**) and updating your HP 9000 system to the latest release of HP-UX 11i v1.

The document printing date and part number indicate the document's current edition. The printing date will change when a new edition is printed. Minor changes may be made at reprint without changing the printing date. The document part number will change when extensive changes are made. Document updates may be issued between editions to correct errors or document product changes.

The latest version of this document can be found online at the HP Technical Documentation Web site:

`http://docs.hp.com/`

Intended Audience

This document is intended for system administrators responsible for installing, configuring, and managing HP-UX 11i v1 on HP 9000 systems. Administrators are expected to have knowledge of operating system concepts, commands, and configuration.

This document is not a tutorial.

Publishing History

To ensure that you receive the latest edition, you should subscribe to the appropriate product support service. Contact your HP sales representative for details.

Table 1 Publishing History Details

Document Manufacturing Part Number	Operating Systems Supported	Supported Product Versions	Publication Date
5991-2805	HP-UX 11i v1	B.11.11	September 2005
5991-0662	HP-UX 11i v1	B.11.11	December 2004
5990-7279	HP-UX 11i v1	B.11.11	June 2004

Document Organization

The *HP-UX 11i Version 1 Installation and Update Guide* is divided into many chapters and appendixes, which contain information about installing and updating HP-UX 11i v1.

IMPORTANT The *Read Before Installing or Updating to HP-UX 11i Version 1* DVD booklet that comes with the HP-UX 11i v1 media contains last-minute cold-install and update information that was not available when this guide was published. Make sure to review the booklet before continuing.

- Chapter 1, "Welcome to HP-UX 11i Version 1," on page 25

  Use this chapter to learn about the media kit contents and Operating Environments of HP-UX 11i v1 (B.11.11).

- Chapter 2, "System Requirements for Cold-Installing and Updating," on page 31

  Use this chapter to learn about the system requirements either to cold-install or update to HP-UX 11i v1.

- Chapter 3, "Choosing an Installation Method," on page 49

  Use this chapter to help you decide the most appropriate method to install HP-UX 11i v1 on your system.

- Chapter 4, "Preparing to Install or Update to HP-UX 11i v1," on page 59

  Use this chapter to learn the details of the required and recommended tasks to prepare your system for HP-UX 11i v1.

- Chapter 5, "Cold-Installing HP-UX 11i v1," on page 71

  Use this chapter to learn how to cold-install the HP-UX 11i v1 Operating System (OS) and selected Operating Environment (OE). Alternative cold-install methods such as installing from depots or from golden images are also discussed.

- Chapter 6, “Updating to HP-UX 11i v1,” on page 87

  Use this chapter to learn how to update your system to HP-UX 11i v1 using the `update-ux` command. Several examples are provided to assist you with your update scenario.

- Chapter 7, “Installing HP Applications and Patches,” on page 111

  Use this chapter to learn how to update applications on your system that are not installed or updated with HP-UX 11i v1 Operating Environments.

- Chapter 8, “Verifying System Install or Update,” on page 117

  Use this chapter to learn how to verify a successful install or update to HP-UX 11i v1.

- Appendix A, “Booting HP Servers and Workstations,” on page 123

  Use this appendix to learn about booting various HP servers and workstations using the built-in Boot ROM firmware interface.

- Appendix B, “Known Problems and Troubleshooting,” on page 133

  Use this appendix to learn about the known problems and troubleshooting steps for the install and update.

- Appendix C, “HP-UX 11i v1 Software Bundles,” on page 175

  Use this appendix to learn about the Operating Environments (OEs) and media contents.

- Appendix D, “Configuring Built-In PCI Networking,” on page 187

  Use this appendix to learn how to configure built-in (or core) PCI networking cards in HP Servers and Workstations.

- Appendix E, “Controlling Memory Utilization of VxFS 3.5 on HP-UX 11i v1,” on page 195

  Use this appendix to learn about the effect of two VxFS tunables, `vx_ninode` and `vxfs_bc_bufhwm`, on system memory consumption and learn about the guidelines on setting them for machines with relatively low RAM.

Typographical Conventions

This document uses the following conventions:

audit (5)	An HP-UX manpage. In this example, *audit* is the name and *5* is the section in the *HP-UX Reference*. On the web and on the Instant Information CD, it may be a hot link to the manpage itself. From the HP-UX command line, you can enter "`man audit`" or "`man 5 audit`" to view the manpage. See *man* (1).
Book Title	The title of a book. On the web and on the Instant Information CD, it may be a hot link to the book itself.
KeyCap	The name of a keyboard key. Note that **Return** and **Enter** both refer to the same key.
Emphasis	Text that is emphasized.
Bold	Text that is strongly emphasized.
Bold	The defined use of an important word or phrase.
`ComputerOut`	Text displayed by the computer.
`UserInput`	Commands and other text that you type.
`Command`	A command name or qualified command phrase.
`Variable`	The name of a variable that you may replace in a command or function or information in a display that represents several possible values.
`[ ]`	The contents are optional in formats and command descriptions. If the contents are a list separated by `|`, you must choose one of the items.
`{ }`	The contents are required in formats and command descriptions. If the contents are a list separated by `|`, you must choose one of the items.
...	The preceding element may be repeated an arbitrary number of times.
|	Separates items in a list of choices.

HP-UX Release Name and Release Identifier

Each HP-UX 11i release has an associated release name and release identifier. The *uname* (1) command with the -r option returns the release identifier. Table 2 lists the releases available for HP-UX 11i.

Table 2 HP-UX 11i Releases

Release Identifier	Release Name	Supported Processor Architecture
B.11.11	HP-UX 11i v1	PA-RISC
B.11.20	HP-UX 11i v1.5	Intel® Itanium®
B.11.22	HP-UX 11i v1.6	Intel® Itanium®
B.11.23	HP-UX 11i v2	PA-RISC and Intel® Itanium®

Related Documents

This section discusses documentation for, and other sources of information about, HP-UX 11i v1.

HP-UX 11i v1 Resources

The following sources provide detailed information about HP-UX 11i v1:

- **HP-UX 11i v1 Instant Information CD**

  The Instant Information CD provides HP-UX documentation supporting the release.

- **Manual Pages**

  For the HP-UX 11i v1 release, the manual pages (manpages) are available on the HP-UX Welcome Page of your system, on the Instant Information CD in the *HP-UX Reference* document, through the use of the `man` command, and at the HP Technical Documentation Web site:
  `http://docs.hp.com/hpux/os/11iv1#HP-UX%20Reference%20%28Manpages%29`

- **HP-UX Welcome Page**

  The HP-UX Welcome Page on your HP-UX 11i v1 system contains pointers to information to help you use your HP-UX system.

- **Release Notes**

  The *HP-UX 11i Version 1 Release Notes* describes what is new, has changed, and has been deprecated or obsoleted in the current release compared to the previous HP-UX 11i v1 release.

  You can find the release notes in the following locations:

  — HP-UX Instant Information CD. See “Media Kit Contents” on page 26 for more information.

  — The HP Technical Documentation Web site:

  `http://docs.hp.com/`

  Here you will find the release notes pertinent to all previous releases of HP-UX, as well as release notes for various individual products.

- **README (Read Before Installing) Documents**

  README documents or Read Before Installing (RBI) media booklets contain information about the installation process that may not appear in this *HP-UX 11i Version 1 Installation and Update Guide*. Any product contained in the release may have a README document, so several README documents may be included. The *Read Before Installing or Updating to HP-UX 11i Version 1* booklet is included with your media kit.

The following references assume you know how to mount a DVD on your system. Files located on mounted DVD drives are referenced as *dvd_mount_point*, followed by the file path on the DVD media.

NOTE

If you plan to read the HP-UX 11i v1 DVDs on an HP-UX 11i v1 system, then you need to install the PHKL_28025 patch.

The PHKL_28025 patch is in the GOLDBASE11i bundle as of June 2003, which you can find on the Support Plus media for HP-UX 11i v1 or at the IT Resource Center Web site:

http://itrc.hp.com

The PHKL_28025 patch supersedes PHKL_25760.

- **Bundle Readme Files**

  Bundle readme files (in text and HTML formats) contain additional installation instructions, notes about problems in current and previous releases, a list of patches and their dependencies, and changes since the last release. You can print or view these files directly from the DVD, for example:

  more /*dvd_mount_point*/DOCS/PATCH/QPK1111.readme.html

- **Patch Text Files**

  Patch text files for all patches are on the DVD in the */dvd_mount_point*/DOCS/PATCH/TEXT_FILES directory. These files provide detailed information about the patch. Patch text files are also included with individual patches that you retrieve from HP.

TIP

To simplify sharing of patch information, you may want to copy the documentation files onto your own system. The hyperlinks from the HTML bundle readme files to the patch text files work as long as the HTML files reside in the same directory as the `TEXT_FILES` subdirectory.

- **White Papers on HP-UX**

  White papers associated with the HP-UX 11i v1 release are available at the HP Technical Documentation Web site:

  `http://docs.hp.com/hpux/os/11iv1`

  Other white papers, including an HP-UX 11i v1 overview, can be found at the HP-UX Information Library at the HP Web site:

  `http://www.hp.com/products1/unix/operating/infolibrary/index.html`

You can find additional information about HP-UX 11i v1 at the HP Technical Documentation Web site in the **HP-UX 11i v1 operating environments** collection under **Installing and Updating**:

`http://www.docs.hp.com/hpux/os/11iv1/index.html#Installing%20and%20Updating`

Other documents in this collection include:

- *Managing Systems and Workgroups: A Guide for HP-UX System Administrators*
- *Patch Management User Guide for HP-UX 11.x Systems*
- *Ignite-UX Administration Guide*
- *Software Distributor Administration Guide*
- *Software Package Builder 1.0 User's Guide*
- *HP System Partitions Guide*
- *HP-UX 11i Version 1 Reference*

Some or all of these documents are available on the Instant Information CD and in printed form.

Third-Party Resources

You can find additional information about HP-UX 11i v1 in *Disk and File Management Tasks on HP-UX* — Prentice-Hall, Hewlett-Packard Professional Books, 1997.

Other HP Web Resources

The following Web sites provide a variety of information regarding the HP-UX 11i v1 release:

- HP Workstations and HP 9000 Servers:
  - — For workstations:

    http://www.hp.com/workstations/
  - — For servers:

    http://www.hp.com/products1/unix/operating/
- HP Software Depot:

  http://www.hp.com/go/softwaredepot
- Software Availability Matrix:

  http://www.hp.com/go/softwareinfo/MATRIX
- After installation of HP-UX 11iv1, all HP-specific documentation is included in the HP Apache-based Web Server software:

  http://*yourserver*.com/hp_apache_docs

  Or you can find it in the `/opt/apache/hp_apache_docs/` directory. The latest information for the HP Apache-based Web Server is at the following Web site:

  http://www.hp.com/go/webserver
- HP Technical Documentation feedback form:

  http://docs.hp.com/en/feedback.html
- HP-UX 11i v1 documentation, including release notes, guides, and white papers:

  http://docs.hp.com/hpux/os/11iv1

- HP-UX 11i v1 information:

  http://forums.itrc.hp.com

  http://www.hp.com

- *Patch Management User Guide for HP-UX 11.x Systems:*

  http://docs.hp.com

- HP-UX patches and patch information from the HP IT Resource Center Web site:

  http://itrc.hp.com

  Select **maintenance and support (hp products)** then select the appropriate patching tools. To receive HP Security Bulletins, under **maintenance and support (hp products)**, select **subscribe to security bulletins & patch digests**.

- HP-UX Software Transition Kit:

  http://devresource.hp.com/STK

- High-availability products:

  http://docs.hp.com/hpux/ha

- Ignite-UX information and download:

  http://docs.hp.com/en/IUX

- Latest hardware support tools (diagnostics) information, including STM and EMS Hardware Monitors:

  http://docs.hp.com/hpux/diag

- International information:

  http://www.hp.com

  Select a country or region if you are not automatically directed.

- Localized user guides:

  http://docs.hp.com

  Use the navigation menu to select a language.

- Safety and ergonomic information:

  http://www.hp.com/ergo

- Software Distributor:

  http://www.docs.hp.com/en/SD/

- Support Plus web site:
  http://www.hp.com/go/softwareinfo/SUPPORT_PLUS

- System administration for HP-UX systems:

  http://docs.hp.com/hpux/os/11iv1

  http://forums.itrc.hp.com

- System firmware:

  http://docs.hp.com/en/oshpux11i.html#System%20Firmware

HP Encourages Your Comments

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Please send comments to: **http://docs.hp.com/en/feedback.html**

Please include document title, manufacturing part number, and any comment, error found, or suggestion for improvement you have concerning this document. Also, please include what we did right so we can incorporate it into other documents.

1 Welcome to HP-UX 11i Version 1

HP-UX 11i Version 1, for the PA-RISC architecture, offers a full range of HP-UX Operating Environments (OEs), including systems management and high-availability software products.

This chapter introduces you to the media kit contents and Operating Environments of HP-UX 11i Version 1 (B.11.11). The HP-UX 11i v1 OEs are integrated and tested software solutions containing the operating system and selected applications.

What You Will Find in This Chapter

- "Media Kit Contents" on page 26
- "HP-UX 11i v1 Operating Environments" on page 28
- "The Next Step" on page 30

Media Kit Contents

This guide is part of the HP-UX 11i v1 media kit, which includes the following CDs, DVDs, and documents:

- **HP-UX 11i v1 (B.11.11) CD or DVD** — Contains the HP-UX Operating System (OS), Operating Environments (OEs), required networking software, Update-UX, Ignite-UX, and online diagnostics.
- **HP-UX 11i v1 Support Plus CD** — Contains the current HP-UX 11i v1 patch bundles and `OnlineDiag` bundle to fix defects and enable new hardware.
- **HP-UX 11i v1 (B.11.11) Applications CD or DVD** — Contains HP-UX application software.
- **HP-UX 11i v1 Instant Information CD** — Contains HP-UX manuals, release notes, and white papers. See the CD booklet for more information.
- **HP-UX 11i v1 Internet Express CD or DVD** — Contains a collection of Open Source Web, Internet, and security services that have been tested and qualified on HP-UX.
- ***Read Before Installing or Updating to HP-UX 11i Version 1*** — Provides last-minute information for HP-UX 11i v1. Read this booklet before cold-installing or updating HP-UX. The booklet is also available at the HP Technical Documentation Web site:

  `http://docs.hp.com/hpux/os/11iv1`

- ***HP-UX 11i Version 1 Release Notes*** — Describes new features and functionality changes for HP-UX 11i v1. Release Notes are available on the Instant Information CD and at the HP Technical Documentation Web site:

  `http://docs.hp.com/hpux/os/11iv1`

- ***HP-UX 11i Version 1 Installation and Update Guide*** (this document) — Describes the media kit and instructions to cold-install or update to the latest release of HP-UX. The guide is also available at the HP Technical Documentation Web site:

  `http://docs.hp.com/hpux/os/11iv1`

NOTE

If you plan to read the HP-UX 11i v1 DVDs on an HP-UX 11i v1 system, or to cold-install HP-UX 11i v1 from a depot on an HP-UX 11i v1 system, then you need to install the `PHKL_28025` patch. See "Problems Reading HP-UX 11i v1 DVD Media" on page 157 for information on mounting the HP-UX 11i v1 DVD.

The `PHKL_28025` patch is in the `GOLDBASE11i` bundle as of June 2003, which you can find on the Support Plus media for HP-UX 11i v1 or at the IT Resource Center Web site:

`http://itrc.hp.com`

The `PHKL_28025` patch supersedes `PHKL_25760`.

HP-UX 11i v1 Operating Environments

Operating Environments (OEs) are tested and integrated application bundles designed to work with the operating system and provide the functionality needed for your system's purpose. The following OEs are included on the HP-UX 11i v1 (B.11.11) DVD:

- **HP-UX 11i v1 Foundation OE (FOE)** — Designed for the demands of Web servers, content servers, and front-end servers, this OE includes applications such as HP-UX Web Server Suite, Java™ 2 Standard Edition technology, and Mozilla Application Suite. This OE is bundled as `HPUX11i-OE`.
- **HP-UX 11i v1 Enterprise OE (EOE)** — Designed for database application servers and logic servers, this OE contains the HP-UX 11i v1 Foundation OE bundles and additional applications such as `GlancePlus Pak` to enable an enterprise-level server. This OE is bundled as `HPUX11i-OE-Ent`.
- **HP-UX 11i v1 Mission Critical OE (MCOE)** — Designed for the large, powerful, back-end application servers and database servers that access customer files and handle transaction processing, this OE contains the Enterprise OE bundles, plus applications such as HP Serviceguard and Workload Manager to enable a mission-critical server. This OE is bundled as `HPUX11i-OE-MC`.
- **HP-UX 11i v1 Minimal Technical OE (MTOE)** — Designed for workstations running HP-UX 11i v1, this OE includes the Mozilla Application Suite, Perl, VxVM, and Judy applications, plus the OpenGL Graphics Developer's Kit. This OE is bundled as `HPUX11i-MTOE`.
- **HP-UX 11i v1 Technical Computing OE (TCOE)** — Designed for both compute-intensive workstation and server applications, this OE contains the MTOE bundles plus extensive graphics applications and Math Libraries. This OE is bundled as `HPUX11i-TCOE`.

For more information about the contents of the Operating Environments, see Appendix C, "HP-UX 11i v1 Software Bundles," on page 175.

Table 1-1 details the supported Operating Environments for HP servers and workstations:

Table 1-1 Supported Operating Environments

	FOE	EOE	MCOE	MTOE	TCOE
HP Commercial Servers	X	X	X		X
HP Workstations				X	X

NOTE

In the HP-UX 11i v1 (B.11.11) Operating Environments, the *Release Notes for HP-UX 11.0: HP 9000 Computers* document does not contain updated release information. The out-of-date document resides in the **`/usr/share/docs`** directory. The most current HP-UX 11.0 information can be found on the HP Technical Documentation Web site at:

`http://docs.hp.com/en/oshpux11.0.html`.

For the latest HP-UX 11.0 release information, see the *HP-UX 11.0 Installation and Update Guide: HP Servers and HP Workstations* and the *Read Before Installing or Updating HP-UX 11.0* DVD booklet, both on the HP Technical Documentation Web site.

The Next Step

Continue with Chapter 2, “System Requirements for Cold-Installing and Updating,” on page 31.

2 System Requirements for Cold-Installing and Updating

This chapter helps you assess the current state of your system prior to cold-installing or updating to HP-UX 11i v1.

What You Will Find in This Chapter

- "System Requirements" on page 32
- "How to Plan Your Disk Space Needs" on page 33
- "Supported Servers and Workstations" on page 36
- "Unsupported Servers and Workstations" on page 42
- "Supported Network Drivers, Mass Storage Drivers, and SCSI Devices" on page 43
- "Finding Firmware Information" on page 44
- "Identification of Model, OS/OE, and Software" on page 45
- "The Next Step" on page 47

IMPORTANT Review the *Read Before Installing or Updating to HP-UX 11i v1* DVD booklet. It describes last-minute information that was not available when this guide was published.

Time Estimate for This Chapter: Approximately 1 hour to compare the system requirements in this chapter with your system.

System Requirements

For cold-install or update to HP-UX 11i v1, you need the following:

- A supported system. See “Supported Servers and Workstations” on page 36.
- HP-UX 11i v1 OE and Application (AR) media (a two-DVD set)
- 1 GB memory, minimum
- 1 GB swap space, minimum

NOTE If your system has less than 1 GB of memory, you may need to manually set VxFS tunables for optimal performance *after* cold-installing or updating to HP-UX 11i v1. For more information about these tunables, see Appendix E, “Controlling Memory Utilization of VxFS 3.5 on HP-UX 11i v1,” on page 195.

How to Plan Your Disk Space Needs

This section provides hints and information to help you determine your disk needs for HP-UX 11i v1. If you need more disk space, be sure to order the equipment and plan on installing it after backing up your current system.

- Record the hardware path to the CD or DVD drive.
- Develop a clear configuration plan, including:
  - File system sizes
  - Swap space size
  - Dump device
  - Disk and file system parameters
  - Mirroring information
- If installing application programs other than those supplied within an HP-UX 11i v1 Operating Environment (OE), consider the vendor's size recommendations.
- When planning disk space, refer to these documents:
  - *Managing Systems and Workgroups: A Guide for HP-UX System Administrators* — This manual is available on the Instant Information CD and at the HP Technical Documentation Web site:

    `http://docs.hp.com`
  - *Disk and File Management Tasks on HP-UX* — Prentice-Hall, Hewlett-Packard Professional Books, 1997.

Disk Space Allocation for File Partitions

Depending on your system's purpose, you may need to determine how much disk space you will need for each file partition before you cold-install or update to HP-UX 11i v1. For example, if you plan to install applications from other vendors, you may need to modify the size of the `/opt` partition to accommodate their size.

Disk Space Requirements for a Cold-Install

Table 2-1 lists the amount of disk space allocated for the indicated partitions during a default cold-install for each Operating Environment. (The percentage used in each partition is in parentheses.)

Table 2-1 File Partition Disk Space Allocation by Operating Environment[1]

Partition	FOE	EOE	MCOE	TCOE	MTOE
/	208 MB (78% used)	208 MB (81% used)	208 MB (81% used)	208 MB (77% used)	223 MB (83% used)
/stand	304 MB (21% used)	304 MB (21% used)	304 MB (21% used)	304 MB (21% used)	300 MB (23% used)
/var	4.5 GB (2% used)	4.5 GB (2% used)	4.5 GB (2% used)	4.5 GB (2% used)	1.5 GB (6% used)
/usr	2.6 GB (76% used)	2.7 GB (75% used)	2.7 GB (75% used)	3.7 GB (61% used)	3.7 GB (62% used)
/tmp	208 MB (4% used)	208 MB (4% used)	208 MB (4% used)	208 MB (4% used)	200 MB (4% used)
/opt	3.6 GB (52% used)	3.7 GB (53% used)	3.7 GB (53% used)	4.5 GB (58% used)	2.7 GB (63% used)
/home	32 MB (26% used)	32 MB (26% used)	32 MB (26% used)	32 MB (26% used)	20 MB (41% used)
Total[2]	**11.5 GB (37% used)**	**11.7 GB (37% used)**	**11.7 GB (36% used)**	**13.5 GB (38% used)**	**8.7 GB (50% used)**

1. The results are from using the *bdf* (1M) command; your results may vary if you use the *du* (1) command.
2. Totals are not exact due to rounding.

Depending on how much disk space is available, you can change the partition size to meet your needs. For information about modifying your file system, refer to *Managing Systems and Workgroups: A Guide for HP-UX System Administrators* at the HP Technical Documentation Web site:

http://docs.hp.com

Disk Space Requirements for an Update

To ensure a successful update to HP-UX 11i v1, make sure that you have at least as much disk space allocated to the file partitions listed in Table 2-1 on page 34, *and* that each partition (most importantly, `/usr`, `/opt`, and `/var`) has at least 10-20 percent free space to allow for any growth. Additionally, make sure that you have at least 1 GB allocated for `/swap`.

Extra Space Needed with TCOE and MTOE

Cold-installing or updating the HP-UX 11i v1 Technical Computing OE (TCOE) and the Minimal Technical OE (MTOE) installs all CDE languages rather than just a selected language.

To remove unneeded CDE language bundles after installing the TCOE or MTOE, list them using `swlist` and remove unneeded bundles using `swremove`. You can also choose to deselect unneeded bundles during the installation process. For information on how to deselect software bundles that are installed by default during a cold-install, see "Task 4: Deselecting OE Software Bundles" on page 80. For information on how to deselect software bundles that are installed by default during an update, see "Task 3: Using update-ux (Required)" on page 99.

See Chapter 8, "Verifying System Install or Update," on page 117 for examples of `swlist` and `swremove`. Refer to the *HP-UX 11i v1 Release Notes* for software dependencies:

`http://docs.hp.com/hpux/os/11iv1`

Supported Servers and Workstations

The following tables outline the supported HP-UX 11i v1 configurations for HP servers and workstations.

Supported Servers

The following table lists currently supported servers. Some servers in this list may have been discontinued although they are still supported. The table does not list obsoleted[1] servers, nor does it include servers that may have been added after this document was developed.

For the most up-to-date information, consult your HP Representative or refer to the HP Servers and Enterprise Systems Web site at **`http://hp.com/go/servers`**

Table 2-2 Supported Servers

Bezel or Model	32-bit Support	64-bit Support	Comments
A-Class: A180, A180C	Yes		PA-7300LC A180/A180C discontinued February 1, 2001.
A-Class: A400, A500		Yes	PA-8500 and newer processors A400/A500 discontinued September 1, 2002.
bp2200 blade (in an HP bh3710 chassis)		Yes	PA-8600 processor only HP-UX `model` string: 900/800/HPServerBlade8600/3xx2

1. “Obsoleted” means that the server has been discontinued (it is no longer sold) *and* is no longer supported by HP.

Table 2-2 Supported Servers (Continued)

Bezel or Model	32-bit Support	64-bit Support	Comments
D-Class: D220, D230, D320, D330	Yes		PA-7*xxx* D220/D230 discontinued June 1, 2000. D320 discontinued September 1, 2001, and D330 discontinued February 1, 2001.
D-Class: D270, D280, D370, D380, D390	Yes	Yes	PA-8*xxx* D270/D280/D370 discontinued June 1, 2000. D380 discontinued November 1, 2000, and D390 discontinued September 1, 2001.
K-Class: Kx20, Kx70, Kx80, K250, K360, K450, K460	Yes	Yes	Kx20: PA-7200 processor All other K-Class servers: PA-8*xxx* Kx20 discontinued September 1999. Kx70 discontinued November 1, 2000. Kx80 discontinued September 1, 2001. K250/K450 discontinued December 1, 2000. K360/K460 discontinued June 1, 2000.
L-Class: L1000, L2000		Yes	PA-8500 and newer processors L1000/L2000 discontinued May 1, 2002.
L-Class: L1500, L3000		Yes	PA-8600 and newer processors L1500/L3000 discontinued January 1, 2004.
N-Class: N4000		Yes	PA-8500 and newer processors Discontinued April 25, 2003.
R-Class: R380, R390	Yes	Yes	PA-8000 and newer processors R380 discontinued August 1, 2000. R390 discontinued September 1, 2001.

Table 2-2 Supported Servers (Continued)

Bezel or Model	32-bit Support	64-bit Support	Comments
rp2400		Yes	PA-8500 processor HP-UX `model` string: A400-44 Discontinued September 1, 2002.
rp2405/rp2405-2		Yes	PA-8700 processor Discontinued November 1, 2004.
rp2430/rp2430-1		Yes	PA-8700 processor HP-UX `model` string: A400-6X Discontinued November 1, 2004.
rp2450		Yes	PA-8500 and newer processors HP-UX `model` string: A500-44 or A500-5X Discontinued September 1, 2002.
rp2470/rp2470-2		Yes	PA-8700 processors HP-UX `model` string: A500-6X or A500-7X Discontinued November 1, 2004.
rp3410/rp3410-2		Yes	PA-8800 processors
rp3440/rp3440-4		Yes	PA-8800 and newer processors
rp4440/rp4440-8		Yes	PA-8800 and newer processors
rp5400		Yes	PA-8500 and PA-8600 processors HP-UX `model` string: L1000-36, -44, -5X Discontinued May 1, 2002.
rp5405/rp5405-4		Yes	PA-8700 processors HP-UX `model` string: L3000-6X

Table 2-2 Supported Servers (Continued)

Bezel or Model	32-bit Support	64-bit Support	Comments
rp5430		Yes	PA-8600 and newer processors HP-UX `model` string: L1500-5X, -6X, -7X, or -8X Discontinued July 1, 2004.
rp5450		Yes	PA-8500 and PA-8600 processors HP-UX `model` string: L2000-36, -44, -5X Discontinued May 1, 2002.
rp5470/rp5470-4		Yes	PA-8600 and newer processors HP-UX `model` string: L3000-5X, -6X, -7X, or -8X Discontinued July 1, 2004.
rp7400		Yes	PA-8500 processors HP-UX `model` string: N4000-65 or N4000-75 Discontinued February 1, 2003.
rp7405/rp7405-8 and rp7410/rp7410-8		Yes	PA-8700 processor HP-UX `model` string: 9000/800/rp7410 (both rp7405 and rp7410)
rp7420/rp7420-16		Yes	PA-8800 and newer processors
rp8400/rp8400-16		Yes	PA-8700 and newer processors HP-UX `model` string: S16K-A
rp8420/rp8420-32		Yes	PA-8800 and newer processors
Superdome SD16		Yes	HP-UX `model` string: 9000/800/S16000
Superdome SD16A		Yes	HP-UX `model` string: 9000/800/SD16A

Table 2-2 Supported Servers (Continued)

Bezel or Model	32-bit Support	64-bit Support	Comments
Superdome SD32		Yes	HP-UX `model` string: 9000/800/S32000
Superdome SD32A		Yes	HP-UX `model` string: 9000/800/SD32A
Superdome SD64		Yes	HP-UX `model` string: 9000/800/S64000
Superdome SD64A		Yes	HP-UX `model` string: 9000/800/SD64A
T-Class: T600	Yes	Yes	PA-8*xxx* Discontinued August 1, 1999.
V-Class: V2200, V2250, V2500, V2600		Yes	PA-8200 and newer processors V2200 discontinued September 1999. V2250 discontinued July 1, 2000. V2500 discontinued January 1, 2001. V2600 discontinued December 1, 2001.

Supported Workstations

The following table lists currently supported workstations. Some workstations in this list may have been discontinued although they are still supported. The table does not list obsoleted[1] workstations, nor does it include workstations that may have been added after this document was developed.

For the most up-to-date information, consult your HP Representative or refer to the HP Workstations Web site at
http://hp.com/go/workstations

Table 2-3 Supported Workstations

Model(s)	32-bit Support	64-bit Support	Comments
B-Class: PA-7300LC	Yes		B180L
B-Class: PA-8500 and forward		Yes	B1000
B-Class: PA-8600		Yes	B2600
C-Class: PA-8500 and forward		Yes	C3000
C-Class: PA-8700 and forward		Yes	C3650, C3700, C3750
C-Class: PA-8800		Yes	C8000
J-Class: PA-8500 and forward		Yes	J5000, J5600, J6000, J7000
J-Class: PA-8700 and forward		Yes	J6700, J6750

1. “Obsoleted” means that the workstation has been discontinued (it is no longer sold) *and* is no longer supported by HP.

Unsupported Servers and Workstations

The following HP servers, HP workstations, and HP graphics adapters are no longer supported:

- Servers: E-, F-, G-, H-, and I-Class
- Workstations: All 700 series, B132, B160, C100, C110, C160, C180, C200, C240, C360, J200, J210, J280, J282, J2240
- Graphics adapters: GRX, CRX, CRX-24, CRX-48Z

NOTE C3700 and J6700 workstations require PA-8700 processor board upgrades (to version 2.3) to support HP-UX 11i v1. Contact your HP Customer Engineer for more details.

NOTE As of the September 2002 HP-UX 11i v1 release, HP 3D Graphics are no longer supported on PA-RISC systems older than version 2.0. If you have an older PA-RISC workstation and need 3D Graphics, HP recommends that you **do not install or update to this release** of the Technical Computing Operating Environment (TCOE) or Minimal Technical Operating Environment (MTOE).

Supported Network Drivers, Mass Storage Drivers, and SCSI Devices

For a complete list of supported network drivers, mass storage drivers, and SCSI devices, refer to the *HP-UX 11i v1 Release Notes* at the HP Technical Documentation Web site:

`http://docs.hp.com/hpux/os/11iv1`

NOTE Installing or updating to HP-UX 11i v1 installs a minimum set of default networking drivers that apply to the system. You may need to select or specify other available networking drivers to enable other cards on your system. This can easily be done during install or update by following the instructions for your selected migration path.

Finding Firmware Information

Firmware changes frequently. Make sure your system has the latest firmware installed to support, for example, the latest versions of I/O adapters, mass storage devices, and devices used when you install from media or a network depot.

- For a matrix of system firmware for PCI I/O adapters and HP-UX 11i boot support, as well as the minimum firmware requirements for HP-UX 11i v2, refer to the documents at **`http://docs.hp.com/en/hw.html#System%20Firmware`**
- For the latest HP-UX 11i firmware updates, go to the IT Resource Center (ITRC) Web site at **`http://itrc.hp.com`**.

  Log in to your appropriate region. Click **maintenance and support (for hp products)**, then **find individual patches and firmware**.

  If you have to patch your firmware, the ITRC provides a patch database to search, as well as patch documentation that provides information on how to patch the firmware.
- HP also provides the Subscriber's Choice, which enables you to sign up to receive email notices for firmware updates. At the ITRC Web site, click **maintenance and support (for hp products)**, then **support information digests**.

Identification of Model, OS/OE, and Software

Before you cold-install or update to HP-UX 11i v1, you need to identify the model of your system and other information.

Identifying the Model

To determine the model number of your system, enter:

```
model
```

To verify that HP-UX 11i v1 is supported on your system, see “Supported Servers and Workstations” on page 36.

Identifying the OS

To identify the OS version that your system is currently running, enter:

```
uname -r
```

When a system has HP-UX 11i v1 installed, you can determine which revision (Release ID) is installed by entering the following command:

```
/usr/sbin/swlist -l bundle HPUXBaseAux
```

The `HPUXBaseAux` bundle indicates the current installed revision level. The revision level is indicated both in the bundle version number and in the description text.

Identifying the OE

To identify the Operating Environment currently installed on your system, use `swlist`. For example:

```
/usr/sbin/swlist HPUX11i-*
```

The output of this command includes a line that identifies the installed OE. For example:

```
HPUX11i-OE B.11.11 HP-UX 11i Operating Environment Component
```

Identifying Installed Software

To identify the software products on a system or media, use `swlist`. For example, to show revision and descriptive title of all software installed on a system, enter:

```
/usr/sbin/swlist
```

To list all products and their versions on a DVD mounted at `/dvdrom`, enter:

```
/usr/sbin/swlist -s /dvdrom
```

To get a table of contents and product details, enter:

```
/usr/sbin/swlist -dvl product -a readme @ /dvdrom
```

To list all products and their versions on a CD mounted at `/cdrom`, enter:

```
/usr/sbin/swlist -s /cdrom
```

To get a table of contents and product details, enter:

```
/usr/sbin/swlist -cdl product -a readme @ /cdrom
```

The `swlist` command has many options to expand or narrow the listing to specific attributes. Refer to the *swlist* (1M) manpage or the *Software Distributor Administration Guide*, available on the Instant Information CD and at the HP Technical Documentation Web site:

```
http://docs.hp.com/hpux/os/11iv1
```

The Next Step

Continue with Chapter 3, “Choosing an Installation Method,” on page 49.

3 Choosing an Installation Method

This chapter provides information and scenarios to help you choose the most appropriate method to install HP-UX 11i v1 on your system.

What You Will Find in This Chapter

- "Supported Cold-Install Paths to HP-UX 11i v1" on page 50
- "Supported Update Paths to HP-UX 11i v1" on page 51
- "Deciding Which Method to Use" on page 53
- "If You Have an Existing HP-UX 11i v1 System" on page 56
- "Understanding Online Diagnostics" on page 57
- "The Next Step" on page 58

Time Estimate for This Chapter: Approximately 1 hour to read about the cold-install and update paths, and to choose a method.

NOTE For customers ordering new systems with the Instant Ignition option (also known as **factory ignited**), the cold-installation process described here has already been performed. Skip this chapter and proceed to installing applications and patching software. See Chapter 7, "Installing HP Applications and Patches," on page 111.

Supported Cold-Install Paths to HP-UX 11i v1

Cold-install means installing system software on a new (uninstalled) or existing system by completely rebuilding the volume group, erasing the existing operating system and data on that volume, and installing the new operating system and specified software and data.

You can choose two different methods to cold-install HP-UX 11i v1 on a supported system: 1) by direct installation from CD or DVD media; 2) by creating depots on servers using SD-UX or Ignite-UX and sharing it over the network.

An advantage of cold-install is that supported software can be installed without regard for the software currently on the system, or concern for cleaning up old software.

Supported versions of HP-UX that can be configured as Ignite-UX servers include HP-UX 11.0, HP-UX 11i v1.6, HP-UX 11i v1, and HP-UX 11i v2. Ignite-UX servers installed on any of these HP-UX systems can be configured to cold-install HP-UX 11i v1.

You can cold-install HP-UX 11i v1 and its accompanying Operating Environment on any supported system listed in “Supported Servers and Workstations” on page 36.

NOTE

If your system already is running any version of the HP Apache-based Web Server, installing or updating to an HP-UX 11i v1 Operating Environment will install the version of HP-UX Web Server Suite included with the HP-UX 11i v1 OE. Refer to the *HP-UX 11i v1 Release Notes* for more information.

Supported Update Paths to HP-UX 11i v1

Update means using the `update-ux` command and Software Distributor (SD) tools to selectively overwrite the operating system and application software from a media or network source depot.

An advantage of performing an update is that it leaves user data, configuration, and applications in place. You can update to HP-UX 11i v1 from the following HP-UX operating systems:

- HP-UX 10.20
- HP-UX 11.0
- HP-UX 11i v1

If you **update** an existing HP-UX OS to the September 2005 version of HP-UX 11i v1, the system must be running either HP-UX 10.20, HP-UX 11.0, or HP-UX 11i v1. Updating from any other release to HP-UX 11i v1 is not supported.

Table 3-1 lists the supported update paths from previous releases of HP-UX to the current release of HP-UX 11i v1.

Table 3-1 Updating from Previous HP-UX Releases

From	To This HP-UX 11i v1 Release With or Without an Operating Environment
HP-UX 9.x, 10.01, or 10.10	Update to HP-UX 10.20 before updating to HP-UX 11i v1
HP-UX 10.20	Update to HP-UX 11i v1
HP-UX 10.30	Update to HP-UX 11.0 before updating to HP-UX 11i v1
HP-UX 11.0	Update to HP-UX 11i v1
HP-UX 11.10	Update is not supported
HP-UX 11i v1	Update to HP-UX 11i v1 OS or OE or both

NOTE

If you attempt to update from this release (HP-UX 11i v1 September 2005) to an earlier HP-UX 11i v2 release, the update process will stop and you will get the following message:

```
ERROR: You are attempting to update from your release of
HP-UX to a version of HP-UX that was released earlier in
time. This is not supported.  The update process has stopped
without making any changes to your system.  Please see the
'Supported Update Paths' section of the HP-UX 11i v2
Installation and Update Guide for more information.
```

What To Do

HP supports the following HP-UX 11i v2 (B.11.23) cold-install and update paths for this release:

- You can cold-install the May 2005 HP-UX 11i v2 (B.11.23) release.
- You can update from HP-UX 11i v1 (B.11.11) December 2004 and earlier HP-UX 11i v1 releases to the May 2005 HP-UX 11i v2 release.

Deciding Which Method to Use

Now that you have evaluated your system and ordered any needed hardware, you need to decide whether to **cold-install** or **update** to HP-UX 11i v1 on your system.

When to Cold-Install

CAUTION The cold-install process erases software on the root volume before installing HP-UX 11i v1. If you want to retain any existing software, make sure to back up that software before migrating or use update. **Cold-installing using Ignite-UX overwrites everything on the target disk**.

You can cold-install rather than update to HP-UX 11i v1 when:

- You have a new system.
- You are managing several systems with similar OS configurations.
- Your disk space needs reconfiguration. See “How to Plan Your Disk Space Needs” on page 33.
- Your systems are organized with clean separation of the OS from user, application, and data files.
- Overwriting the root (/) volume on existing systems will not cause a loss of applications or data.
- Your system configuration is not listed as a supported update path. See “Supported Update Paths to HP-UX 11i v1” on page 51.

You can cold-install from *any supported* configuration. See “Supported Servers and Workstations” on page 36.

The process described in this guide cold-installs a single system from local media. If you plan to install many systems simultaneously, use an Ignite-UX server. Ignite-UX is available on the HP-UX 11i v1 DVD. Additional information on Ignite-UX and newer versions are available at: **`http://docs.hp.com/en/IUX/`**

See Chapter 4, “Preparing to Install or Update to HP-UX 11i v1,” on page 59 for more information about preparing your system for cold-install and then read the cold-install process using Ignite-UX in Chapter 5, “Cold-Installing HP-UX 11i v1,” on page 71.

When to Update

You can update rather than cold-install HP-UX 11i v1 when:

- You are updating from a supported HP-UX 10.20, HP-UX 11.0, and HP-UX 11i v1 system. See “Supported Update Paths to HP-UX 11i v1” on page 51 for specific details.
- You are concerned about recovering unique applications and data on your root volume, and do not want to write over non-OS files, which occurs when cold-installing HP-UX 11i v1.
- Each system has a unique configuration.
- Current disk space is sufficient for HP-UX 11i v1. See “How to Plan Your Disk Space Needs” on page 33.

IMPORTANT

If `/stand` is not of sufficient size, the partition can be resized, requiring the root disk to be reformatted. In this case, you must *cold-install* rather than update your system. To determine whether `/stand` is large enough to support this release of HP-UX 11i v1, see “Disk Space Requirements for a Cold-Install” on page 34.

This installation method uses the `update-ux` command and Software Distributor (SD) tools to selectively overwrite the operating system and application software from media or a network source depot. An advantage of performing an update is that it leaves user data, configuration, and applications in place. Updating to HP-UX 11i v1 is limited to the supported paths listed in “Supported Update Paths to HP-UX 11i v1” on page 51.

See Chapter 4, “Preparing to Install or Update to HP-UX 11i v1,” on page 59 for details on how to prepare your system to update to HP-UX 11i v1. The update process is described in Chapter 6, “Updating to HP-UX 11i v1,” on page 87.

What Software Source to Use

When cold installing or updating your systems, you can choose to update using media, copy the contents of media into network depots, or create a golden image of the desired system for installing many similar systems. The process described in this guide cold-installs and updates a single system from local media.

- **If you are cold-installing or updating one system at a time** — Cold-install or update directly from the CDs or DVDs in the HP-UX 11i v1 media kit:
  - **HP-UX 11i v1 OE media** — Boot and install a new system or update an existing system.
  - **Support Plus CD** — Install current HP-UX 11i v1 patch bundles and `OnlineDiag` bundle to fix defects and enable new hardware.
  - **HP-UX Application media** — Install applications not installed with the OE or install a newer version of an OE application.
- **If you plan to cold-install or update on many systems in your enterprise** — You can consolidate your software sources in a network depot:
  - **Network Depot** — Use Software Distributor (SD) commands to create depots containing OS, OE, and other software bundles, then install from the depot using Ignite-UX. For help with this method, refer to the `swcopy`(1M) manpage, the *Software Distributor Administration Guide*, and the *Ignite-UX Administration Guide*.
- **If you plan to create many similar systems in your enterprise** — You can use an Ignite-UX server to create a faster software source than an SD depot:
  - **Golden Image** — Create a golden image from which to cold-install. A golden image is a snapshot of a known, good operating system installation and configuration for use in installing other clients. The copied (source) client is called the golden image. This install image can contain the OS and OE, other applications, and any needed patches. After the archive is in place, either on the Ignite-UX server or on another system, you can cold-install on each client system in a single-pass operation; you need to reboot each client only once.

If You Have an Existing HP-UX 11i v1 System

If your system is already running HP-UX 11i v1, use `update-ux` to update to the new version of the OE for HP-UX 11i v1.

You can install HP-UX 11i v1 patch bundles and the `OnlineDiag` bundle to fix defects and enable new hardware. If you only install the patch bundles, these bundles will not include the application updates provided on the OE media.

Rather than doing a complete migration to the current HP-UX 11i v1 OS or OE, consider using `swinstall` to install the latest patch bundles (Table 3-2) to meet your system needs:

Table 3-2 Patch Bundles by Media Location

Patch Bundle	Description	HP-UX 11i v1 OE Media	SupportPlus[1]
HWEnable11i	Enables new hardware and delivers critical patches for HP-UX 11i v1 systems	X	X
GOLDBASE11i	Fixes defects for HP-UX 11i v1 OS and network drivers included in OEs		X[2]
GOLDAPPS11i	Fixes defects for HP-UX 11i v1 OE applications		X[2]

1. Support Plus bundles are available on a biannual basis via CD and the Web. For more details and to download recent bundles, go to this Web site:
   `http://www.hp.com/go/softwareinfo/SUPPORT_PLUS`
2. These bundles contain patches with the highest ratings from tests in the HP Enterprise Patch Test Center.

For instructions on installing patch bundles on an existing HP-UX 11i v1 system, see Chapter 6, “Updating to HP-UX 11i v1,” on page 87.

Understanding Online Diagnostics

HP-UX 11i v1 automatically installs diagnostics on all systems to provide required hardware support. The tools contained in the `OnlineDiag` bundle give you a complete solution to verify, troubleshoot, and monitor Itanium-based system hardware while the system is online. You can use the `OnlineDiag` bundle to verify, troubleshoot, and monitor many different types of Itanium-based system hardware including CPUs, memory, interface cards, and mass storage and other devices.

CAUTION

Uninstalling the OnlineDiag bundle prevents products with dependencies on the diagnostics from functioning correctly.

Not installing `OnlineDiag` removes protections against hardware failures that diagnostics provide. Without the tools, it is much harder to troubleshoot and fix problems if a hardware failure occurs.

With a media install, the `OnlineDiag` bundle is installed by default with any HP-UX 11i Operating Environment.

The tools in `OnlineDiag`:

- Protect you against some hardware failures, for example, some memory problems.
- Provide EMS Hardware Monitors that notify you of hardware events that may indicate impending hardware failure.
- Maintain logs that can give you critical help in determining the cause of failures.
- Enable you to troubleshoot system problems.

For most computer systems, no special configuration of the diagnostics is necessary.

For complete information, go to the Diagnostics Web site:

`http://docs.hp.com/hpux/diag`

The Next Step

After deciding which method to use to install HP-UX 11i v1, you can start preparing your system for either cold-install or update. Proceed to Chapter 4, “Preparing to Install or Update to HP-UX 11i v1,” on page 59.

IMPORTANT Make sure you review the *Read Before Installing or Updating to HP-UX 11i v1* DVD booklet for situations not discussed in Chapter 3, “Choosing an Installation Method,” on page 49 that may apply to your system.

4 Preparing to Install or Update to HP-UX 11i v1

This chapter details the preparation tasks required to cold-install or update to HP-UX 11i v1.

What You Will Find in This Chapter

- "Cold-Install Tasks" on page 60
- "Update Tasks" on page 62
- "Backing Up Your System" on page 64
- "Locating Source Media and Codewords" on page 68
- "The Next Step" on page 69

Time Estimate for This Chapter: Approximately 2 hours to gather the information needed and perform the prescribed tasks.

Cold-Install Tasks

Prior to cold-installing HP-UX 11i v1, perform these tasks:

- Back up any configuration files you want to reinstall.
- Back up your operating system using the Ignite-UX `make_net_recovery` and `make_tape_recovery` commands.
- If you intend to cold-install HP-UX 11i v1 on more than one system, update your Ignite-UX server.
- Locate source media and codewords.

Task 1: Backing Up Your Configuration Files

If you plan to cold-install HP-UX 11i v1 on a system that already has HP-UX installed, make sure to save the files that you want to reinstall, such as:

- Configuration files in `/etc`
- The contents of `/usr/local`
- Any local home directories (that is, those you do not import from another system)
- Any configuration files located in the `/etc/opt` directories for installed software

If multiple users are preparing for the cold-install, you might consider creating a file system. Mount it with `sam`. Then create a subdirectory for each system or user (for example, `/backup/your_sys`).

As root, copy the files. For example:

1. Copy all config files from `/etc` on a system named `system1` to system `system2`. On `system2`, enter:

   ```
   mkdir /backup/system1/etc
   rcp -p your_name@system1:/etc/* /backup/system1/etc/
   ```

2. Copy your local home directory to the backup system:

   ```
   mkdir /backup/system1/home
   rcp -pr your_name@system1:/home/ /backup/system1/home/
   ```

Colors and Fonts

If you want to preserve your colors and fonts in CDE, execute the following command on the system you are updating:

```
xrdb -q > xrdb.save
```

Then save the `xrdb.save` file in your backup directory.

Task 2: Backing Up Your System

Back up your system before performing a cold-install, and again after the cold-install is complete. If a problem occurs, you can easily restore the system to its original state. See "Backing Up Your System" on page 64 for more information.

Task 3: Updating Your Ignite-UX Server

If you intend to cold-install HP-UX 11i v1 on more than one system, update your Ignite-UX server first.

TThe HP-UX 11i v1 DVD contains the complete Ignite-UX product. When you cold-install HP-UX 11i v1 from the media, a subset of Ignite-UX is used to perform the installation on a single system. Updating your Ignite-UX server and using it to update other systems ensures that:

- You keep consistent kernel configuration with specific drivers, daemons, and kernel tunables on all systems.
- You have the following commands to create an operating system recovery archive: `make_net_recovery` and `make_tape_recovery`. Refer to the *make_net_recovery* (1M) and *make_tape_recovery* (1M) manpages for information.

You can also download the latest Ignite-UX software and documentation from the Ignite-UX Web site:

http://docs.hp.com/en/IUX/

Task 4: Locating Source Media and Codewords

Locate the source media needed for the cold-install. See "Locating Source Media and Codewords" on page 68 for instructions.

Update Tasks

Prior to updating to HP-UX 11i v1, perform these tasks:

- Identify all software products and bundles on your system.
- Rebuild the HP-UX kernel.
- Rename your log files to make it easier to find problems encountered during an update.
- Back up your operating system using the Ignite-UX `make_net_recovery` and `make_tape_recovery` commands.
- Locate source media and codewords.

Task 1: Identifying Software Versions

Step 1. List the bundles and products installed on your system:

```
/usr/sbin/swlist -l bundle -l product /tmp/software_list
```

Step 2. Check the list to determine which bundles and products you wish to update on your system. Make sure to save the output of the `swlist` command so you can reference it later.

Step 3. After updating to HP-UX 11i v1, run the `swlist` command again and compare the output to the output of the `swlist` command you saved in step 1 to determine what software products and bundles still need to be updated.

Task 2: Rebuilding the Kernel

The update can fail if the HP-UX kernel build fails in the starting environment. To ensure that you have a reliable starting point, rebuild the kernel before you update:

1. As root, enter:

   ```
   /usr/sbin/mk_kernel
   ```

2. Fix any problems listed in the `mk_kernel` output.
3. Reboot your system to ensure that your new kernel boots.

Task 3: Renaming Your Log Files

To make it easier to look for problems encountered during an update, rename the log files before starting an update:

1. **`cd /var/adm/sw`**
2. As root, rename each log file. For example:

   `mv swagent.log swagent_old.log`

Task 4: Backing Up Your System

Back up your system before performing an update, and again after the update is complete. If a problem occurs, you can easily restore the system to its original state. See “Backing Up Your System” on page 64 for more information.

Task 5: Locating Source Media and Codewords

Locate the source media needed for the update. See “Locating Source Media and Codewords” on page 68 for instructions.

Backing Up Your System

Back up your system before performing a cold-install or update, and again after the cold-install or update. If a problem occurs, you can easily restore the system to its original state. Backing up your system includes the following tasks:

- Task 1: Creating an Operating System Recovery Archive
- Task 2: Backing Up Your Data Files

Task 1: Creating an Operating System Recovery Archive

To protect your system data, create an operating system recovery archive to be used in the event cold install or update problems. The Ignite-UX server has two commands you can use to create an operating system recovery archive:

- `make_net_recovery`

  Use this command to create an operating system recovery archive and store it on another system on the network. This command works on any system that has Ignite-UX installed.

- `make_tape_recovery`

  Use this command to create an operating system recovery archive on a bootable recovery tape. This command works on any system that has Ignite-UX installed.

NOTE The Ignite-UX recovery tools are intended to be used in conjunction with data recovery applications to create a means of total system recovery. HP does not recommend using Ignite-UX recovery tools to backup and recover data other than essential system data.

Using make_net_recovery

The Ignite-UX server has the `make_net_recovery` command to create an operating system recovery archive on another system on the network. The archive created by `make_net_recovery` is specific to the system it was created for and its identity includes host name, IP address, networking information, and so on. In the event of root disk failure, you use the Ignite-UX server to restore the system by installing the operating system recovery archive.

The contents of the operating system recovery archive always includes all files and directories that are essential to bringing up a functional system. This essential list is predefined by `make_net_recovery`.

You can run `make_net_recovery` in its interactive mode to review the directories and files that make up the essential list, and to add or remove other data from the archive on a disk/volume group, file, or directory basis.

For more information on using `make_net_recovery`, refer to the *make_net_recovery* (1M) manpage or the *Ignite-UX Administration Guide*. The guide is available on the HP-UX 11i v1 Instant Information CD and at the HP Technical Documentation Web site:

`http://docs.hp.com/hpux/os/11iv1`

You can also locate the *Ignite-UX Administration Guide* at the Ignite-UX Information Library:

`http://www.docs.hp.com/en/IUX/infolib.html`

Using make_tape_recovery

The Ignite-UX server's `make_tape_recovery` command creates a bootable operating system recovery tape for a system while it is up and running. When a system has a logical volume layout, the recovery tape only includes data from the root volume group, plus data from any non-root volume group containing the `/usr` directory.

You can run `make_tape_recovery` either on the Ignite-UX server or locally on the system from which you are trying to make an operating system recovery tape. To create the bootable recovery tape, enter:

`/opt/ignite/bin/make_tape_recovery -Av`

where `A` specifies the entire root disk or volume group and `v` is for verbose mode. Also, you can specify more than one volume group with the `-x` option.

If you intend to use a tape drive other than the default (`/dev/rmt/0m`), modify the command to point to the device you want to use, for example, a tape drive at `/dev/rmt/3mn`:

```
/opt/ignite/bin/make_tape_recovery -Av -a /dev/rmt/3mn
```

To recover a failed system disk or volume group after an operating system recovery tape has been made, simply load the recovery tape, boot the system and interrupt the boot sequence to redirect to the tape drive. Allow the install process to complete. Do not intervene. The system will reboot and, because map files for all associated volume groups have been saved on the tape, any other existing volume groups are imported and mounted automatically. Data that is not in the root volume group must be backed up and recovered using normal backup utilities.

For more information on using `make_tape_recovery`, refer to the *make_tape_recovery* (1M) manpage on an Ignite-UX server or the *Ignite-UX Administration Guide*. The guide is available on the HP Technical Documentation Web site:

http://docs.hp.com/hpux/os/11iv1

You can also locate the *Ignite-UX Administration Guide* at the Ignite-UX Information Library:

http://www.docs.hp.com/en/IUX/infolib.html

Task 2: Backing Up Your Data Files

There are a number of different backup methods you may wish to choose from depending on your system backup needs and your configurations. Some recommended backup methods are:

- HP OpenView Storage Data Protector
- SAM (System Administration Manager)
- HP-UX fbackup/frecover utilities

Choosing HP Storage Data Protector for Backup

If you are backing up large numbers of systems, the HP Storage Data Protector software product can be particularly useful. HP Data Protector is faster than other backup methods and provides for unattended backup as well. It allows you to efficiently centralize and administer backup procedures.

Using HP Data Protector involves setting up a database server and running software that directs and records the backup process for clients. For more information, see the HP OpenView Storage Data Protector Web site at:

http://h18006.www1.hp.com/products/storage/software/dataprotector/

Choosing SAM for Backup

You can use SAM or HP-UX commands to back up data. Generally, SAM is simpler and faster to use than using the HP-UX commands.

Choosing HP-UX fbackup/frecover utilities

Use the `fbackup` and `frecover` commands to selectively back up and recover files. The `fbackup` command can do the following:

- Indicate specific files or directories to include or exclude from a backup
- Specify different levels of backup on a daily, a weekly, or monthly basis
- Create an online index file

The `frecover` command restores backup files made using the `fbackup` utility. The -r option to the `frecover` command is generally used for recovering all files from your backup; the -x option is used for restoring individual files to your system. For complete details, see the `frecover` (1M) and `fbackup` (1M) manpages for examples.

Locating Source Media and Codewords

Now that you have backed up your system and important data files, locate the source media needed for the cold-install or update. See the section called, “Media Kit Contents” on page 26 for more information.

You can obtain a codeword for a purchased product by contacting one of the HP licensing services in Table 4-1:

Table 4-1 HP Licensing Services

Location	Telephone	Email
Asia	0120.42.1231 (Inside Japan) 0426.48.9310 (Inside Japan) +81.426.48.9312 (Outside Japan)	sw_codeword@hp.com
Europe	+33 (0)4.76.14.15.29	codeword_europe@hp.com
North America	(800) 538-1733	hplicense@mayfield.hp.com

NOTE

For more information on HP licensing services and codeword redemption, go to Software License Manager Web site:

`http://licensing.hp.com`

The Codeword Request forms also list the telephone numbers and Web site for codeword redemption.

The Next Step

You are now ready to cold-install or update to HP-UX 11i v1.

- **To cold-install:** see Chapter 5, “Cold-Installing HP-UX 11i v1,” on page 71.
- **To update:** see Chapter 6, “Updating to HP-UX 11i v1,” on page 87.

5 Cold-Installing HP-UX 11i v1

This chapter describes cold-installing HP-UX 11i v1.

What You Will Find in This Chapter

- "Before You Begin" on page 72
- "Reviewing the Cold-Install Process" on page 73
- "Cold-Installing HP-UX 11i v1" on page 75
- "Retrieving Information After Cold-Installing" on page 83
- "The Next Step" on page 85

Time Estimate for This Chapter: Approximately 2-3 hours, depending on your system and whether you are installing the HP-UX operating system (OS) or an HP-UX Operating Environment (OE).

NOTE For customers ordering new systems with the Instant Ignition option (also known as **factory ignited**), the cold-installation process described here has already been performed. Skip this chapter and proceed to Chapter 8, "Verifying System Install or Update," on page 117.

CAUTION The cold-install process overwrites everything on the root (/) disk. Make sure you completed backups in "Backing Up Your System" on page 64.

Before You Begin

Before you cold-install HP-UX 11i v1, make sure that:

- Your system meets the system requirements to install and operate HP-UX 11i v1. For more details see Chapter 2, “System Requirements for Cold-Installing and Updating,” on page 31.
- You understand all of the considerations provided in Chapter 3, “Choosing an Installation Method,” on page 49.
- You have completed the preparation tasks required to cold-install your system. Most importantly, make sure you created an operating system recovery archive to protect your data in the event of a system crash. For more information see Chapter 4, “Preparing to Install or Update to HP-UX 11i v1,” on page 59.

Reviewing the Cold-Install Process

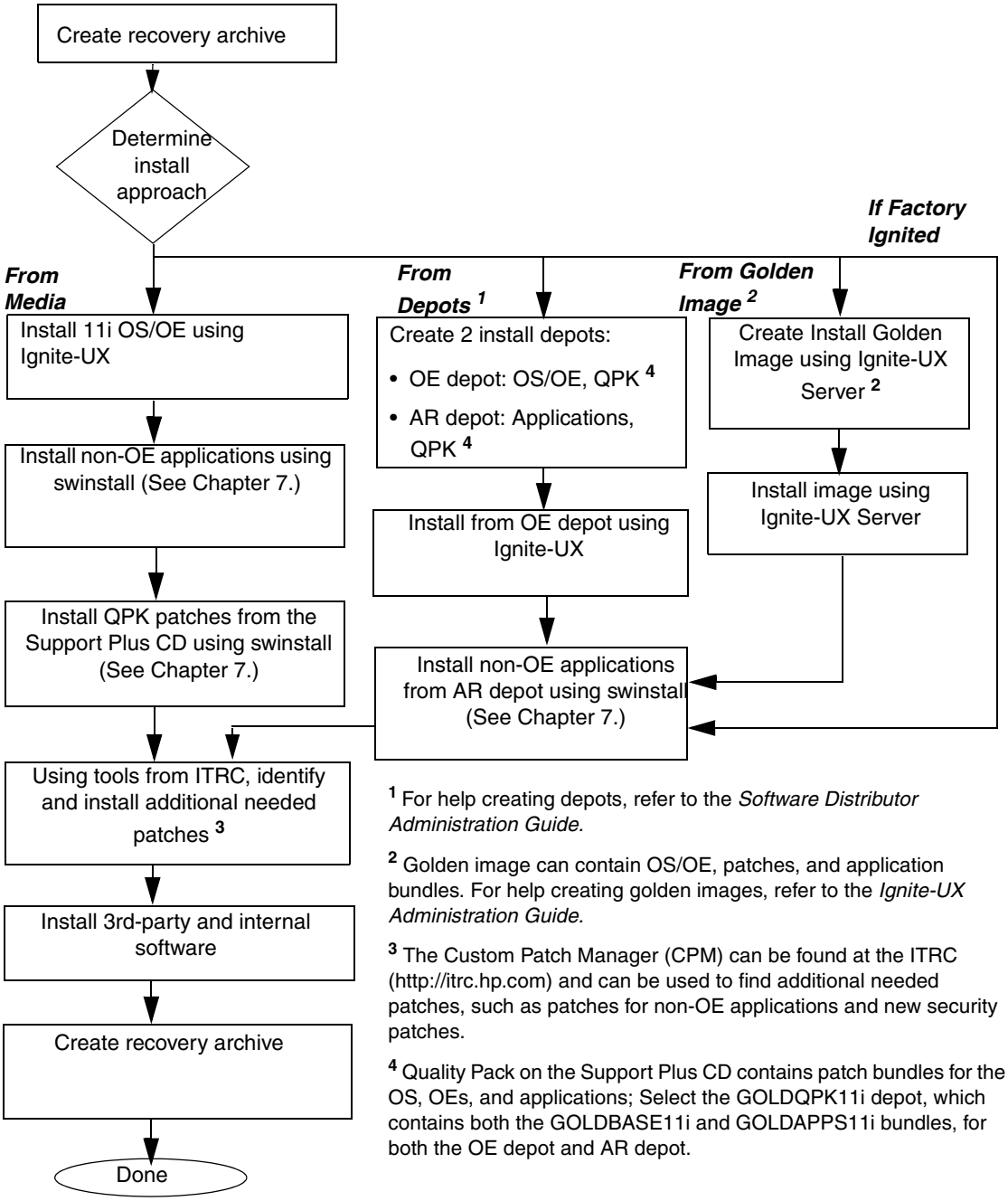
Figure 5-1 on page 74 shows the overall process, along with alternative methods of cold-installing HP-UX 11i v1.

Alternative methods of cold-installing include the following:

- Installing from network depots — Use Software Distributor commands to create depots containing OS, OE, and other software bundles, then install from the depot using Ignite-UX. For help with this method, refer to the *swcopy* (1M) manpage, the *Software Distributor Administration Guide,* and the *Ignite-UX Administration Guide*.
- Installing from golden images — If you need to install the same OS/OE and applications on many systems in your network, use an Ignite-UX server as explained in the *Ignite-UX Administration Guide*. With Ignite-UX, you can create a single install image (golden image) containing OS/OE bundles, application bundles, and patch bundles, then install the image on multiple systems in your environment.

NOTE If your system is on HP Mission Critical Support, discuss the proper method of installing and patching the OE with your HP Customer Engineer.

Figure 5-1 Cold-Installing HP-UX 11i v1



[1] For help creating depots, refer to the *Software Distributor Administration Guide.*

[2] Golden image can contain OS/OE, patches, and application bundles. For help creating golden images, refer to the *Ignite-UX Administration Guide.*

[3] The Custom Patch Manager (CPM) can be found at the ITRC (http://itrc.hp.com) and can be used to find additional needed patches, such as patches for non-OE applications and new security patches.

[4] Quality Pack on the Support Plus CD contains patch bundles for the OS, OEs, and applications; Select the GOLDQPK11i depot, which contains both the GOLDBASE11i and GOLDAPPS11i bundles, for both the OE depot and AR depot.

Cold-Installing HP-UX 11i v1

This section describes cold-installing from the HP-UX 11i v1 CDs or DVDs, including the operating system, a selected Operating Environment (OE) bundle, network drivers, CDE language bundle, diagnostics, and required patches from the Support Plus CD.

Before you begin, review Appendix B, "Known Problems and Troubleshooting," on page 133 for any installation issues that apply to your system.

This section contains the following tasks:

- "Task 1: Booting Your Machine" on page 76
- "Task 2: Selecting Your Installation Type" on page 77
- "Task 3: Configuring Your Installation" on page 78
- "Task 4: Deselecting OE Software Bundles" on page 80
- "Task 5: Finishing Your Installation" on page 81

Required Media

Have these media ready from the HP-UX 11i v1 media kit:

- HP-UX 11i v1 OE CDs or DVD
- Support Plus CD

CAUTION Cold-installing overwrites everything on the target disk.

Cold-Installing HP-UX 11i v1

Task 1: Booting Your Machine

This task describes how to boot your system from the install media.

Step 1. Make sure any external devices connected to the target system are turned on and operational.

Step 2. Insert the HP-UX 11i v1 CD or DVD into the drive.

Step 3. Stop the autoboot by pressing **Esc** on workstations or any key on servers.

The boot console menu is displayed. If you need help, enter **HELP**

Step 4. Ensure that Fast Boot is enabled.

a. Select the Configuration Menu **CO**

b. If the Fast Boot selection is available, switch Fast Boot ON:

FB ON

c. Return to the Main Menu **MA**
(Switch Fast Boot back OFF after installing HP-UX 11i.)

The full memory check that is run when Fast Boot is OFF may take several hours on a large system.

Step 5. Search for bootable devices, using the choices displayed (for example, enter **search** or **sea**). A table similar to this is displayed:

```
Path#  Device Path       Device Type
-----  -----------       -----------
P0     SCSI              HP DVD-ROM
P1     LAN.1.2.3.4.5.6   1.2.3.4
P2     FWSCSI.6.0        IBM DDRS-34560WS
```

Of the media listed, a SCSI device (`FWSCSI`) is usually a disk, whereas a single-ended SCSI device (`SCSI`) can be a disk, CD or DVD drive.

Step 6. Boot from the CD or DVD drive using the listed path number. For the drive shown in the previous example (P0), enter **BOOT P0**

Step 7. After a few minutes, at the `Interact with IPL?` prompt press **n**.

The install kernel loads (3-5 minutes), after which a screen might prompt you to enter the keyboard language of your console.

Step 8. Enter the number and press **Enter** again to confirm.

Cold-Installing HP-UX 11i v1

Task 2: Selecting Your Installation Type

The system displays the Ignite-UX Welcome screen for the HP-UX installation process. When the initial Ignite-UX Welcome screen appears, read how to navigate and select choices on this terminal interface:

- Use the **Tab** key to navigate between fields and the arrow keys to navigate within fields.
- Use the **Return/Enter** key to select an item. Pressing **Return/Enter** or the spacebar opens a menu list.
- For Help, use **Ctrl-K** for navigation key help and **Ctrl-F** (or **F1**) for context-sensitive help.
- You can enter the underlined letter of an item (such as `I` for `install HP-UX`) to navigate more quickly.

The remainder of this section describes how to choose the degree of customization needed to configure your installation.

Step 1. From the Ignite-UX Welcome screen, select **Install HP-UX** to begin interacting with the Ignite-UX (cold-install) program and then press **Enter**. The system displays the `User Interface and Media Options` window.

Step 2. From the `User Interface and Media Options` window, choose the degree of customizing needed to configure the installation. Mark your choices and select **OK**.

- Select the default setting (**Media only installation**) shown in **Source Location Options** for installing from a CD or DVD.
- Select from one of the three choices shown in **User Interface Options**:
  - `Guided Installation` provides tutorial information and limited choices for inexperienced Ignite-UX users. (Ignite-UX enables you to exit from `Guided Installation`. You can restart the configuration using `Advanced Installation` later either by selecting the **Cancel** button or pressing **C**.)
  - `Advanced Installation` enables you to customize your system on tabbed screens. Use this mode to change VxVM settings. You may also find it convenient to set system parameters, network

Cold-Installing HP-UX 11i v1

services, file-system characteristics, and other configuration details. For more help on using `Advanced Installation`, refer to the *Ignite-UX Administration Guide*.

— **No User Interface** uses all the defaults and begins the session.

The remaining sections take you through the `Guided Installation` option.

Step 3. If your system has a tape drive attached, the `Media Installation Selection` screen appears:

```
Media Installation Selection
This screen provides an option to switch the install source
from the default CD/DVD to a recovery tape.  This is helpful
for those systems and for tape devices which do not support
booting from a tape.

[ * ]  CD/DVD Installation
[   ]  Boot from CD/DVD, Recover from Tape


[   OK   ]              [ Cancel ]               [  Help  ]
```

Step 4. Tab to `[ OK ]` and press **Enter**.

Task 3: Configuring Your Installation

At this point, the system displays the `Install HP-UX Wizard` screen for the HP-UX installation process. You are now at the first step of the `Install HP-UX Wizard`. This section describes how to configure your installation using the `Guided Installation` process.

Step 1. From the `Install HP-UX Wizard` screen, select an overall system configuration. Press **Enter** to accept the default option, `HP-UX B.11.11 Default`. The system displays the `Operating Environment` screen.

Step 2. From the `Operating Environment` screen, select the type of `Operating Environment` you want to install on your system. Press **Enter** to view the choices.

Step 3. On the `Root Disk` screen select the disk to store your root file system. Press **Enter** to view the choices. If you are unsure of what to choose, keep the default selection that has been calculated by the install program.

Step 4. On the `Root Swap Space` screen, specify the amount of root swap space you need. Press **Enter** to view the choices.

Cold-Installing HP-UX 11i v1

Some initial calculations have been performed by the install program, and a recommended value has been set for you. You can either accept this value or change it before continuing.

Step 5. On the `File System Type` screen, select the type of file system you want to use. Unless you have other requirements, use the default value chosen by the install program.

NOTE If you select VxVM, the root disk cannot be moved to another SCSI bus or address that results in a change in the hardware path to the device. If it is moved, you may not be able to boot safely from it. This is similar to the limitation present in LVM.

Step 6. On the `Root Group` screen, specify how many disks you want placed into the root disk volume group. If you have more than one disk, select **Yes** to choose the Striping option.

Step 7. On the `Languages` screen, browse the available languages, marking the desired selections. During the first boot, you may have been asked this already.

Step 8. On the `Additional Software` screen, select any additional software that you want loaded onto your system. Browse the list, marking your selections, then continue to the next step.

Step 9. On the `Pre-Install Disk Information` screen, identify which disks to overwrite during the install process. If you see a disk in the list that you do not want included, back up to the root disk selection and choose another disk. Otherwise, continue on to the next step.

Step 10. On the `Pre-Install Check Information` screen, review any errors, warnings, or notes. Warnings are simply informational. If there are any errors, you need to resolve them before the installation can continue.

Step 11. On the `System Summary` screen, use the **Show Summary** button to view a summary of how your system will be configured. If you see any problems, or want to change any of your selections, back up to the appropriate step, and make the needed changes. Otherwise, select **Finish** (at the bottom of the tabs). You can **Cancel** at this time. If you cancel, you can start again.

Step 12. At the end of the `Guided Installation` session, a screen is displayed that enables you to review any messages that Ignite-UX encountered. If there are any errors, resolve them before continuing with the installation.

NOTE Ignore any message stating that `/var` needs to be larger than available to hold a dump file. `/var` typically only needs to be set to 50-100 percent as large as the current memory to handle dump files.

Task 4: Deselecting OE Software Bundles

If you use the `Guided Installation` or `Advanced Installations`, then you can deselect the software bundles that are installed by default. For a list of default-installed software bundles, see “Default-Installed Software” on page 183.

If you choose the **No User Interface** option, then you *cannot* deselect the default-installed software bundles.

To deselect the software bundles:

Step 1. In the `Guided Installation` or `Advanced Installation` windows, select the **Software** tab.

Step 2. Use the arrow keys to select a bundle and the spacebar to change the option.

IMPORTANT Deselecting software that HP recommends carries some risk. For example, you may deselect a software bundle that is necessary for another program to work correctly. If in doubt, leave the selections as default.

Task 5: Finishing Your Installation

Finishing the `Guided Installation` process begins with filesets being copied from the media to the hard disk. The system automatically reboots during the installation process.

Installing HP-UX 11i v1 installs a minimum set of default networking drivers that apply to the system. Refer to the *HP-UX 11i v1 Release Notes* available at:

`http://docs.hp.com/hpux/os/11iv1`

You may need to select or specify other available networking drivers to enable other cards on your system.

Step 1. Select **Finish** to complete the `Guided Installation`. The system configures the hard disks and loads a minimum set of commands and libraries. SD then downloads all the products and patches from CD1 or DVD1.

Step 2. When prompted, replace the HP-UX 11i v1 CD or DVD with the requested CD or DVD from the media kit. Software is automatically loaded from each CD or DVD. If you see the following message you may have pressed **Enter** before changing the CD or DVD:

```
Unable to verify CD-ROM media content ...
```

If so, verify that you have changed the CD or DVD and then select the displayed Recovery Action 1: **Retry software Load...** and press **Enter** again. The system automatically reboots after all software has been loaded.

Step 3. Eject the last CD or DVD.

Step 4. Depending on how you set up your parameters, the system either sets basic network configurations automatically, or calls the `set_parms` command after it has rebooted to enable you to set the root password, date and time, time zone, IP address, and additional network parameters.

After `set_parms` is executed, then the `Welcome to HP-UX` screen is displayed.

Step 5. To use a keyboard on this interface, you must specify a language mapping to be used by X Windows and the Internal Terminal Emulator (ITE). Choose the appropriate language. For English, select number **`26`**.

Step 6. You are prompted to answer a few questions before you can use the system. The first is whether or not you plan to use the system on a network. Enter the basic network information for your system.

Step 7. Confirm your choices. You are now finished with the install procedures and presented with a login screen.

Step 8. Log in to the system as root.

Step 9. After the cold-install, store the HP-UX CDs or DVDs in a safe place. You may need them to install drivers or other software later.

Step 10. After installing or updating applications, insert the HP-UX Support Plus CD and install the Quality Pack patch bundles to fix defects in the operating system and OE applications to ensure your system is functioning at the highest quality. For example:

```
/usr/sbin/swinstall -s /cdrom/GOLDQPK11i \
-x patch_match_target=true -x autoreboot=true
```

The depot named `GOLDQPK11i` includes two quality pack bundles, `GOLDBASE11i`, which provides defect fixes for the Base OE (including the always-installed and selectable driver products), and `GOLDAPPS11i`, which provides defect fixes for the OE applications.

For more about this package, refer to the Quality Pack page available at the following Web site:

http://support.itrc.hp.com/estaff/bin/doc.pl/screen=estaffDocs?File=patches_main/hpux_bundles_overview.htm

Retrieving Information After Cold-Installing

After completing the cold-install, you can retrieve the information you had previously saved onto another system.

Create a New Root Home Directory

Consider creating a root home directory that is not `/`. Doing this keeps the user root dot files out of the `/` directory. Make sure it is on the root volume by calling it something like `/homeroot`. Doing this is especially important if you are using Logical Volume Manager (LVM) and `/home` is a separate volume.

1. From the CDE login screen, select **Options** -> **Command Line Login** and log in as root.
2. Except on trusted systems, edit `/etc/passwd` to change the home directory from root to `/homeroot` and save it.
3. Create the `/homeroot` directory:

   ```
   mkdir /homeroot
   ```

4. Move root's personal files (files beginning with `.`) to `/homeroot`:

   ```
   mv /.[a-zA-Z]* /homeroot
   ```

5. Exit and log in again as root.

Recover Files

Recover all the customized and personal files that you saved previously by merging them manually. For example, do not overwrite `/etc/passwd` with your old version. Instead, either paste in entries from your old files or *merge* the old information into the new files.

Restore /home

If you had a local home directory, you can restore it as follows:

- For instance, if you copied it to `/backup/system1/home`, enter these commands:

  ```
  cd /backup/system1/home
  find -depth | cpio -pdm /system1/home
  ```

- If you backed it up to tape with `fbackup`, enter:

  ```
  frecover -x -i /system1/home -v
  ```

Restore Other Files

Carefully use the same techniques to restore other files and directories, such as `/usr`, `/local`, and `/opt`. For help in importing entire volume groups, refer to either *Managing Systems and Workgroups: A Guide for HP-UX System Administrators* or *Managing Superdome Complexes*.

The commands cited in this section do not write over newer files, so your new operating system and any files you update are well protected.

The Next Step

Continue with Chapter 7, “Installing HP Applications and Patches,” on page 111.

6 Updating to HP-UX 11i v1

This chapter describes updating your system to HP-UX 11i v1 using the `update-ux` command.

What You Will Find in This Chapter

- "Before You Begin" on page 88
- "Reviewing the Update Process" on page 90
- "Updating Tips" on page 93
- "Updating to HP-UX 11i v1" on page 95
- "Post-Update Task: Configuring OE Applications" on page 108
- "The Next Step" on page 109

Time Estimate for This Chapter: Approximately 3-4 hours, depending on your system and whether you are installing the HP-UX operating system (OS) or an HP-UX Operating Environment (OE).

Before You Begin

Before you update to HP-UX 11i v1, make sure that:

- You are updating from a supported migration path. See “Supported Update Paths to HP-UX 11i v1” on page 51.
- Your system meets the system requirements to update and operate HP-UX 11i v1. For more details see Chapter 2, “System Requirements for Cold-Installing and Updating,” on page 31.
- You have completed the preparation tasks required to update your system. For more information see Chapter 4, “Preparing to Install or Update to HP-UX 11i v1,” on page 59.

CAUTION

If the Distributed File System (DFS) is installed and in use on your HP-UX 10.20 system to manage large numbers of files, `update-ux` removes it and associated data during the update to HP-UX 11i v1. If you need to continue using DFS, **do not update to HP-UX 11.x or HP-UX 11i v1**.

NOTE

If your system already is running any version of the HP Apache-based Web Server, installing or updating to an HP-UX 11i v1 Operating Environment installs the version of HP-UX Web Server Suite included with the HP-UX 11i v1 OE. Refer to the *HP-UX 11i v1 Release Notes* for more information.

Updating Netscape Directory Server

Although the Netscape Directory Server (NDS) Version 6.02 is included in HP-UX 11i v1 OEs, you must explicitly select NDS during the install or update process. If you do not select NDS, it will not be installed with HP-UX 11i v1.

CAUTION If you have NDS version B.02.00.05 and are updating to HP-UX 11i v1, be sure either to select the new version of NDS during the update or to remove the old version from your system. If you run NDS version B.02.00.05 with HP-UX 11i v1, the server will cease to work and all client systems may lose the ability to have anyone log in.

After NDS is installed or updated with HP-UX 11i v1, additional configuration steps are required to initiate NDS. Refer to the NDS release notes available on the HP-UX 11i v1 Instant Information CD for instructions.

Reviewing the Update Process

This section describes updating to HP-UX 11i v1 using the `update-ux` command and Software Distributor (SD) tools to selectively overwrite the operating system and application software from a media or network source depot.

Figure 6-1 on page 92 shows the overall update process. You can update your system using one of the following methods:

- From a network depot — Use Software Distributor commands to create depots containing OS, OE, and other software bundles, then update from the depot using `update-ux`. For help with this method, refer to the *swcopy* (1M) manpage, the *Software Distributor Administration Guide,* and the *Ignite-UX Administration Guide*. See "Updating from a Network Depot" on page 105 for an example.
- From DVD media — Use the `update-ux` command described in "Updating to HP-UX 11i v1" on page 95.

NOTE If your system is on HP Mission Critical Support, discuss the proper method of installing and patching the OE with your HP Customer Engineer.

IMPORTANT You **must install** the latest version of Update-UX prior to updating your system. Failure to do so may cause the update to fail. See "Task 2: Installing the Latest Update-UX Bundle (Required)" on page 97 for instructions.

NOTE

If you attempt to update from this release (HP-UX 11i v1 September 2005) to an earlier HP-UX 11i v2 release, the update process will stop and you will get the following message:

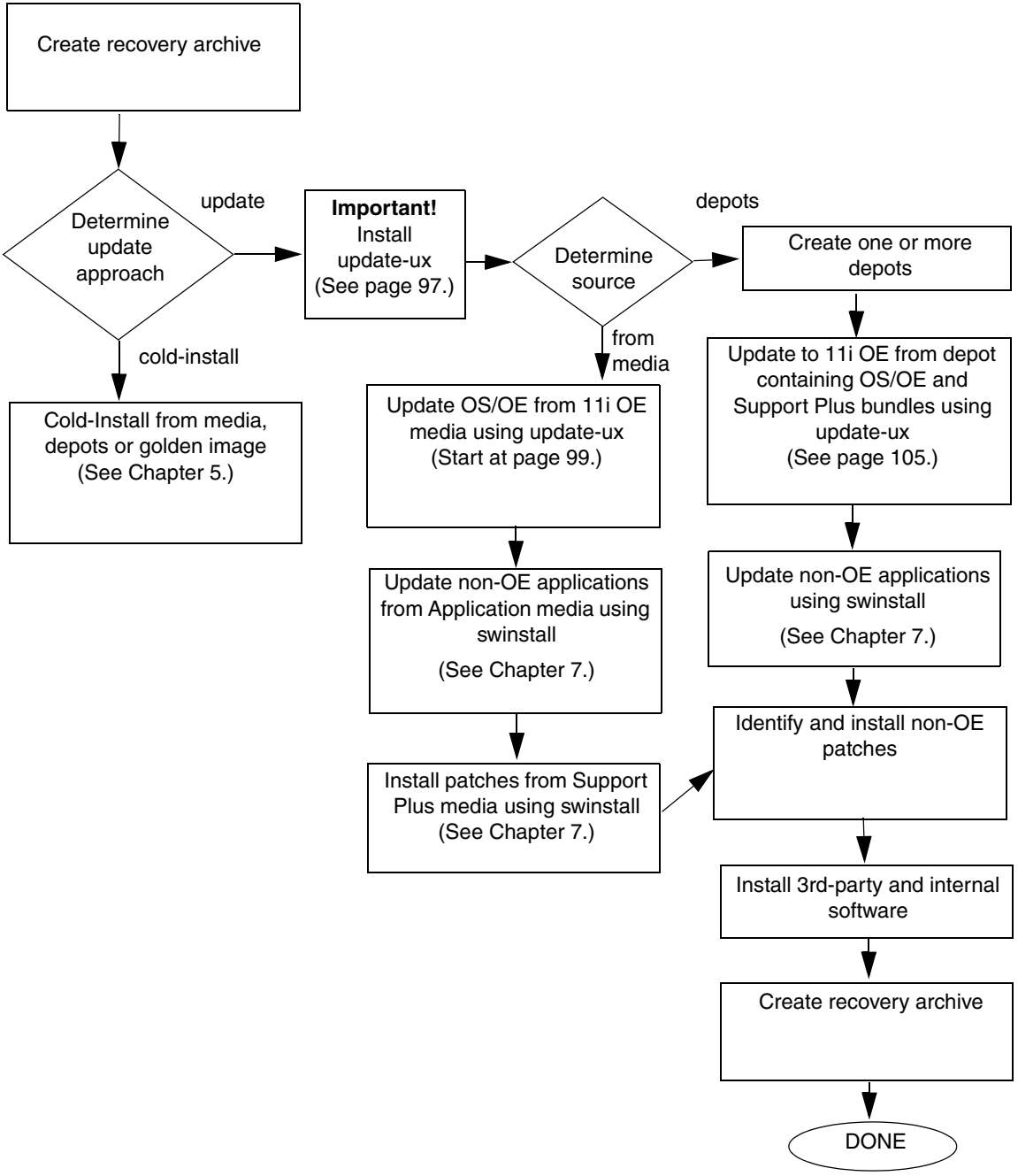
```
ERROR: You are attempting to update from your release of
HP-UX to a version of HP-UX that was released earlier in
time. This is not supported.  The update process has stopped
without making any changes to your system.  Please see the
'Supported Update Paths' section of the HP-UX 11i v2
Installation and Update Guide for more information.
```

What To Do

HP supports the following HP-UX 11i v2 (B.11.23) cold-install and update paths for this release:

- You can cold-install the May 2005 HP-UX 11i v2 (B.11.23) release.
- You can update from HP-UX 11i v1 (B.11.11) December 2004 and earlier HP-UX 11i v1 releases to the May 2005 HP-UX 11i v2 release.

Figure 6-1 Updating to HP-UX 11i v1



Updating Tips

Table 6-1 suggests some tips and recommendations to be aware of during an update process:

Table 6-1 Updating Tips

Topic	Tip
Monitoring the Update Process	If you want to view the update process in detail, open another terminal window and drag it aside so you can also watch for any messages on the window running `update-ux`. Then, use the `tail` command to view `swinstall` messages being logged: **`tail -f /var/adm/sw/swagent.log`** If you want to log all messages directed to the console, use the `script` command. For example, to log all messages into a file named `/tmp/updateOS`, enter: **`script -a /tmp/updateOS`** To halt the `script` log process, enter: **`exit`**
Running Other Commands	You can run other commands during an update, such as viewing files and `tail`. However, do not run other Software Distributor commands during an update; doing so may cause the commands to function improperly.
All Software Does Not Get Updated	The `update-ux` command updates the HP-UX OS and any software specified in additional software bundles available on the source media or depot. When an OE is specified, some products in the OE are not updated automatically when a version of the product not previously installed with an OE already exists on the system. You have to update or reinstall those products after updating HP-UX 11i v1. For more information about how to update these additional software bundles, see “Updating Selectable Software” on page 106.

Table 6-1 Updating Tips (Continued)

Topic	Tip

In Case of Trouble	The `update-ux` command returns an error value when it is not successful:
	`1 - Error during execution; update aborted.`
	`2 - Update aborted via user action (-n or keyboard press)`
	Messages are recorded in `/var/adm/sw/swagent.log`, `/var/adm/sw/swinstall.log`, and `/var/adm/sw/update-ux.log`.
	When updating Ignite-UX, also look at its log in `/var/adm/sw/`.
	If you encounter a problem during the update process, review Appendix B, “Known Problems and Troubleshooting,” on page 133 for possible solutions.

Updating to HP-UX 11i v1

Updating your system using `update-ux` includes the following tasks:

1. Create a network depot so you can update other systems on the network. See “Task 1: Creating a Network Depot (Optional)” on page 96. If you are not creating a network depot, you can skip this task.
2. Install the latest version of the `update-ux` command on your system. See “Task 2: Installing the Latest Update-UX Bundle (Required)” on page 97.
3. Use `update-ux` to update your system. See “Task 3: Using update-ux (Required)” on page 99. Several examples are provided to assist you with some of the most common scenarios for using `update-ux`.

After updating to HP-UX 11i v1, you may need to configure OE Applications to make your system fully functional.

NOTE `update-ux` removes all HP-UX 10.x patches from the system prior to updating to HP-UX 11i v1. Any 10.x applications left on the system after the update may not be supportable if they required those patches. After migrating your system, consult the documentation for those remaining applications for HP-UX 11i v1 requirements.

CAUTION If you are using CDs to update an HP-UX 10.20 system to the HP-UX 11i v1 September 2005 (B.11.11) Operating Environments, the `update-ux` command will fail because HP-UX 10.20 does not support Rockridge extension. To resolve this issue, first update to the desired HP-UX 11i v1 December 2003 Operating Environments and then update to the desired HP-UX 11i v1 September 2005 Operating Environments.

Task 1: Creating a Network Depot (Optional)

If you want to update other systems on the network then you must first create a network depot before you update your system and other systems.

NOTE This optional step pertains to creating a network depot so you can update other systems on the network.

If you already have a network depot, go to "Task 2: Installing the Latest Update-UX Bundle (Required)" on page 97.

As root, follow this procedure to create a network depot from the HP-UX 11i v1 CD or DVD onto a depot server or other system running HP-UX 11i v1 in your network:

Step 1. Verify that you have at least 2 GB of free space to create the network depot on another system in your network. If this space is not available, use `sam` either to create a new volume group or to extend an existing volume group. For help, refer either to `SAM` help or *Managing Systems and Workgroups: A Guide for HP-UX System Administrators*.

Step 2. Log in as root and mount the logical volume on a new directory named `/update`.

This directory will hold your network depot.

Step 3. Insert the HP-UX 11i v1 CD or DVD into the drive.

Step 4. Find the CD or DVD device file name:

```
ioscan -f -C disk | more
```

`/dev/dsk/c1t2d0` is a typical CD device name.

Step 5. Create the directory under root `(/)`:

- CD: **`mkdir /cdrom`**
- DVD: **`mkdir /dvdrom`**

Step 6. Mount the CD or DVD onto the new directory as a file system. For example:

- CD: **`mount /dev/dsk/c1t2d0 /cdrom`**
- DVD: **`mount /dev/dsk/c1t2d0 /dvdrom`**

Step 7. Merge all products on the mounted CD or DVD to the target depot, for example `/update/update-depot`:

- CD: **`swcopy -s /cdrom \* @ /update/update-depot`**
- DVD: **`swcopy -s /dvdrom \* @ /update/update-depot`**

Step 8. Unmount the CD or DVD from its directory:

- CD: **`umount /cdrom`**
- DVD: **`umount /dvdrom`**

If you are updating to HP-UX 11i v1 using CD, follow steps 9 - 10; if you are using DVD, continue to "Task 2: Installing the Latest Update-UX Bundle (Required)" on page 97.

Step 9. Insert the requested HP-UX 11i v1 CD.

Step 10. Repeat Steps 6 through 8 for the requested OE CDs and the Support Plus CD.

The network depot is now ready to update your system to HP-UX 11i v1. Continue with "Task 2: Installing the Latest Update-UX Bundle (Required)" on page 97.

Task 2: Installing the Latest Update-UX Bundle (Required)

This procedure describes how to install the latest version of the `UPDATE-UX` bundle, which includes the `update-ux` command.

Step 1. Find the CD or DVD device file name:

```
ioscan -f -C disk | more
```

`/dev/dsk/c1t2d0` is a typical CD device name.

Step 2. Create the directory under root `(/)`:

- CD: **`mkdir /cdrom`**
- DVD: **`mkdir /dvdrom`**

Step 3. Mount the CD or DVD onto the new directory as a file system. For example:

- CD: **`mount /dev/dsk/c1t2d0 /cdrom`**
- DVD: **`mount /dev/dsk/c1t2d0 /dvdrom`**

Step 4. Using ksh, Posix-sh, or Bourne shell, install `update-ux` on the target system; the depot example uses `depot_server:/var/depots/my_depot`

- CD: **`swinstall -r -s /cdrom Update-UX \`**
  `\@ /var/adm/sw/update-ux.root 2> /dev/null`
- DVD: **`swinstall -r -s /dvdrom Update-UX \`**
  `\@ /var/adm/sw/update-ux.root 2> /dev/null`

```
swinstall -r -s depot_server:/var/depots/my_depot \
Update-UX \@ /var/adm/sw/update-ux.root 2> /dev/null
```

TIP The backslash (`\`) at the end of the first line is not needed if you enter the complete command on one line.

The `-r` option writes log files to the specified alternate root (pseudo-root) location, `update-ux.root`. (**Do not specify any other alternate root location.**) Because the HP-UX 11i v1 Software Distributor tool contains many keywords that 10.20 and 11.00 SD do not recognize, installing `update-ux` initially at this alternate root location eliminates many unnecessary `update-ux` warnings.

Immediately after `update-ux` is installed, a script copies `update-ux` to `/usr/sbin/`. When `update-ux` runs for the first time, it removes the initial version at the alternate root location.

Task 3: Using update-ux (Required)

After you have installed the `Update-UX` bundle on the target system and, optionally, created an update depot containing all software to be installed, you can now proceed to update your target system.

The Update-UX product includes a **default selections** file, `update-ux.selections`, which is installed in `/usr/lib/sw`. This file provides a list of bundles that are selected for install during an OS update.

Update-UX provides support for the `-f` *`selection_file`* option on the `update-ux` command line. With this option you can create your own selections file and specify that your file be used in place of the default selections file. This provides you with the flexibility to deselect any bundles listed in the `update-ux.selections` file by providing your own file, which does not contain these bundles.

To do this, you must first install the March 2004 version or later version of the Update-UX product onto your target system, then copy and edit the `/usr/lib/sw/update-ux.selections` file as desired. When executing Update-UX, your custom selections file can be specified on the `update-ux` command line via the `-f` *`selection_file`* option.

Use the following syntax to run the `update-ux` command:

`update-ux -s` *`source_location`* `[-?] [-n|-y] [-i] [-f` *`selection_file`*`] [-x` *`option=value`*`] [`*`sw_spec`*`]`

where:

`-s` *`source_location`*

Specifies the source containing the new software depot. Possible locations are a local directory, a mounted DVD containing a depot, or a remote system-and-depot combination. All paths used in the *`source_location`* must be absolute paths. If *`source_location`* is a remote system and depot combination, specify the remote system first, followed by the absolute path to the remote depot, separated by a colon with no spaces; for example: `swperf:/var/spool/sw`

`-?` Prints the usage statement.

`-n|-y` Specifies whether or not `update-ux` issues a message and waits for your response to continue whenever something unexpected is encountered. Specify `-n` first (or omit this option) to have `update-ux` "not continue" when an error is issued. When you have reviewed or resolved all errors, use `-y` instead of `-n` to have `update-ux` ignore all messages that would otherwise cause `update-ux` to wait for a user response.

`-i` Specifies the `swinstall` interactive user interface to select software products from a depot or bundle during the update. For more information, refer to the *swinstall* (1M) manpage.

`-f` *`selection_file`*

Reads the list of software selections from *`selection_file`* instead of (or in addition to) the command line. This option enables you to select and update optional software or to deselect default-installed software.

The Update-UX product includes a **default selections** file, `update-ux.selections`, which is installed in `/usr/lib/sw`. This file provides a list of bundles that are selected for install during an OS update.

Update-UX provides support for the `-f` *`selection_file`* option on the `update-ux` command line. With this option you can create your own selections file and specify that your file be used in place of the default selections file. This provides you with the flexibility to deselect any bundles listed in the `update-ux.selections` file by providing your own file, which does not contain these bundles.

To do this, you must first install the March 2004 or later version of the Update-UX product onto your target system, then copy and edit the `/usr/lib/sw/update-ux.selections` file as desired. When executing Update-UX, your custom selections file can be specified on the `update-ux` command line via the `-f` *`selection_file`* option.

`-x` *`option`*`=`*`value`* Specifies `swinstall -x` options to be applied during the update. For a typical update, no `swinstall` options are required. `swinstall -p` (preview) is not supported. For information on `swinstall` options, refer to the *swinstall* (1M) manpage or the *Software Distributor Administration Guide*.

`sw_spec` Specifies one or more software bundles to be updated, such as an Operating Environment (OE) bundle name, an application bundle, or a network-driver. If an OE bundle name is not included on the command line, only the core OS will be updated. For more information, see Appendix C, “HP-UX 11i v1 Software Bundles,” on page 175.

For more about `update-ux`, refer to the *update-ux* (1M) manpage.

Examples: Using update-ux to Update Your System

Your system configuration and your planning determine how you use `update-ux`. This section provides some scenarios and examples of how you might use `update-ux` to update your system:

- "Updating to HP-UX 11i v1 OS (OE Installed)" on page 103 explains how to update to HP-UX 11i v1 with an Operating Environment.
- "Updating to HP-UX 11i v1 OS (No OE Installed)" on page 104 describes how to update the HP-UX 11i v1 OS without an Operating Environment.
- "Adding or Upgrading an OE" on page 104 explains how to update your system by either adding or upgrading the Operating Environment on your system.
- "Downgrading an OE" on page 105 explains how to move your system from an advanced Operating Environment to a smaller Operating Environment.
- "Updating from a Network Depot" on page 105 explains how to update your system from a server on the network.
- "Updating Selectable Software" on page 106 explains how to update your system with selectable software bundles.
- "Updating Using Interactive Software Selection" on page 106 explains how to use the interactive option to manually select the software you want to update.
- "Updating to a 64-bit OS" on page 107 shows you how to move a 32-bit system to a 64-bit OS.
- "Update Using match_target" on page 107 explains how to update your system using the `match_target` option.

Recommended Update

Updating to HP-UX 11i v1 OS (OE Installed)

To update to HP-UX 11i v1 and include an HP-UX 11i v1 Operating Environment, you need to specify the OE bundle name in the `update-ux` command. The OE bundle names are:

`HPUX11i-OE`	HP-UX 11i v1 Foundation OE
`HPUX11i-OE-Ent`	HP-UX 11i v1 Enterprise OE
`HPUX11i-OE-MC`	HP-UX 11i v1 Mission Critical OE
`HPUX11i-MTOE`	HP-UX 11i v1 Minimal Technical OE
`HPUX11i-TCOE`	HP-UX 11i v1 Technical Computing OE

For example, to update to HP-UX 11i v1 and install the HP-UX 11i v1 Foundation OE, insert the HP-UX 11i v1 DVD in the local drive mounted at `/dvdrom`. As root, enter:

```
/usr/sbin/update-ux -s /dvdrom HPUX11i-OE
```

Alternately, if you want to update to HP-UX 11i v1 and install the Enterprise OE (from a supported update path), enter:

```
/usr/sbin/update-ux -s /dvdrom HPUX11i-OE-Ent
```

NOTE Make sure to read “Supported Update Paths to HP-UX 11i v1” on page 51 to ensure that you are updating your system from a supported update path.

NOTE Make sure that you install all of the selectable OE bundles that you want at the same time that you do your update. See “Updating Selectable Software” on page 106 for more information.

For details on what is included in each of the Operating Environments, see Appendix C, “HP-UX 11i v1 Software Bundles,” on page 175.

Updating to HP-UX 11i v1 OS (No OE Installed)

IMPORTANT If you already have an Operating Environment installed on your system, you cannot use this scenario. Instead, use "Updating to HP-UX 11i v1 OS (OE Installed)" on page 103. Attempting this scenario when you already have an Operating Environment installed will cause `update-ux` to fail.

NOTE HP strongly recommends that you update your system with an Operating Environment to provide you with an integrated and tested set of supporting software and applications.

If you do not specify an OE bundle, `update-ux` only installs the OS, networking, diagnostic, and CDE bundles listed in Appendix C, "HP-UX 11i v1 Software Bundles," on page 175. Any additional software bundles associated with an OE are not installed.

For example, to update the HP-UX 11i v1 OS, insert the HP-UX 11i v1 DVD in the local mounted drive and enter the following command:

```
/usr/sbin/update-ux -s /dvdrom
```

Adding or Upgrading an OE

To install an OE on an HP-UX 11i v1 system not containing an OE, or to upgrade HP-UX 11i v1 to higher-level OE (for example, HP-UX 11i v1 Foundation OE to HP-UX 11i v1 Enterprise OE), insert the HP-UX 11i v1 DVD and specify the new OE using the `update-ux` command.

For example, to add the HP-UX 11i v1 Enterprise OE, enter:

```
/usr/sbin/update-ux -s /dvdrom HPUX11i-OE-Ent
```

When the update is complete, the original OE bundle wrapper (if one existed) is removed and replaced with the new bundle wrapper.

Downgrading an OE

If you want to downgrade your system from a higher-level OE, say, from Mission Critical OE to Foundation OE, first use `update-ux` to install the lower level OE from the latest set of HP-UX 11i v1 media, then use `swremove` to remove the unwanted OE bundle and its software. For example, to move from the 64-bit Mission Critical OE to the 64-bit default HP-UX 11i v1 OE:

Step 1. As root, add default HP-UX 11i v1 OE:

- CD: **`/usr/sbin/update-ux -s /cdrom -y HPUX11i-OE`**
- DVD: **`/usr/sbin/update-ux -s /dvdrom -y HPUX11i-OE`**

The `-y` option causes `update-ux` to ignore warning messages and complete the update.

Step 2. Remove the Mission Critical software:

```
/usr/sbin/swremove HPUX11i-OE-MC
```

This command removes the IPD entries and software for the additional (superset) software in the Mission Critical OE, leaving the default HP-UX 11i v1 OE software intact.

Updating from a Network Depot

To update from a network depot on a remote system named `netdepot`, include the path to the depot in the `update-ux` command. The following example does an update to the HP-UX 11i v1 Enterprise OE:

```
/usr/sbin/update-ux -s netdepot:/update/update_depot \
HPUX11i-OE-Ent
```

Updating Selectable Software

To update to HP-UX 11i v1 and specify additional selectable bundles such as Software Package Builder on the command line, follow these steps:

Step 1. If you want to install the HP-UX 11i v1 Foundation Operating Environment bundles listed in Appendix C, "HP-UX 11i v1 Software Bundles," on page 175, plus the `SwPkgBuilder` Software Package Builder bundle, enter from the DVD media as root:

```
/usr/sbin/update-ux -s /dvdrom HPUX11-OE SwPkgBuilder
```

If you want only to update your system with a selectable software bundle, enter:

```
/usr/sbin/update-ux -s /dvdrom SwPkgBuilder
```

Step 2. Complete any configuration for HP software explained in the *HP-UX 11i v1 Release Notes* available on the Instant Information CD and at: **`http://docs.hp.com/hpux/os/11iv1`**

Updating Using Interactive Software Selection

To interactively select software for an update, use the `-i` option. For example:

```
/usr/sbin/update-ux -s /cdrom -i
```

`update-ux` displays `swinstall`'s interactive user interface with software already selected to match the default update. Now you can change software selections. For example, you can select a non-default network driver or a web browser before performing the update. Because `update-ux` selects OS, networking, language, and diagnostic bundles by default, the interactive user interface provides a way to deselect the default software.

CAUTION Do not combine `-i` and `-x` options in the same `update-ux` command.

For help using `swinstall` in interactive mode, refer to the *swinstall* (1M) manpage or the *Software Distributor Administration Guide*.

Updating to a 64-bit OS

Make sure that your system can support the 64-bit OS before running this command.If you have decided to update an HP-UX 11i v1 32-bit system to a 64-bit OS, use the following command:

- CD: **/usr/sbin/update-ux -s /cdrom -a 64**
- DVD: **/usr/sbin/update-ux -s /dvdrom -a 64**

Update Using match_target

The following command using the `match_target` option installs the entire `HPUX11i-OE` bundle, including all OS, networking, CDE, and diagnostic bundles described in the previous example and any software selected by `match_target`. The software you want to install might not come from a bundle.

- CD: **/usr/sbin/update-ux -s /cdrom **
  -x match_target=true HPUX11i-OE
- DVD: **/usr/sbin/update-ux -s /dvdrom -x match_target=true HPUX11i-OE**

Updating Existing OE Components Only

The following command updates the same OE (`HPUX11i-OE`) and installs the OS, networking, CDE, and diagnostics bundles.

- CD: **/usr/sbin/update-ux -s /cdrom -x match_target=true HPUX11i-OE.**
- DVD: **/usr/sbin/update-ux -s /dvdrom -x match_target=true HPUX11i-OE.**

The difference from the previous example is that the dot (**.**) following the OE bundle name installs the OE bundle wrapper, not the entire OE. With this variation, only those OE components that are already installed on your system get updated. Any new OE components and products are not installed.

If no argument is specified, then only the OS and its components are updated. However, HP does not recommend using `match_target` to update your system to an OE without specifying an argument because:

- If software arguments are not specified, `match_target` only installs filesets matching those already on your system. Filesets containing any new HP-UX 11i v1 functionality introduced are not selected.
- Some software that is installed does not include bundle wrappers, making identification of software on the system more difficult.

Post-Update Task: Configuring OE Applications

After updating to an HP-UX 11i v1 Operating Environment (OE), some OE products need post-installation configuration to make them functional. This may be indicated by a message logged in `/var/adm/sw/swagent.log`.

Refer to each product's installation instructions for details. The location of OE product documentation is listed in the *HP-UX 11i v1 Release Notes,* available on the Instant Information CD and at the HP Technical Documentation Web site:

`http://docs.hp.com`

The Next Step

Continue with the Chapter 7, “Installing HP Applications and Patches,” on page 111.

7 Installing HP Applications and Patches

This chapter describes how to install HP applications from the Applications DVD, and provides references for patching and patch management. Before you begin, make sure you have already completed installing or updating HP-UX.

What You Will Find in This Chapter

- "Installing HP-UX Applications" on page 112
- "HP-UX Patching and Patch Management" on page 115
- "The Next Step" on page 116

Time Estimate for This Chapter: Approximately 1-2 hours per patch (less if you download and install multiple patches in a single session) and 1-2 hours per application.

Installing HP-UX Applications

Your HP-UX 11i v1 media kit contains the HP-UX Applications DVD. The Applications DVD has optional development tools and system management software that you can choose to install or update the existing development tools and system management software on your system.

TIP

You can find the complete list of applications included in the HP-UX 11i v1 release in the HP Application Availability Matrix:

http://www.hp.com/go/softwareinfo/MATRIX

Tips for Installing or Updating HP Applications

Here are some tips for installing or updating HP applications:

- HP-UX Applications DVDs have an ASCII file on each DVD called `TABLE_OF_CONTENTS` that lists all software products delivered with the Applications DVD. You can view this ASCII file with `vi`, `emacs`, or any other text editor.
- To minimize the number of required reboots for installation of applications and patches you can use the same `swinstall` session.
- For HP applications, documentation exists that explains how to install and use an application. The documents may include release notes, readme files, CD and DVD booklets, white papers, and guides. Refer to the Instant Information CD or go to the HP Technical Documentation Web site:

  http://docs.hp.com

Installing HP-UX Applications from the DVD

Before you begin, review Appendix B, "Known Problems and Troubleshooting," on page 133 for any installation issues that apply to your system.

Required Media

Have the HP-UX 11i v1 Applications DVD ready from the HP-UX 11i v1 media kit.

You must boot HP-UX 11i v1 to install HP-UX application software products. Use the following procedure to install products from the Applications DVD:

Step 1. Insert the Applications DVD in the DVD drive.

Step 2. Mount the Applications DVD.

To install software from the Applications DVD, you must mount the DVD as a file system that HP-UX 11i v1 can access:

a. Determine the DVD device name.

Use the `ioscan -funC disk` command to list disk devices, including the DVD devices.

b. Create a mount point for the Applications DVD, if one does not yet exist.

The mount point is a directory that HP-UX uses as an access point for the DVD. Often a `/dvdrom` directory is used. If this directory does not exist, create it using the `mkdir /dvdrom` command.

c. Use the `mount` command to mount the DVD.

Using the `mount` command, specify the DVD device name and mount point. For example, the following command mounts the `/dev/dsk/c1t0d0` device as the `/dvdrom` directory:

```
mount /dev/dsk/c1t0d0 /dvdrom
```

Refer to the *mount* (1M) manpage for details.

Step 3. To determine which products and versions are on your system, use the `swlist` command:

```
/usr/sbin/swlist -l product
```

Step 4. Use `swinstall` to install software from the Applications DVD.

The following example uses `swinstall` to install software from the source mounted at `/dvdrom`:

```
swinstall -i -s /dvdrom
```

Refer to the *swinstall* (1M) manpage for details.

Step 5. Select and install software from the Applications DVD.

The `swinstall` program presents an interface for selecting and installing software from the DVD.

Step 6. Unmount and eject the Applications DVD.

You must unmount the DVD before you can eject it from the DVD drive. The DVD is automatically unmounted whenever the server reboots.

Use the `umount` command to unmount the DVD. For example, `umount /dvdrom` unmounts the `/dvdrom` file system. Refer to the *umount* (1M) manpage for details.

NOTE

After you install or update HP-UX 11i v1, the latest critical patches that shipped with the media are installed on your system. Other recommended critical or required patches may have become available after the initial release of the media. On a regular basis go to the HP IT Resource Center for any new, recommended critical patches: **http://itrc.hp.com**

HP-UX Patching and Patch Management

Standard HP-UX bundles supply diagnostics and patches for HP-UX core files, applications, and diagnostic products. These bundles enable new hardware, fix known defects, and provide diagnostics tools. In some cases, a patch may deliver new software functionality.

All bundle software is cumulative and replaces completely any previous bundle release for the same operating system (OS) release. See Appendix C, “HP-UX 11i v1 Software Bundles,” on page 175 for a listing of the always-installed, default-installed, and selectable software bundles.

HP releases patches to deliver incremental updates to your system. Patches are best known for delivering defect fixes, but also deliver new functionality and features, enable new hardware, and update firmware. You can use HP-UX patches to update HP-UX software without having to completely reinstall your system application.

The *Patch Management User Guide for HP-UX 11.x Systems* provides information and procedures on how to acquire and install standard HP-UX patch bundles, including the HWE and Quality Pack (QPK) bundles. Go to the HP Technical Documentation Web site:

`http://docs.hp.com/hpux/os/11iv1`

In addition, the IT Resource Center is a good resource for patches, tools, and information:

`http://itrc.hp.com`

NOTE The HP patch resources are for HP-related patches only. To install or upgrade other vendor patches and applications, refer to the appropriate vendor documentation.

The Next Step

Continue with Chapter 8, “Verifying System Install or Update,” on page 117.

8 Verifying System Install or Update

This chapter provides steps to verify that your system is ready and back in production. Before you begin, make sure you have already completed either cold-installing or updating to HP-UX 11i v1.

What You Will Find in This Chapter

- "Verifying the HP-UX Cold-Install or Update" on page 118
- "Backing Up the System" on page 120
- "The Next Step" on page 121

Time Estimate for This Chapter: Approximately 2-3 hours to verify the installation or update of HP-UX.

TIP This chapter provides verification information for the HP-UX cold-install and update. To verify other vendor applications, refer to the appropriate vendor documentation.

Verifying the HP-UX Cold-Install or Update

To verify that HP-UX 11i v1 was installed or updated successfully, use the Software Distributor commands `swlist` and `swverify`, as described in this section.

TIP

For help with these commands, refer to the *swlist* (1M) and *swverify* (1M) manpages, and the *Software Distributor Administration Guide*, which is available on the Instant Information CD or at the HP Technical Documentation Web site:

http://docs.hp.com/hpux/os/11iv1

Task 1: Listing all Software Installed on Your System

Step 1. List the bundles and products installed on your system:

```
/usr/sbin/swlist -l bundle -l product /tmp/software_list
```

Step 2. Check the list to see that it contains the bundles and products you wish to have installed on your system.

Step 3. For a cold install, you may want to compare the output of the `swlist` command above with the contents of the HP-UX 11i v1 Operating Environment DVD and the Applications DVD. To see the contents of a DVD, issue the following command:

```
/usr/sbin/swlist -l bundle -l product -s /dvdrom \
/tmp/dvdcontent
```

Task 2: Verifying the Installed Software

Step 1. Verify that the basic operating system was installed successfully:

```
/usr/sbin/swverify HPUXBaseOS
/usr/sbin/swverify HPUXBaseAux
/usr/sbin/swverify Bundle11i
```

The message "Verification succeeded" should be displayed on the console at the end of the operation. Further messages from the verification process can be found in the log files: `/var/adm/sw/swverify.log` and `/var/adm/sw/swagent.log`

Step 2. Verify that the Operating Environment Bundle was installed successfully:

```
/usr/sbin/swlist -l bundle | grep HP-UX11i
/usr/sbin/swverify  bundlename
```

where *bundlename* is the bundle displayed by the first command.

The message "Verification succeeded" should be displayed on the console at the end of the operation. Further messages from the verification process can be found in the log files: `/var/adm/sw/swverify.log` and `/var/adm/sw/swagent.log`

Step 3. As an alternative to step 1 and step 2 above, you can choose to verify that all software was successfully installed on your system by typing the following command:

```
/usr/sbin/swverify \*
```

The message "Verification succeeded" should be displayed on the console at the end of the operation. Further messages from the verification process can be found in the log files: `/var/adm/sw/swverify.log` and `/var/adm/sw/swagent.log`

Backing Up the System

Now that you have a solid system configuration, you need to back it up. This provides you with a stable configuration that you can use to rebuild the system, if necessary.

For more information, see “Backing Up Your System” on page 64.

The Next Step

Now that you have installed or updated your system and have all the HP applications and patches that you need, you must configure your system.

You can find many of the configuration tasks in *Managing Systems and Workgroups: A Guide for HP-UX System Administrators*. The guide is available at the HP Technical Documentation Web site:

http://docs.hp.com/hpux/os/11iv1

A Booting HP Servers and Workstations

This appendix describes booting various HP servers and workstations using the built-in Boot ROM firmware interface. As explained here, the built-in boot process differs between newer and older workstations and servers.

What You Will Find in This Appendix:

- "Halting the Autoboot Process" on page 124
- "Booting Workstations" on page 125
- "Booting HP Servers" on page 127
- "Booting V-Class Systems" on page 130
- "Searching for Other Bootable Devices" on page 132

NOTE For help booting partitions in HP Superdome and S-Class servers, see the *Managing HP Superdome Complexes* manual, available on the Instant Information CD and on the Web:

`http://docs.hp.com/hpux/os/11i/`

NOTE If you need help during the boot process, enter: **`help`**

Halting the Autoboot Process

1. Make sure any external devices connected to the target system are switched ON.
2. Switch ON the target computer or cycle power.
3. Insert the install media into the drive. At the `Stop Autoboot` message:
   - Workstations: Press and hold down **Esc**.
   - Servers: Press and hold down **Esc** or any other key.
4. See the appropriate following section for your system's boot process.

If you need help during the boot process, enter: **`help`**

Booting Workstations

Newer workstation boot menu

After stopping the boot process, the system displays a menu:

```
Command                                 Description
Auto [boot|search] [on|off]             Display or set auto flag
Boot [pri|alt|scsi.addr] [isl]          Boot from primary, alternate or SCSI
Boot lan[.lan_addr] [install] [isl]     Boot from LAN
Chassis [on|off]                        Enable chassis codes
Diagnostic [on|off]                     Enable/disable diagnostic boot mode
Fastboot [on|off]                       Display or set fast boot flag
Help                                    Display the command menu
Information                             Display system information
LanAddress                              Display LAN station addresses
Monitor [type]                          Select monitor type
Path [pri|alt] [lan.id|SCSI.addr]       Change boot path
Pim [hpmc|toc|lpmc]                     Display PIM info
Search [ipl] [scsi|lan [install]]       Display potential boot devices
Secure [on|off]                         Display or set security mode
```

When you see the boot menu:

Step 1. Enter: **`search`**

Step 2. If the CD or DVD device is identified in the list shown by the `search` command, proceed with the following steps. Otherwise, check the device and cable connections and repeat the search.

Step 3. Enter: **`boot scsi.`*`x`***

Use the SCSI address of the boot device for *x*.

Step 4. If you see the prompt, `Interact with IPL (y or n)?`, enter: `n`

(The bottom selections may not appear unless you hold down **Esc**.)

Older workstation boot menu

Older HP Workstations display a menu similar to this:

```
b)    Boot from specified device
s)    Search for bootable devices
a)    Enter Boot Administration mode
x)    Exit and continue boot sequence
?)    Help
Select from menu:
```

To start a search for bootable devices, enter: **s**

Older workstation search results

```
Searching for Devices with Bootable Media.
To terminate search, press and hold the ESCAPE key.
Device Selection      Device Path            Device Type and Utilities
P0                    scsi.6.0               HP 2213A       IPL
P1                    scsi.3.0               HP HP35480A    IPL
P2                    scsi.0.0               TOSHIBA CD-ROM XM-3301TA IPL
Enter boot selection, (h)elp, or e(x)it:
```

You will see a list of `Pn` selections, as shown above.

If your boot device does not appear in the search list:

Step 1. Check the hardware.

To exit, enter: **x**

Step 2. To initiate another search, enter: **s**

Step 3. At the prompt `Enter boot selection`, enter the `Pn` device selection for the device containing your install media.

If you know the SCSI address of the device beforehand, you can skip the search and simply enter this at the `Select from menu` prompt:

b scsi.*x*

After choosing the boot path and loading the Ignite-UX tool, the Ignite-UX keyboard languages screen appears (if your system has a PC-style keyboard). From this point on, respond to the requests for information on this and successive screens.

Booting HP Servers

As noted previously, you can halt the server autoboot process and redirect it to boot from the desired media device. To do so, press any key during the autoboot process to display a Main Menu:

Newer server boot menu

```
----------------------- Main Menu --------------------------
Command                         Description
BOot [PRI|ALT|<path>]           Boot from specified path
PAth [PRI|ALT] [<path>]         Display or modify a path
SEArch [DIsplay|IPL] [<path>] Search for boot devices
COnfiguration menu              Displays or sets boot values
INformation menu                Displays hardware information
SERvice menu                    Displays service commands
DIsplay                         Redisplay the current menu
HElp [<menu>|<command>]         Display help for menu or command
RESET                           Restart the system
---------
Main Menu: Enter command or menu >
```

You only need to enter the initial capital letters for each command.

Step 1. Determine the boot device that contains the install media. The Alternate Boot Device is typically set to the CD/DVD drive. If this is the case, enter: **`bo alt`**

Step 2. To search for available boot devices, type: **`search`** (or **`sea`**)

Newer server search results

Here is a typical output:

```
Searching for potential boot device.
This may take several minutes.
To discontinue, press any key.
Path Number           Device Path            Device Type
------------------------------------------------------------------------
   P0                    56/52.0    (dec)     Seq. record access media
   P1                    56/52.3    (dec)     Seq. record access media
   P2                    56/52.4    (dec)     Random access media
   P3                    56/52.6    (dec)     Random access media
Main Menu: Enter command or menu >
```

For example, enter: **bo *pn***

where *pn* is the path number for the install device shown in the search output. You can also specify the device by the hardware path, such as 56/52.0, in place of the path number.

Booting a server

For Models 8*x*7, 845, 835, 870, and other older HP Servers, the boot display looks like this:

```
Console path         = 56.0.0.0.0.0.0    (dec)
                       38.0.0.0.0.0.0    (hex)

Primary boot path    = 52.2.0.0.0.0.0    (dec)
                       34.00000002.0.0.0.0.0    (hex)

Alternate boot path = 52.0.0.0.0.0.0    (dec)
                       34.0.0.0.0.0.0    (hex)

64 MB of memory configured and tested.
Autoboot from primary path enabled.
To override, press any key within 10 seconds.

Boot from primary boot path (Y or N)?> n
Boot from alternate boot path (Y or N)?>
Enter boot path, command, or ?>
```

Step 1. Switch the system ON.

Step 2. Press any key to stop the autoboot process.

Step 3. Insert the install media.

Step 4. Determine the hardware path of the install device from your system administrator. (There is no search capability to determine this information on older HP server models).

- If the primary path shown on your screen is not the same as that for the install device, respond with **n** to `Boot from primary boot path`. In this case, you will then be asked if you want to boot from the alternate path, which is typically set to the CD or DVD device.
- If the primary path shown on your screen matches that for the install device, respond with: **y**
- If neither the primary or alternate device paths correspond to that for the CD or DVD device, respond with **n** to both prompts. In this case, enter the hardware path of the device (for example, `52.3.0`) at the prompt: `Enter boot path, command, or ?>`

Step 5. To the question `Interact with IPL (y or n)?`, enter: **n**

TIP To start over at this point, simply switch the system OFF and ON again.

After choosing the boot path and the install utility loads, the keyboard languages screen appears (if your system has a PC-style keyboard). Respond to the requests for information on this and the following screens. Loading the install kernel takes 3 to 5 minutes.

Booting V-Class Systems

V2200 system boot console

To boot the system from the install media, first power-up the system and any external drive, as explained earlier. Portions of a typical V-Class boot display are shown below. *To stop the system boot process and select the device with the install media, press any key within 10 seconds after you see "System is HP 9000 V2000 series":*

```
OBP reboot
SPP2000, POST version 3.1.4.0, compiled 1997/06/27 10:38:45 LAB #0001

Booting OBP...

System is HP 9000 V2000 series
Autoboot and Autosearch flags are both OFF or we are in HP core mode.
Processor is entering manual boot mode. ...
```

If the system is set to auto-boot, you will see this:

```
Processor is starting the autoboot process.
To discontinue, press any key within 10 seconds. ...
```

Press any key to see the boot menu:

```
Command                              Description
AUto [BOot|SEArch ON|OFF]            Display or set the specified flag
BOot [PRI|ALT|<path> <args>]         Boot from a specified path
BootTimer [time]                     Display or set boot delay time
CLEARPIM                             Clear PIM storage
CPUconfig [<proc>] [ON|OFF]          Configure/Deconfigure Processor
DEfault                              Set the sytem to defined values
DIsplay                              Display this menu
ForthMode                            Switch to the Forth OBP interface
IO                                   List the I/O devices in the system
LS [<path>|flash]                    List the boot or flash volume
OS [hpux|sppux]                      Display/Select Operating System
PASSword                             Set the Forth password
PAth [PRI|ALT|CON] [<path>]          Display or modify a path
PDT [CLEAR|DEBUG]                    Display/clear Non-Volatile PDT state
PIM_info [cpu#] [HPMC|TOC|LPMC]      Display PIM of current or any CPU
RESET [hard|debug]                   Force a reset of the system
RESTrict [ON|OFF]                    Display/Select restricted access to Forth mode
SCSI [INIT|RATE] [bus slot val]      List/Set SCSI controller parms
SEArch [<path>]                      Search for boot devices
SECure [ON|OFF]                      Display or set secure boot mode
TIme [cn:yr:mo:dy:hr:mn[:ss]]        Display or set the real-time clock
VErsion                              Display the firmware versions
Command:
```

To determine the boot path, enter:

pa

```
Primary boot path   = 1/0:0.4.0
Alternate boot path = 15/3
Console path        = 15/1
Keyboard path       = 15/1
```

Booting from the primary path

If your boot device (CD) is mounted at the primary path, enter:

bo pri

```
Device       : /pci@fe,90000/symbios@0,0/sd@4,0:cntl
Directory    : LIF
File         : HPUX
Arguments    : hpux
Loading      : HPUX ............ %%xxxxxx%% bytes loaded.
101456  + 61440  + 864184  start 0xd01cc0
Boot: disc(1/0/0.4.0;0)/disc(1/0/0.4.0;0):INSTALL
7245824 + 1328048 + 706428 start 0x29168
HPUX: kernel load begins
...
```

The install kernel then loads from the CD device.

Searching for Other Bootable Devices

If your CD is not mounted at the primary path, enter **sea** (search) at the command prompt to see a general listing of devices. The CD will be listed with its hardware path. For example:

```
Command: sea
Searching for Devices with Bootable Media.
Device Selection   Device Path      Device Type
------------------------------------------------------------------
P0                  5/2:0.2.0        Disk    : SEAGATE ST34371W    0484
P1                  5/2:0.3.0        CD-ROM  : TOSHIBA CD
P2                  1/2:0.9.0        Disk    : SEAGATE ST19171W    0019
P3                  1/0:0.4.0        Disk    : SEAGATE ST19171W    0019
Command:
```

For this example, boot the CD with:

```
boot p1
```

The install kernel then loads from the CD device.

NOTE The latest system firmware is required to support HP-UX Boot for the newer IO HBA Cards.

The latest system firmware also corrects search problems with new bootable devices.

B Known Problems and Troubleshooting

This section contains critical information for you to review before you start installing or updating to HP-UX 11i v1. Before installing or updating to HP-UX 11i, be sure to read this entire appendix as well as *Read Before Installing or Updating to HP-UX 11i v1* CD booklet for additional late-breaking information. For information and patches on other known problems, go to the HP IT Resource Center web site:

http://itrc.hp.com

What You Will Find in This Appendix:

- "Known Install Problems" on page 134
- "Known Update Problems" on page 140
- "Common Install and Update Error and Warning Messages" on page 151
- "Problems Reading HP-UX 11i v1 DVD Media" on page 157
- "Problems Configuring HP-UX 11i v1" on page 160
- "Problems with Large Systems" on page 168
- "Un-installing HP-UX 11i v1" on page 169
- "Re-installing Software Distributor" on page 170
- "Recovering a Corrupt System" on page 171
- "Verifying and Adding Diagnostic Drivers" on page 172
- "Problems Affecting Non-C Locales" on page 173

Known Install Problems

Table B-1 describes install problems known to occur in the HP-UX 11i v1 release.

Table B-1 Known Install Problems

Problem	Description/Action

VxVM Disk Group Error During Install	No validation is done on the disk group name to see if it conflicts with a disk group name currently imported on the system being installed. If the name conflicts with an imported disk group the creation of the extra disk group will fail. This is a feature of VxVM to prevent the creation of duplicate disk groups. If you do encounter this problem you will be presented with something like the following messages:
	`vxvm:vxdg: ERROR: Disk group dg02:`
	`cannot create: Disk group exists and is imported`
	`ERROR: Command "/sbin/vxdg init dg02 dg0201=c17t12d0 dg0202=c17t13d0" failed.`
	
	`The configuration process has incurred an error, would you like to push a shell for debugging purposes? (y/[n])`
	To continue and ignore the error enter **y** and at the shell prompt enter **exit 2** and press **return**. If you do not wish to continue the installation answer **n**.
	To resolve this issue, export VxVM disk groups before starting an install session if you plan on recreating them via the Installation User Interface. For more information, see the Ignite-UX FAQ:
	http://docs.hp.com/en/IUX/faq.html

Table B-1 Known Install Problems (Continued)

Problem	Description/Action

"Kernel size is very large" Warning During Cold-Install	During a cold-install, the following warning message may appear in your `swagent.log`:
	`WARNING: Kernel size is very large. The kernel may not boot or may show decreased performance in small memory systems.`
	`Actual kernel size: 33118076 bytes`
	`* Build_Kernel: Complete`
	`* Boot_From_Client_Disk: Begin`
	`* Rebooting machine as expected.`
	Please disregard the above warning, the check for the kernel size limit incorrectly uses the 32 MB value instead of the 64 MB value supported on HP-UX 11i v1. `PHKL_27447` will correctly set the kernel size limit that gets checked during the creation of new HP-UX 11i v1 kernels.

Known issues with OE Media Install Tools and Network Depots	The Ignite-UX install tool on the OE media supports the use of network depots. However, network depots must match the media depots for the choices in the install tool to work properly. The Ignite-UX documentation also explains the setup and use of network depots without using the OE media for each installation. See the following web site for information on the Ignite-UX product: **`http://docs.hp.com/en/IUX`**

Table B-1 Known Install Problems (Continued)

Problem	Description/Action
vPars version A.02.03 Required for rp7405, rp7410 and rp8400 Servers with PDC Firmware Version 17.005	If you received an rp7405, rp7410 or rp8400 server with PDC firmware version 17.005 (overall firmware version 6.0), and you intend to use Virtual Partitions (vPars), you must obtain vPars version A.02.03. This latest version of vPars addresses compatibility issues with PDC firmware version 17.005. rp7405, rp7410 and rp8400 servers shipped from the factory on or after September 5, 2003 have PDC version 17.005 installed. PDC firmware version 17.005 is required to support the latest PCI and PCI-X I/O cards. If you have any questions, please contact your Customer Support Engineer for additional details and information.
Visual Conference Product Does Not Install or Update with CD Media	On the latest release of HP-UX11i v1, a `checkinstall` script error causes the Visual Conference product to be excluded from the TCOE Operating Environment. If you are installing or updating to the latest TCOE Operating Environment from CD media (not DVD) you will be affected. You must reinstall the Visual Conference product after you've completed your cold install or update using `swinstall`.

Table B-1 Known Install Problems (Continued)

Problem	Description/Action

xntpd Fails to Start on Reboot After Installing GOLDQPK11i Patch Bundle	After installing the GOLDQPK11i patch bundle, xntpd may fail to start after the initial reboot of the system.
	
	In your syslog.log file, you may encounter a similar message:
	
	`Sep 23 14:46:23 <system_name> xntpd[1812]: tickadj = 625, tick = 10000, tvu_maxslew = 61875`
	`Sep 23 14:46:23 <system_name> xntpd[1812]: precision = 6 usec`
	`Sep 23 14:46:23 <system_name> xntpd[1812]: bind() fd 4, family 2, port 123, addr 00000000, in_classd=0 flags=1 fails: Address already in use`
	
	You might find a similar message in your rc.log file:
	
	`Start time synchronization`
	`Output from '/sbin/rc2.d/S660xntpd start':`
	`23 Sep 14:46:23 ntpdate[1810]:`
	`the NTP socket is in use,exiting xntpd`
	
	To resolve this problem:
	
	• Stop xntpd:
	/sbin/init.d/xntpd stop
	• Verify xntpd is down:
	ps -ef | grep xntpd
	• Start xntpd
	/sbin/init.d/xntpd start

Table B-1 Known Install Problems (Continued)

Problem	Description/Action
IETHER-00 Networking Driver Requires Critical Fixes from PHNE_29947	HP has released PHNE_29947 to address critical defects with the IETHER driver in the IEther-00 bundle (11.11.05) that is delivered with the HP-UX 11i v1 OE update for June 2004. The IETHER driver supports the built-in LAN on the C8000 workstation, along with the add-in GigEthernet cards (A7011A and A7012A). The IETHER-00 product from December 2004 (and later releases) will include the critical fixes for c8000 workstation that were delivered in the PHNE_29947 patch. You can obtain PHNE_29947 from the IT Resource Center (ITRC) from the following URL: **http://itrc.hp.com**

Table B-1 Known Install Problems (Continued)

Problem	Description/Action

System Console "kthread table full" or "fork failed" Messages	This section was modified in the March 2003 release to reflect how the `maxusers` tunable value varies depending on the type of system you have.
	
	After a successful cold install, the system starts displaying console messages such as
	
	`kthread table full`
	
	or
	
	`fork failed console`
	
	These messages are also logged in `/var/adm/syslog.log`. This is caused by the `maxusers` kernel tunable not set at high enough value.
	
	An example of what you might see is the following message logged onto the system console:
	
	`kthread: table is full`
	
	You would also see the following message being logged in `/var/adm/syslog.log`:
	
	`Jan 30 09:21:39 sd2600 vmunix: kthread: table is full`
	
	To correct this, increase the `maxusers` tunable:
	
	• Log on as root and edit `/stand/system` and add the following value (depending on your system):
	
	— Large 64-way systems (Superdome): **`maxusers 400`**
	
	— 16-way systems: **`maxusers 200`**
	
	Consult your HP Customer Engineer for setting the appropriate values on your system
	
	• Run the following commands:
	
	`mk_kernel -v -o /stand/vmunix`
	
	`kmupdate`
	
	`reboot -r`

Known Update Problems

Table B-2 describes update problems known to occur in the HP-UX 11i v1 release.

Table B-2 Known Update Problems

Problem	Description/Action

Ignore error message: Pay Per Use Failed	During upgrade of your HP-UX 11i v1 (B.11.11) system, the following error message is in the `rc.log`:
	`/sbin/rc[41]: /sbin/rc2.d/S700ppu: not found. "/sbin/rc2.d/S700ppu start" FAILED`
	Or you may see this message in the console log:
	`Initialize Pay Per Use..... Failed`
	These messages are extraneous, do not cause any ill effects, and you can ignore them.

DMI/SCR Become Unbundled After Update	After updating to the September 2003 release (or later) of HP-UX 11i v1, you may encounter a warning after running the `swlist` command indicating that DMI/SCR (`B6816AA`) was unbundled during the update:
	`# # Product(s) not contained in a Bundle: #`
	`DMI B.11.11.30 Desktop Management Interface for HP-UX`
	`SCR B.11.11.30 System Configuration Repository`
	You will encounter this warning if DMI/SCR (`B6816AA`) was installed prior to updating.
	DMI/SCR will continue to work after the update. If you plan to continue using DMI/SCR, HP recommends that you download the latest version of DMI from **`http://www.hp.com/go/softwaredepot`**
	Starting with the September 2003 release, DMI will no longer be shipped as part of the Operating Environments. Instead, it will be available and supported as a web-only product.

Table B-2 Known Update Problems (Continued)

Problem	Description/Action

Unsupported Upgrade of ServiceControl Manager Causes SCR Error During Update	While updating an HP-UX 10.20 system to either the Foundation, Enterprise or Mission Critical Operating Environment, you may encounter the following error messages in `swagent.log` appearing to affect SCR:
	`ERROR: [300076] Cannot delete the definition for product "SCR" from the target "/".`
	`The product is not empty, it still contains filesets.`
	These error messages are caused by an unsupported upgrade of ServiceControl Manager 3.0 from a version of SCM earlier than version 2.5. SCM 3.0 only supports upgrades from version 2.5 or higher.
	Because this is an unsupported upgrade path, no changes will be made to either SCR or ServiceControl Manager.
	If you are updating an HP-UX 10.20 system to either the Foundation, Enterprise, or Mission Critical Operating Environment, *and* you have a version of ServiceControl Manager earlier than version 2.5, you will encounter these errors.
	To resolve this problem:
	• Use the *swremove* (1M) command to remove the existing ServiceControl Manager bundle from the system
	• With your HP-UX 11i v1 media, use the *swinstall* (1M) command to install the latest version of ServiceControl Manager (`B8339BA`) on your system.

Table B-2 Known Update Problems (Continued)

Problem	Description/Action

Boot Error Messages Appear After Updating from HP-UX 11.0 (with MirrorDisk/UX Installed) to HP-UX 11i v1 TCOE	If you are updating to HP-UX 11i v1 TCOE from HP-UX 11.0 with MirrorDisk/UX installed, the following error message may appear during the boot process:
	`/sbin/bcheckrc:`
	`Checking for LVM volume groups and Activating (if any exist)`
	`Volume group "/dev/vg00" has been successfully changed.`
	`vgsync: Error, "vgsync" is not a valid LVM command.`
	`vxfs fsck: sanity check: root file system OK (mounted read/write)`
	`Checking hfs file systems`
	`/sbin/fsclean: /dev/vg00/lvol1 (mounted) ok`
	`HFS file systems are OK, not running fsck`
	`Checking vxfs file systems`
	`/dev/vg00/lvol8 :`
	`vxfs fsck: sanity check: /dev/vg00/lvol8 OK`
	`/dev/vg00/lvol3 :`
	`vxfs fsck: sanity check: root file system OK (mounted read/write)`
	`/dev/vg00/lvol4 :`
	`vxfs fsck: sanity check: /dev/vg00/lvol4 OK`
	`/dev/vg00/lvol5 :`
	`vxfs fsck: sanity check: /dev/vg00/lvol5 OK`
	`/dev/vg00/lvol6 :`
	`vxfs fsck: sanity check: /dev/vg00/lvol6 OK`
	`/dev/vg00/lvol7 :`
	`vxfs fsck: sanity check: /dev/vg00/lvol7 OK`
	`Cleaning /etc/ptmp...`
	This error message may appear during reboot after the updating from HP-UX 11.0 with MirrorDisk/UX installed to HP-UX 11i v1 TCOE.
	MirrorDisk/UX for HP-UX 11i is not included with TCOE. As a result, when the HP-UX 11.0 version of MirrorDisk/UX is removed from the system, the commands associated with HP MirrorDisk/UX are not properly deleted. This causes the LVM startup script to believe that HP MirrorDisk/UX is installed on the system.
	To resolve this problem you must purchase and install MirrorDisk/UX for HP-UX 11i v1.

Table B-2 Known Update Problems (Continued)

Problem	Description/Action

ApacheStrong Becomes Unbundled After Update	After updating to the June 2003 release of HP-UX 11i v1, you may encounter a warning after running the `swlist` command, indicating that ApacheStrong was unbundled during the update:
	`#`
	`# Product(s) not contained in a Bundle:`
	`# ApacheStrong 1.3.26.06.09 HP Apache-based Web Server with Strong (128bit) Encryption`
	If you previously installed ApacheStrong 1.3.x prior to updating to this release, you may encounter this warning.
	You can safely disregard this warning. The HP-UX Web Server Suite and ApacheStrong 1.3.x will function properly.

parmgr.1m Errors on MCOE Update from HP-UX 11.0 to HP-UX 11i v1	After updating from HP-UX 11.0 to HP-UX 11i v1 MCOE, the following `mtime`, `stime`, and permission errors may appear in your `swverify.log` file:
	`* [140112] Checking files for fileset "OS-Core.CORE-JPN-S-MAN,l=/,r=B.11.11".`
	`ERROR: [40258] File "/usr/share/man/ja_JP.SJIS/man1m.Z/parmgr.1m" should have mode "444" but the actual mode is "555".`
	`ERROR: [40263] File "/usr/share/man/ja_JP.SJIS/man1m.Z/parmgr.1m" should have mtime "974188800" but the actual mtime is "1032497544".`
	`ERROR: [40265] File "/usr/share/man/ja_JP.SJIS/man1m.Z/parmgr.1m" should have size "3244" bytes but the actual size is "3472" bytes.`
	`ERROR: [140113] Fileset "OS-Core.CORE-JPN-S-MAN,l=/,r=B.11.11" had file errors.`
	You can disregard these errors. The *parmgr* (1M) manpage will work correctly.

Table B-2 Known Update Problems (Continued)

Problem	Description/Action

HP Apache May Hang On Reboot after System Update from Golden System Image (GSI) Depot	When upgrading from a GSI-installed system containing an OE with HP Apache 2.0, some systems may hang while attempting to shutdown the Apache Web Server. The problem is caused by an obsolete PID from the httpd daemon being copied from the GSI Golden Image Depot to the client system.
	You may be affected if you are upgrading from a GSI HP-UX 11.0 Depot containing HP Apache 2.0 to HP-UX 11i v1.
	GSI Depot (Server):
	1. Shut down your HP Apache Web Server before creating the GSI Depot by typing
	`/opt/hpapache2/bin/apachectl stop`
	2. Verify that the following file has been deleted:
	`/opt/hpapache2/logs/httpd.pid`
	Client System:
	Delete the following file (if present) after installing the GSI Depot and before an update install:
	`/opt/hpapache2/logs/httpd.pid`

MLIB 8.3 Produces Warning During Update	When updating from MLIB 8.1 (or earlier) to MLIB 8.3 the following warning may appear in the `/var/adm/sw/swagent.log`: `WARNING: Incomplete definition for the product "MLIBPROD", beginning at line 44452. The following attributes are not defined:filesets the filesets contained in the product` You can disregard this warning message; there is no problem with the installation.

Table B-2 Known Update Problems (Continued)

Problem	Description/Action

X11MotifDevKit Produces Incompatible Error After Upgrade from HP-UX 10.20	After updating from HP-UX 10.20 to HP-UX 11i v1, the following errors may appear in your `swverify.log`:
	`ERROR: [140167]`
	`The product "X11MotifDevKit,l=/,r=B.10.20.02" is not compatible with this system's architecture or operating system.`
	`* [140061] Configured X11MotifDevKit.X11R6-PRG,l=/,r=B.10.20.02`
	`[140155] The corequisite "X11.X11R6-SHLIBS,r=B.10.*" for fileset "X11MotifDevKit.X11R6-PRG,l=/,r=B.10.20.02" cannot be successfully resolved.`
	`ERROR: [140151] The dependencies for fileset "X11MotifDevKit.X11R6-PRG,l=/,r=B.10.20.02" cannot be resolved (see previous lines).`
	`* [140112] Checking files for fileset "X11MotifDevKit.X11R6-PRG,l=/,r=B.10.20.02".`
	`WARNING: [40257] Directory "/" should have mode "555" but the actual mode is "755".`
	
	`WARNING: [40261] Directory "/" should have group,gid "other,1" but the actual group,gid is "root,0".`
	
	`WARNING: [40259] Directory "/usr/newconfig" should have owner,uid "root,0" but the actual owner,uid is "bin,2".`
	`WARNING: [40261] Directory "/usr/newconfig" should have group,gid "other,1" but the actual group,gid is "bin,2".`
	
	`WARNING: [140114] Fileset "X11MotifDevKit.X11R6-PRG,l=/,r=B.10.20.02" had file warnings.`
	`ERROR: [140043]`
	`Verify failed X11MotifDevKit.X11R6-PRG,l=/,r=B.10.20.02`
	
	The problem is differences in the `X11MotifDevKit` between HP-UX 10.20 and HP-UX 11i. You may experience this problem if you are updating from HP-UX 10.20 to HP-UX 11i v1, and have not updated your system with the latest HP-UX 10.20 patch bundles.
	
	After you have updated your system to HP-UX 11i v1, re-install the `HP-UX 11i v1 Developer's Kit` located in the `HP-UX 11i v1 Application Software` media kit (CD/DVD).
	
	For servers, install `B3394BA` and for workstations, install `B3392BA`.

Table B-2 Known Update Problems (Continued)

Problem	Description/Action

OpenView SNMP Agent Produces Error with Upgrade to HP-UX 11i v1	Due to a preinstall script error, customers upgrading to HP-UX 11i v1 may see the following error:
	`* [140184] Installing fileset "OVSNMPAgent.MASTER,r=B.11.11" (54 of 1293).`
	`* [20255] Running "postinstall" script for fileset "OVSNMPAgent.MASTER".`
	`* [20255] Running "preinstall" script for fileset "OVSNMPAgent.SUBAGT-HPUNIX".`
	
	`kill: 616: The specified process does not exist.`
	`NOTE: You may need to restart SNMP agents.`
	
	The error is caused by the `kill` command trying to end a process that is already terminated. When the `OVSNMPAgent.MASTER` fileset is installed, it invokes a `kill` command to terminate any existing SNMP agents. The next fileset, `OVSNMPAgent.SUBAGT-HPUNIX`, also attempts to terminate any SNMP Agent processes.
	
	If you are migrating from HP-UX 10.20 or HP-UX 11.0 to HP-UX 11i v1, you may receive this error message during the installation of the OpenView SNMP bundle.
	
	You can safely ignore this message.

Table B-2 Known Update Problems (Continued)

Problem	Description/Action

"Initialize of the ITO Control Agent failed" Error During update-ux Session	Beginning in June 2002, the ITO-SE single system event management component was removed from the `GlancePlus Pak 2000` product.
	
	If you are updating from HP-UX 10.20 or HP-UX 11.0 and you have a version of `GlancePlus Pak` 2000 released prior to June 2002, `update-ux` will try to remove the ITO-SE component prior to updating to a newer GlancePlus Pak. You may encounter the following error when `update-ux` removes the file sets belonging to the ITO-SE component:
	
	`* Beginning the Unconfigure Execution Phase.`
	`* Filesets: 3`
	`* Files: 163`
	`* Kbytes: 15427`
	`* Running remove setup command /usr/lbin/sw/remove_setup.`
	`Error opcctla (Control Agent)(14791) : Initialize of the ITO Control Agent failed. (OpC30-1036)`
	
	`Can't lookup servers: Communications failure (dce / rpc). (OpC20-108)`
	`Can't lookup servers: Communications failure (dce / rpc). (OpC20-108)`
	`Stopping all ITO Agent processes... (OpC30-1192)`
	`/usr/bin/ps: couldn't get console device alias`
	`/usr/bin/ps: not enough memory for hash table`
	
	No action required. The ITOAgent unconfigure script generates the error prior to the file sets being removed.

Table B-2 Known Update Problems (Continued)

Problem	Description/Action
Firmware Patches Should Not Be Included in Cold-Install or Update Session	If you are migrating from either HP-UX 10.20 or HP-UX 11.0, HP strongly recommends you do not include firmware patches while running a cold-install or update session. The following systems are affected: • A-Class • L-Class • N-Class Many of the HP-UX 11i v1 firmware patches rely on HP-UX 11i v1 tools and system calls. During the cold-install or update process, your system is still running either the HP-UX 10.20 or HP-UX 11.0 kernel. The firmware installation fails because of system call differences between the HP-UX 11i v1 kernel and older kernel versions. HP strongly recommends that you install any firmware patches *after* you have completed the cold-install or update process and your system is running HP-UX 11i v1. Specific HP-UX 11i v1 firmware patches are available at the following website: **`http://itrc.hp.com`**
Analyzing Log Files	To help identify a problem with running `update-ux`, remember that errors are logged in two separate log files: • `update-ux` errors: `/var/adm/sw/update-ux.log` and `/var/adm/sw/swagent.log` • `swinstall` errors: `/var/adm/sw/swinstall.log` and `/var/adm/sw/swagent.log` SD commands log errors to `/var/adm/sw/swagent.log`, plus their own log. Simply checking more than one log file may reveal the problem you are troubleshooting.

Table B-2 Known Update Problems (Continued)

Problem	Description/Action

Update Fails if nstrpty Kernel Parameter Set as a Formula	If the value of the `nstrpty` kernel parameter is specified as a formula (for example, `nstrpty (NPTY*2)`), then updating to HP-UX 11i will fail with this error:
	`/var/tmp/BAAa10554/catalog/Streams-TIO/STRTIO-KRN/postinstall[82]: (NPTY):`
	`The specified number is not valid for this command.`
	`ERROR: The "postinstall" script for "Streams-TIO.STRTIO-KRN" failed (exit code "1").`
	`The script location was "/var/tmp/BAAa10554/catalog/Streams-TIO/STRTIO-KRN/postinstall".`
	To prevent this, convert the value of `nstrpty` to a number.
	To check the kernel parameters, run SAM and select: **Kernel Configuration -> Configurable Parameters**
	If the `nstrpty` kernel parameter is specified as a formula, then *before you update*, use SAM (**Kernel Configuration -> Configurable Parameters**) to change the formula to a numeric value. You do not need to rebuild the kernel or reboot the system.

Table B-2 Known Update Problems (Continued)

Problem	Description/Action

Kernel Build Failure	When updating a workstation running on a HP-UX 10.20 32-bit OS to HP-UX 11i 32-bit OS/OE, the update may fail if a USB driver is configured on the system. This will not occur when updating to HP-UX 11i 64-bit OS.
	
	If this occurs, `update-ux` displays this message on the console before quitting:
	
	`Loading the kernel...`
	`/usr/ccs/bin/ld: Unsatisfied symbols:`
	`wsio_get_service (code)`
	`Stop...`
	`ERROR: The kernel build failed...`
	
	Remove the USB drivers and repeat the update:
	
	• As root, edit `/stand/system`:
	
	`vi` **`/stand/system`**
	
	• Find and delete *all* USB drivers: `usbd, hsd, hub, hid`
	
	• Save the system file and quit the editor.
	
	• Continue the update by entering:
	
	`update-ux -kernel_build`

HP A3740A Fibre Channel PCI Tachyon Not Supported	The HP A3740A Fibre Channel PCI Tachyon adapter is not supported on HP-UX 11i v1. Before you install HP-UX 11i v1, please replace any A3740A PCI adapters in your system with A5158A PCI 1 GB Tachyon TL adapters or A6795A PCI 2 Gb Tachlite adapters. Then connect any Fibre Channel Mass Storage devices previously connected to A3740A adapters to either of the adapters.

Common Install and Update Error and Warning Messages

As an install or update progresses, you will see messages relating to the progress being entered into the log file. These messages usually refer to normal behavior. ERROR and WARNING messages, however, have the following significance:

`ERROR` Indicates a serious problem, usually requiring action from the user in order to proceed with an installation.

`WARNING` Indicates something out of the ordinary and *may* require action.

If you see a message or experience unusual behavior, see the following pages for likely solutions.

This section includes some `update-ux` error messages and typical recovery actions.

Table B-3 describes common install and update error and warning messages known to occur in the HP-UX 11i v1 release.

Table B-3 Common Install and Update Error and Warning Messages

Problem	Description/Action

Selected Locale Not Available	`Warning! One or more of your selected locales are not available.`
	`Please invoke the commands "locale" and "locale -a"`
	`to verify your selections and the available locales.`
	`Continuing processing using the "C" locale.`
	Ignore this message which appears when updating from HP-UX 10.20 in every locale except C. The local environment, such as Japanese, is temporarily disabled during the update session.

Table B-3 Common Install and Update Error and Warning Messages

Problem	Description/Action
Multiple OE Errors	Installing both the HP-UX 11i Operating Environment and the Enterprise Operating Environment on the same system is not a standard update path. If you continue with this operation, use the `swremove`(1M) to remove the Enterprise Operating Environment after the update is complete. Complete the update. Then remove the `HPUX11i-OE-Ent` bundle using the `swremove` command. `Changing from the Enterprise Operating Environment to the Mission Critical Operating Environment at the same time as you change from a 32 bit OS to a 64 bit OS is not a tested operation...` Although you can change OS word-width and move from one OE to another at the same time, we recommend performing separate operations. In this case: • Update OS to new word-width: **`/usr/sbin/update-ux -s /cdrom -a 64`** • Install the desired OE: **`/usr/sbin/update-ux -s /cdrom HPUX11i-OE-MC`** For more about changing OEs, see “Adding or Upgrading an OE” on page 104.

Table B-3 Common Install and Update Error and Warning Messages

Problem	Description/Action

Servicecontrol Manager Filesets May Indicate Incorrect Permissions	Some Servicecontrol Manager directories may indicate that they have incorrect permissions during an update to the June 2004 version of HP-UX 11i v1. You can safely ignore these warnings. Servicecontrol Manager will work correctly. These warnings have been fixed for subsequent Servicecontrol Manager releases.You may encounter the following warning messages in your `swagent.log`:
	`* [140112] Checking files for fileset "SysMgmtAgent.MX-AGENT,l=/,r=B.03.00.07".`
	`WARNING: [40259] Directory "/opt/mx/bin" should have owner,uid "root,0" but the actual owner,uid is "bin,2".`
	`WARNING: [40259] Directory "/opt/mx/lib" should have owner,uid "root,0" but the actual owner,uid is "bin,2".`
	`WARNING: [40259] Directory "/opt/mx/newconfig" should have owner,uid "root,0" but the actual owner,uid is "bin,2".`
	`WARNING: [40259] Directory "/opt/mx/newconfig/etc" should have owner,uid "root,0" but the actual owner,uid is "bin,2".`
	`WARNING: [40259] Directory "/opt/mx/newconfig/etc/opt" should have owner,uid "root,0" but the actual owner,uid is "bin,2".`
	`WARNING: [40259] Directory "/opt/mx/newconfig/etc/opt/mx" should have owner,uid "root,0" but the actual owner,uid is "bin,2".`
	`WARNING: [40259] Directory "/opt/mx/newconfig/etc/opt/mx/config" should have owner,uid "root,0" but the actual owner,uid is "bin,2".`
	`WARNING: [40259] Directory "/var/opt/mx/config" should have owner,uid "root,0" but the actual owner,uid is "bin,2".`
	`WARNING: [40259] Directory "/var/opt/mx/data" should have owner,uid "root,0" but the actual owner,uid is "bin,2".`
	`WARNING: [40259] Directory "/var/opt/mx/logs" should have owner,uid "root,0" but owner,uid is "bin,2".`

Table B-3 Common Install and Update Error and Warning Messages

Problem	Description/Action
Warning Displays	`WARNING: There were errors installing from the first depot. See the /var/adm/sw/swagent.log for details. WARNING: Continuing could cause the OS update to fail Do you want to continue ? (y/n)` Press **y** to continue the update. Afterward, review `/var/adm/sw/swagent.log`.
Disk Space Usage Error	`To perform this OS update, it is required that the xxx partition have at least yyy KB of free space and it currently has zzz KB of free space` Reconfigure your disk per the minimum recommendations in the message. Then run the `update-ux` command again.
swinstall Analysis Error	`The analysis phase failed while installing from the first depot. See the /var/adm/sw/swagent.log for details.` The `swinstall` analysis on software from HP-UX 11i v1 CD1 failed and `update-ux` quit. Correct the indicated problem and run the command again.
Post-update swverify Error	After updating your system to an HP-UX 11i v1 OE, run `swverify` to ensure that all application software previously on your system is still compatible with the new OS. If you get an error like this: `The product "xyz,l=/,r=B.xx.xx" is not compatible with this system's architecture or operating system.` The indicated software (*xyz*) has not been updated to HP-UX 11i. To update the software, mount the HP-UX 11i v1 Applications CD that contains the software and install the new version using the `swinstall` command. For more details, see Chapter 7.

Table B-3 Common Install and Update Error and Warning Messages

Problem	Description/Action

Root (/) Volume Lock Error	If `update-ux` quits after you extended a volume size, you may see an error containing these lines:
	`ERROR: The command: /var/adm/sw filter /var/adm/sw/update-ux/swinstall...`
	This error will be logged in `/var/adm/sw/swinstall.log`:
	`Error: Cannot lock "/" because another command hold a conflicting lock ...`
	This error indicates that other processes have locked the root volume, preventing `update-ux` from completing a successful update.
	Wait 10 minutes and retry the `update-ux` command again.

EISA 100BT Warning Message	When you remove an EISA 100BT product from a system or update a system having EISA 100BT to any later releases of HP-UX, you may find the following message in the `/var/adm/sw/swagent.log` file: `Running remove setup command /usr/lbin/sw/remove_setup. /dev/diag/ether* not found.` This behavior is present in HP-UX 10.20 to HP-UX 11i (B.11.11) versions of this product. Presence or absence of this file on a system will not have any impact on this product. You may safely ignore this message.

Table B-3 Common Install and Update Error and Warning Messages

Problem	Description/Action

Using Ignite-UX with HP-UX 11i v1 OEs and Patch Bundles	In order for Ignite-UX to properly load patch bundles, the configuration file for the install depot needs to be modified. The `sd_software_list` definition needs to be removed from the bundle definitions for all patch bundles in the depot. It is important that all the patch bundles in the configuration file are modified to allow for **patch supersession** to work properly.
	
	The following patch bundles are supported for installation with the desired HP-UX 11i v1 OE from a single depot source:
	
	`BUNDLE11i`
	`HWEnable11i`
	`FEATURE11-11`
	`GOLDAPPS11i`
	`GOLDBASE11i`
	
	If you have added any custom patch bundles to your install depot, the `sd_software_list` definition for those bundles should be removed also. With the `sd_software_list` definition removed, SD will use `autoselect_patches` to resolve which patches should be installed.

Problems Reading HP-UX 11i v1 DVD Media

The HP-UX 11i v1 DVD media contains large volumes of data that may cause your DVD device to fail while reading the DVD media contents during an update. This particularly affects you if you use Update-UX or other Software Distributor (SD) tools. For example, you may encounter similar error messages if you attempt to read DVD media with a large volume of data from Update-UX:

```
ERROR: File "/dvd/catalog/SOE/SOE.2/INFO": No such file or
directory(2). Cannot copy it to file
"/var/tmp/BAAa04482/catalog/SOE/SOE.2/INFO".

ERROR: File "/var/tmp/BAAa04482/catalog/SOE/SOE.2/INFO" does not
exist.

ERROR: The catalog files for product "SOE,r=B.11.11" failed to
load. Check the above output for details.

ERROR: Cannot continue the Analysis Phase until the previous
errors are corrected.
```

To resolve this problem, do one of the following:

- For HP-UX 11.00 or 11.11, install the appropriate patches listed in this section *before* you update to the latest version of HP-UX 11i v1 (recommended).
- For HP-UX 10.20, use the *pfs_mount* (1M) command to mount the DVD.

To patch your system, use the following patches (patch descriptions are in parentheses) for your current OS version:

NOTE The listed HP-UX 11i v1 patches are included in the December 2003 (and later) version of the HP-UX 11i v1 install kernel. If you are planning to cold-install HP-UX 11i v1 (December 2003 or later), you do *not* need to install these patches.

Patches for Systems Currently Running HP-UX 11i v1

- PHKL_26269 (11.11 Rock Ridge extension for ISO-9660)
- PHKL_28025 (11.11 Rock Ridge extension for ISO-9660)
- PHCO_25841 (11.11 Add Rock Ridge extension to *mount_cdfs* (1M))

Patches for Systems Currently Running HP-UX 11.0

- PHKL_26450 (11.00 Rock Ridge extension for ISO-9660)
- PHKL_28060 (11.00 Y2k; Rock Ridge extension for ISO-9660)
- PHCO_26449 (11.00 Add Rock Ridge extension to *mount_cdfs* (1M))

Patches for Systems Currently Running HP-UX 10.20

No patches are available.

Please note that Update-UX fails when updating from HP-UX 10.20 to HP-UX 11i v1 (B.11.11.0412) using CD media.

If you are using CDs to update an HP-UX 10.20 system to the current HP-UX 11i v1 (B.11.11) Operating Environments, the update-ux command will fail because HP-UX 10.20 does not support Rockridge extension. The following is the output from the update-ux.log:

```
NOTE:    The fileset "SW-GETTOOLS.SD-SUPPORT,r=B.11.11.0406" is
already installed.  If you wish to reinstall this fileset,
change the "reinstall" option to "true".
* Reading source for file information.
ERROR:   File "/cdrom/catalog/SOE/SOE.2/INFO":
No such file or directory (2).
Cannot copy it to file
"/var/tmp/BAAa03877/catalog/SOE/SOE.2/INFO".
ERROR:   File "/var/tmp/BAAa03877/catalog/SOE/SOE.2/INFO"
does not exist.
ERROR:   The catalog files for product "SOE,r=B.11.11" failed
to load.Check the above output for details.
ERROR:   Cannot continue the Analysis Phase until
the previous errors are corrected.
```

To resolve this issue, first update to the desired HP-UX 11i v1 December 2003 Operating Environments and then update to the current HP-UX 11i v1 Operating Environments.

Determining Whether You Need to Install the Patches

To determine whether your system already has the listed patches installed, run the following:

/usr/sbin/swlist -l patch | grep *patch_name*

where *patch_name* is one of the listed patches for your operating system version. If nothing is printed to standard output, you need to install the patches from one of the following sources:

- The `GOLDBase11i` bundle on the Support Plus CD (June 2003 or later) for HP-UX 11i v1
- The `QPK1100` bundle on the Support Plus CD (September 2003 or later) for HP-UX 11.0
- The IT Resource Center website (requires login):

  http://itrc.hp.com

- The anonymous IT Resource Center FTP site:

  ftp://ftp.itrc.hp.com

Problems Configuring HP-UX 11i v1

Read these items before installing or updating to HP-UX 11i v1.

Table B-4 Problems Configuring HP-UX 11i v1

Problem	Description/Action

Kernel Build Warnings for krm Module During Cold-Install or Update	During a cold-install or update, you may encounter a warning message in either `/var/opt/ignite/local/install.log` or `/var/adm/sw/update-ux.log` indicating that debug information may be corrupted. The warning may appear as follows:
	`Generating module: krm...`
	`/usr/lbin/sw/bin/mkdir -p /stand/build`
	`Compiling /stand/build/conf.c...`
	`Loading the kernel...`
	`(Warning) Optimizing ADDILs in the presence of the debug`
	`information. Debug information may be corrupted (1594)`
	`Generating kernel symbol table...`
	You may safely disregard this warning.

cdrecord Application Requires Patch	The cdrecord application delivered with the `XCDROAST-RUN` fileset in the TC-OpenSource product requires kernel patch `PHKL_24283` or one of its successors (including `PHKL_26410` and `PHKL_27225`).

Table B-4 Problems Configuring HP-UX 11i v1 (Continued)

Problem	Description/Action
Enabling AutoFS on High Availability Servers Can Cause NFS Packages to Be Dropped	You are affected if you enable AutoFS on an HA server. Restarting NFS clients (with `nfs.client stop/start`) or NFS servers (with `nfs.server stop/start`) while NFS packages are running on the High Available (HA) server will cause the exported file systems that tie to NFS packages to be dropped. This is because the SG-NFS exported file systems are handled interactively and they are not in the `/etc/exports` file. When stopping NFS clients or NFS servers, it will unexport all the file systems on the system through the `/usr/sbin/exportfs -au` command. The file systems will be re-exported if they have the entries in `/etc/exports` file at the starting phase again, but not the file systems exported interactively by the NFS packages. Enabling AutoFS on the HA NFS server needs to be done with caution. However, this kind of configuration is fully supported if one of these two actions is taken before stopping the AutoFS daemon: 1. Manually move all NFS packages to the adoptive server node. 2. Halt all NFS packages. The Auto FS daemon can be stopped either with the `kill -9` command, the `nfs.client` script, or the `nfs.server` script. Once the AutoFS daemon is restarted, the NFS packages can be restarted or manually moved back to the server node. AutoFS can be restarted either with the `/usr/sbin/automountd` command or the `nfs.client` script.

Table B-4 Problems Configuring HP-UX 11i v1 (Continued)

Problem	Description/Action
Hardware Information Not Captured on Systems with Floppy Drive	On systems with a floppy-disk drive attached, hardware information will not be captured in the System Configuration Repository (SCR) under HP-UX 11i. After updating a system with a floppy drive from 10.20 to 11i, you will find a core file in `/usr/dmi/bin`, and hpuxci (HP-UX DMI Component Instrumentation) will not be running. This problem affects you if there is a floppy drive attached to (or installed in) your system, and you use the System Configuration Repository (SCR) to store hardware information. Since the hpuxci is not running, hardware information will not be captured. The problem occurs if `/dev/floppy` exists. A fix for the problem will be made available in the earliest follow-up patch release for 11i. In the meantime, if you depend on the SCR, you should either not update to 11i, or remove the floppy drive. **NOTE:** If `/dev/floppy` exists, `hpuxci` sets default attributes for the device. The code that does this does not null-terminate the string passed to `atoi()` which results in a segfault (segmentation fault). The fix for this will terminate the string correctly.
Auto-Port Aggregation Will Not Work on rp7410 Systems	The `igelan` driver for core rp2710 cards does not support Auto-Port Aggregation (APA). To fix this problem install patch PHNE_25833 (or any patch that supersedes it).
EISA Cards Not Supported on 64-bit OS	EISA I/O drivers for TermIO, FDDI, 100BT and Token Ring cards are supported on HP-UX 32-bit OS, but not 64-bit OS. You will not see an error or warning message stating that these EISA products will not work after installing or updating to 64-bit OS.

Table B-4 Problems Configuring HP-UX 11i v1 (Continued)

Problem	Description/Action
100BT HSC-FX Cards Do Not Work on HP-UX 11i v1	The100BT HSC-FX cards, J3514A#002 and J3516A#002, do not work under 11i. The card is claimed, but the link does not come up. This card is supported on K-Class, D-Class and A-180 systems. If you are not sure whether or not the card is installed in your system, use the appropriate command: **`ioscan -kfClan | grep J3514A#002`** *(on K-Class)* **`ioscan -kfClan | grep J3516A#002`** *(on A-180 or D-Class)* If the card is installed, you will see the hardware path, interface number and other details displayed on the screen. To fix the problem, either install patch PHNE_22727 or replace the HSC-FX card with an HSC-TX card, J3514A#001 (K-class) or J3516A#001 (A-180 and D-Class). If you replace the card, you will also need an FX-to-TX converter. The converter is not an HP product but has been qualified for use with HP cards; it is made by Transition Networks, part number C/E-100BTX-FX-04(SC).

Table B-4 Problems Configuring HP-UX 11i v1 (Continued)

Problem	Description/Action
SCSI PCI Restrictions for OLA/R	Online addition and replacement (OLA/R) of PCI HBAs is available in HP-UX 11i v1 on the HP 9000 L-Class, N-Class, and Superdome systems. This feature allows you to add or replace a failed HBA without having to reboot the system. Some restrictions in the ability to perform online addition (OLA) and/or online replacement (OLR) apply with these SCSI HBAs: • A4800A • A5149A • A5150A • A5159A • A5838A You can find more information about SCSI HBA OLA/R restrictions by going to the HP-IT Resource Center (ITRC), at the following URL: **`http://itrc.hp.com`** 1. Go to the area for knowledge trees 2. Under "Hardware" select **Networks** 3. Select **mass storage connectivity** 4. Select **scsi hba's** 5. Select **technical support** This takes you to a page titled "scsi hba's." (You might want to bookmark this page, for future reference.) 6. Select the **ola/r support** link in the list on the left side of the page; this takes you to the SCSI HBA OLA/R restrictions.

SCSI PCI HBA Documentation Correction

An error exists in the current manual for each of following SCSI PCI Host Bus Adapters (HBAs): A4800A, A5149A, A5150A, and A5159A

The content for the “Setting the SCSI IDs” section of the “Installing the Adapter” chapter is not correct. The correct content for the “Setting the SCSI IDs” section is as follows:

You must assign the SCSI host bus adapter and each SCSI device a separate SCSI ID (0 through 15 for a 16-bit SCSI bus). The device's priority on the SCSI bus is determined by the device's SCSI ID. The order of SCSI ID priorities (from highest to lowest) is 7, 6, 5, 4, 3, 2, 1, 0, 15, 14, 13, 12, 11, 10, 9, and 8. A device with SCSI ID 7 has the highest priority, and one with SCSI ID 8 has the lowest.

When you are assigning SCSI IDs, we recommend you give the SCSI host bus adapter higher priority than the other SCSI devices on the bus. SCSI ID 7 is the preset SCSI ID for your HP SCSI host bus adapter (giving it the highest priority on the SCSI bus). Set each of the other SCSI devices on the bus to one of the remaining SCSI ID's.

For a multi-initiator (High Availability [HA]) configuration-where multiple SCSI host bus adapters are connected to the same SCSI bus-the SCSI host bus adapter that carries the most traffic should be assigned a SCSI ID of 7 (giving it the highest priority), then you must change the SCSI ID of each of the remaining SCSI host bus adapter's on the bus from the preset setting (7), to the next highest priority remaining SCSI IDs (e.g. 6, 5, 4... and so on).

If you plan to boot your system from a hard disk drive on the SCSI bus, you should assign that drive the next highest priority unassigned SCSI ID. If there is only one SCSI host bus adapter (SCSI ID = 7), the hard disk drive would be assigned a SCSI ID of 6. If there are multiple SCSI host bus adapters, the hard disk drive would be assigned the next highest priority SCSI ID available after all of the SCSI host bus adapters have been assigned higher priority SCSI IDs.

The peripheral device SCSI IDs are usually set with jumpers or a switch on the peripheral. Refer to the peripheral manufacturer's instructions to determine the ID of each device and how to change it.

You must have no duplication of SCSI IDs on a SCSI bus-the system will hang or crash if duplicate SCSI IDs are on the bus.

See the "Checking SCSI Bus Compatibility" section of the Service and User Guide for details on conforming and changing SCSI IDs.

The following manuals are affected:

- *HP A4800A PCI FWD SCSI Host Bus Adapter Service and User Guide* (A3725-96031, E0201), page 30
- *HP A5149A PCI Ultra2 SCSI Host Bus Adapter Service and User Guide* (A5149-96003, E0201), page 31
- *HP A5150A PCI Dual Port Ultra2 SCSI Host Bus Adapter Service and User Guide* (A5150-96002, E0201), page 35
- *HP A5159A PCI Dual Port FWD SCSI Host Bus Adapter Service and User Guide* (A5159-96002), page 31

HP-UX Apache-based Web Server Requires LD Patch to Start and Stop

IMPORTANT

Due to an `ld` defect, you may encounter problems starting and stopping HP-UX Apache-based Web Server (`hpuxwsApache`). At the time of this writing, HP is unable to include a patch. To fix this problem, follow the steps below:

To verify and install the required version of `ld` and `libdld` for the HP-UX Apache-based Web Server:

Step 1. Verify that you are using `ld` and `libdld` version B.11.32 or higher. To determine the version, enter the following command:

```
ld -V
```

Step 2. If the version number is less than B.11.32, install Patch PHSS_26560. See “HP-UX Patching and Patch Management” on page 115 for more information on patches.

Step 3. As root, manually start HP Apache using the following command:

```
/opt/hpws/apache/bin/apachectl1 start
```

Additional Documentation

For detailed configuration and installation instructions, see the following HP Apache documentation in the paths listed below (or at **`http://`*`machinename`*`/hp_docs/apache/`*`document`*** after the web server is started):

HP Apache Admin Guide:
`/opt/hpws/hp_docs/apache/apache.admin.guide`

HP Apache Release Notes:
`/opt/hpws/hp_docs/apache/apache.release.notes`

Problems with Large Systems

After a system is cold-installed, you may wish to add all the file systems that existed under the previous installation, either manually or using `sam`. However, for a large number of file systems (for example, over a hundred), some tables in the kernel may be too small to allow correct booting. This is because the newly-installed kernel contains default values for kernel tables sizes, and does not allow for special configurations made to the previous kernel.

For example, the first boot after adding the file systems may result in error messages displayed to the console, such as:

```
inode:  table is full
proc:  table is full
file: table is full
```

The boot may fail in other ways. For example, you may have to repair the file system manually:

- The kernel may need to be re-configured before booting. The following settings should allow the kernel to be booted, but may not be optimal for performance:

  ```
  ninode = 2048 (default is 476)
  nproc  = 1024 (default is 276)
  nfile  = 2048 (default is 790)
  ```

- Alternatively, you may re-configure the kernel using one of these methods:

  — Select an appropriate bundle of sam-tuned parameters from sam's kernel configuration **Actions** menu.

  — Raise maxusers to a large value, such as 200.

Determine the correct configuration for your system.

Un-installing HP-UX 11i v1

If you cannot resolve problems after installing or updating to HP-UX 11i v1, you may wish to un-install 11i. The process depends upon the install or update process you followed:

- Assuming that you have made a `make_tape_recovery` or `make_net_recovery` tape using Ignite-UX, boot the system from that media to return the OS and any archived applications to the previous release. This is covered in the *Ignite-UX Administration Guide*, available on the HP-UX 11i v1 Instant Information CD and on this web page:

  `http://docs.hp.com/`

  If you don't use Ignite-UX or do not have a current `make_tape_recovery` tape, read on....

- If your applications and data are on a separate disk from the OS, cold-install the previous OS over 11i. This ensures a clean OS installation, removing all previous upgrade and patch information.
- If applications and/or data are on the same volume with the OS, boot from the previously-saved system recovery tape to return to a previous OS. These "expert recovery" processes are in the *Ignite-UX Administration Guide*.

To determine what applications are on the system and where they are located, use swlist. If you only need to remove applications or patches from the system, use swremove. See the *Software Distributor Administration Guide* for details.

Re-installing Software Distributor

If Software Distributor is missing or damaged, it can be reinstalled using the `install-sd` utility. First, try using the existing copy of `install-sd` located on your system, using an absolute depot path (local) or `hostname:/absolute_depot_path` (remote) for `source_depot_location`:

```
/usr/sbin/install-sd  -s  source_depot_location
```

If the above command is missing or does not work, do the following four steps to load a temporary `install-sd` utility on your system and reinstall Software Distributor.

Step 1. The `install-sd` utility is in the `catalog/SW-DIST/pfiles` directory on the HP-UX 11i v1 OE CD1. If `install-sd` is not in `/var/tmp`, load it. For example, to load `install-sd` from a local CD mounted at `/cdrom`, enter:

```
cp /cdrom/catalog/SW-DIST/pfiles/install-sd /var/tmp
```

The `install-sd` command uses the `/var/tmp` directory by default and needs at least 2MB of free space.

Step 2. Copy the `swagent.Z` file from the CD:

```
cp /cdrom/catalog/SW-DIST/pfiles/swagent.Z /var/tmp
```

Step 3. Make `install-sd` executable:

```
chmod +x  /var/tmp/install-sd
```

Step 4. Run `install-sd` to install the SW-DIST product onto your system:

```
/var/tmp/install-sd -s /sd_cdrom
```

For more about the `install-sd` command, see the *Software Distributor Administration Guide*, available on the Instant Information CD and on this web page:

```
http://docs.hp.com
```

More info on Software Distributor is available on this web page:

```
http://docs.hp.com/en/SD
```

Recovering a Corrupt System

If your system will not boot at the login prompt, or the system boots but critical files are corrupt, adversely affecting system performance, it may be useful to restore system elements from the HP-UX Install/Update/Recovery media. If there are little or no user applications or data on the system, the best recovery method is usually to cold-install the OS, as explained in Chapter 5, "Cold-Installing HP-UX 11i v1," on page 71. This will erase all data and software on the root disk.

If you wish try to preserve user data or applications on the root disk, however, procedures are available to rebuild the OS. These "expert recovery" procedures are explained in the *Ignite-UX Administration Guide*. This guide is available on the HP-UX Instant Information CD (which you can view via an HP-UX or Windows/NT system), and also on this web page:

`http://docs.hp.com/hpux/os/11i/oe/`

Patch Required for fbackup (1M) and frecover (1M) on SDLT320, SDLT220, and DLTvs80 Tape Drives

Patch PHCO_28998 is now available from the ITRC. PHCO_28998 fixes defects with the `fbackup` and `frecover` commands to work with the latest SDLT320, SDLT220 and DLTvs80 tape drives.

To download the patch:

Step 1. Go to the following URL:

`http://www.itresourcecenter.hp.com`

Step 2. Log in with your IT Resource Center user ID and password

Step 3. Under **maintenance and support (hp products)**, select **find individual patches and firmware** (under the **patching** heading), then enter the desired patch number

NOTE You can also download a patch using anonymous ftp on the **`ftp://ftp.itrc.hp.com`** server.

Verifying and Adding Diagnostic Drivers

HP-UX 11i v1 automatically installs Support Tools on all systems to provide required hardware support. These tools, contained in the `OnlineDiag` bundle, give you a complete solution for verifying, troubleshooting, and monitoring HP system hardware. This includes CPUs, memory, interface cards, mass storage devices, and other devices.

To see if the diagnostic drivers are present and to use sam to install them if they are not:

Step 1. **`cd /stand`**

Step 2. Run the `what` command on the kernel file from which the system is booted, usually vmunix:

`/usr/bin/what vmunix | grep diag`

If the diagnostic drivers are there, the output contains `diag1`, and `diag2` on workstations and `diag0`, `diag1`, and `diag2` on servers. If not, load the drivers as follows:

Step 3. As root, run `sam`:

`/usr/sbin/sam`

Step 4. From the `sam` menus, select **Kernel Configuration/Subsystems**, then select the **DIAGNOSTICS** subsystem. Pull down the **Actions** menu and select **Add Subsystem to Kernel**.

The third column of the matrix, **Pending**, should now show **In** for the **DIAGNOSTICS** subsystem.

Step 5. Select **Actions -> Process New Kernel**. Confirm that you want to reboot the system when prompted.

Help with using Support Tool Manager and the other diagnostics is in the *Support Plus: Diagnostics User's Guide*, available on the Support Plus CD in:

`/cdrom/DIAGNOSTICS/DIAG_USR.PDF`

Problems Affecting Non-C Locales

Difference Between English and Japanese HP-UX STK

The English and Japanese versions of the STK bundled with HP-UX 11i v1 may contain differing documentation (the STK tools are identical for both languages). To verify that you have the latest Japanese documentation set, view these web sites:

http://devresource.hp.com/STK_ja_JP.SJIS

Warning When Updating to Non-C locales

```
Warning! One or more of your selected locales are not
available.
Please invoke the commands "locale" and "locale -a" to verify
your selections and the available locales.
Continuing processing using the "C" locale.
```

Ignore this message which appears when updating from 10.20 in every locale except C. The local environment, such as Japanese, is temporarily disabled during the update session.

C HP-UX 11i v1 Software Bundles

This appendix describes the software bundles included in the HP-UX 11i v1 media contents.

What You Will Find in This Appendix

- "Core Software" on page 176
- "Always Installed Software (Stand-Alone)" on page 178
- "Always-Installed Software (OE)" on page 179
- "Always-Installed Network and Mass Storage Drivers" on page 182
- "Default-Installed Software" on page 183
- "Customer Selectable Software" on page 185
- "Selectable Network Drivers" on page 186

Core Software

The core software installed for all Operating Environments comprise the following software bundles:

Table C-1 Core Software

Bundle Name	Description
`HPUXBase32` or `HPUXBase64`	HP-UX 11i v1 Base OS installation, either 32- or 64-bit
`HPUXBaseAux`	HP-UX Base Auxiliary bundle

Always-Installed Patch Bundles

The always -installed patch bundles for all Operating Environments comprise the following software bundles:

Table C-2 Always-Installed Patch Software

Patch Bundle	Purpose
FEATURE11-11 Feature Enablement Patches	Provides enablement patches for Base-VXVM product.
HWEnable11i Hardware Enablement (HWE)	Provides core patches that enable new processors, systems, I/O cards, devices.
BUNDLE11i Required Patch Bundle	Delivered with June 2003 release of HP-UX 11i v1 (and later releases).
Recommended Patch Bundles from Support Plus Media	
GOLDBASE11i	Base Quality Pack (QPK). Provides high-quality, defect-fix patches for the core OS, graphics and networking drivers included in the OE.
GOLDAPPS11i	Applications Quality Pack (QPK). Provides high-quality, defect-fix patches for OE applications.

NOTE For more information, see the *Patch Management User Guide for HP-UX 11.x Systems*, available at the HP Technical Documentation Web site: **http://docs.hp.com/**

Always Installed Software (Stand-Alone)

The software listed in Table C-3 is always installed with the HP-UX 11i v1 operating system.

Table C-3 Always Installed Software (Stand-Alone)

Bundle Name	Description
OnlineDiag	HP-UX 11i v1 Support Tools
Base-VXVM	Veritas Volume Manager
B9073BA	Instant Capacity (iCAP) for HP 9000 and HP Integrity Servers
Npar	nPartition Provider
OpenSSL	OpenSSL
OBSOLESCENCE	Obsolescence bundle
B8465BA	HP WBEM Services for HP-UX

Always-Installed Software (OE)

The software listed in Table C-4 is installed by Operating Environment (OE).

The Operating Environments are represented as follows:

FOE Foundation Operating Environment

EOE Enterprise Operating Environment

MCOE Mission Critical Operating Environment

MTOE Minimal Technical Operating Environment

TCOE Technical Computing Operating Environment

For the latest version information, refer to the *Read Before Installing or Updating to HP-UX 11i v1* DVD booklet.

Table C-4 Always-Installed Software by Operating Environment

Bundle / Description	Foundation	Enterprise	Mission Critical	TCOE	MTOE
B8324BA Cluster Object Manager			X		
B5736DA EMS HA Monitors		X	X		
B5139EA Enterprise Cluster Master (ECM) Toolkit			X		
T1868AA HP 3D Technology for Java™ 2 Standard Edition version 1.3				X	

Table C-4 Always-Installed Software by Operating Environment

Bundle / Description	Foundation	Enterprise	Mission Critical	TCOE	MTOE
T1869AA HP 3D Technology API for Java™ 1.4				X	
B8724AA HP CIFS/9000 Client	X	X	X	X	
B8725AA HP CIFS/9000 Server	X	X	X	X	
B6061AA HP MLIB Math Software Library				X	
B6060BA HP Message-Passing Interface (MPI)				X	
B3929DA HP OnlineJFS 3.3		X	X		
B3835DA HP Process Resource Manager		X	X		
T1905BA HP Serviceguard			X		
B5140BA HP Serviceguard NFS Toolkit			X		
B8843CA HP-UX Workload Manager			X		

Table C-4 Always-Installed Software by Operating Environment

Bundle / Description	Foundation	Enterprise	Mission Critical	TCOE	MTOE
T1302AA HP-UX Workload Manager Toolkit			X		
B2491BA MirrorDisk/UX		X	X		
MySQL MySQL open-source database	X	X	X		
B6268AA OpenGL 3D Graphics DK and RTE				X	X
B3701AA OV GlancePlus Pak		X	X		
B7697BA PRM Libraries	X	X	X		
J5849AA PAM Kerberos	X	X	X	X	
TechSysConf Technical System Configuration				X	X
B7580AA Visualize Conference				X	X

Always-Installed Network and Mass Storage Drivers

You can find the information that was formerly contained in this section in the *HP-UX 11i v1 Release Notes*. It is available at the HP Technical Documentation Web site:

http://docs.hp.com/hpux/os/11iv1

The HP 9000 and HP Integrity Server Connectivity Web site also provides more driver information:

http://www.hp.com/products1/serverconnectivity/index.html

Default-Installed Software

The software bundles listed in Table C-5 are installed on all Operating Environments by default. You can deselect any of these bundles before you install or update your system.

Table C-5 Default-Installed Software

Bundle Name	Description
B6848BA	Ximian GNOME 1.4 GTK+ Libraries
T1471AA	HP-UX Secure Shell
T2743AA	Global Workload Manager - Agent (gWLM)
ISEEPlatform	Instant Support Enterprise Edition (ISEE)
MOZILLA	Mozilla Application Suite
MOZILLAsrc	Mozilla Source Distribution
NParCmds	Enhanced nPartition Commands
ParMgr	Partition Manager
perl	Perl Programming Language
SysMgmtWeb	System Management Homepage
vparprovider	vPartition Provider
HP-UX Web Server Suite [1]	
hpuxwsApache	HP-UX Apache-based Web Server
hpuxwsTomcat	HP-UX Tomcat-based Servlet Engine
hpuxwsWebmin	HP-UX Webmin-based Admin
hpuxwsXml	HP-UX XML Web Server Tools

Table C-5 Default-Installed Software (Continued)

Bundle Name	Description
Java™ Bundles	
Java15JDK	Software Development Kit (v1.5) for the Java Platform
Java15JDKadd	Java Development Kit for HP-UX Add-On (v1.5)
Java15JRE	Runtime Environment (v1.5) for the Java Platform
Java15JREadd	Java Runtime Environment Add-On (v1.5)
T1455AA	Java Runtime Plugin for Netscape and Mozilla (v1.3)
B9789AA	Runtime Environment (v1.3) for the Java Platform
T1458AA	Java Runtime Plugin for Mozilla (v1.4)
T1457AA	Runtime Environment (v1.4) for the Java Platform
B9788AA	Software Development Kit/Runtime Environment (v1.3) for the Java Platform
T1456AA	Software Development Kit/Runtime Environment (v1.4) for the Java Platform
T1457AAaddon	Java Runtime Environment for HP-UX Add-On
T1456AAaddon	Java SDK for HP-UX Add-On

1. In June 2003, HP Apache rebundled into four separate bundles as part of the HP-UX Apache Web Server Suite, and replaces the HP Apache bundle in previous releases.

Customer Selectable Software

The bundles listed in Table C-6 are *not* installed or updated by default. You must select the desired bundles prior to installing or updating your system.

Table C-6 Selectable Software (All OEs)

Bundle Name	Description
B5725AA	HP-UX Installation Tools (Ignite-UX) Includes the following packages: Ignite-IA-11-22: HP-UX Installation Utilities for Installing 11.22 IPF Systems Ignite-UX-11-00: HP-UX Installation Utilities for Installing 11.00 Systems Ignite-UX-11-11: HP-UX Installation Utilities for Installing 11.11 Systems Ignite-UX-11-23: HP-UX Installation Utilities for Installing 11.23 Systems
J5083AA	HP-UX HIDS (Servers Only)
B9901AA	HP IPFilter
JAVAOOB	Java Out-of-box Utility
J4269AA	Netscape Directory Server (LDAP)
T2351AA	Pay Per Use
SwPkgBuilder	Software Package Builder
T2414BA	HP Systems Insight Manager

NOTE HP Servicecontrol Manager has been removed from the HP-UX 11i v1 OEs as of the September 2005 update release. HP Systems Insight Manager (SIM) replaces Servicecontrol Manager version 2.5 and later. If you have a previous version of Servicecontrol Manager installed on your system and would like to install HP SIM you must first manually remove Servicecontrol Manager.

Selectable Network Drivers

You can find the information that was formerly contained in this section in the *HP-UX 11i v1 Release Notes*. It is available at the HP Technical Documentation Web site:

http://docs.hp.com/hpux/os/11iv1/index.html

The HP 9000 and HP Integrity Server Connectivity Web site also provides more driver information:

http://www.hp.com/products1/serverconnectivity/index.html

D Configuring Built-In PCI Networking

This appendix describes configuring built-in (or core) PCI networking cards in HP workstations and servers.

1000Base-T (Gigabit Ethernet)

These instructions apply to the 1000Base-T (Gigabit Ethernet) product. They assume that the card has been factory installed and the software already loaded on your disk.

Step 1. Log in as **root** and verify that the card and its hardware path are displayed by executing the command: **ioscan**.

Step 2. Run the System Administration Manager: **sam**.

Step 3. Double click `Networking and Communications`.

Step 4. Double click **Network Interface Cards**.

Step 5. Highlight the Gigabit Ethernet card and choose **Configure** from the **Actions** menu.

Step 6. Fill in the form according to the instructions.

Step 7. Click on the **OK** button to activate the card and then select exit from the "File" menu until you exit SAM.

Optional Step: Configure Jumbo Frame Size

Jumbo frames have an mtu_size of 9000 bytes. If using Jumbo Ethernet frames, ensure that all end stations on a given LAN (that is, no routers or layer 3 switches in between) have the same MTU setting. However switch ports in the LAN can have any MTU setting greater than or equal to the end station MTU.

1. Obtain the PPA number of the card by executing: `lanscan`
2. Choose one of two configuration methods that will permanently save your configuration. You can either:
   - use the GUI-based system admin manager (SAM).
     To use SAM, type **sam** at the HP-UX system prompt; then double-click Networking and Communications, and then `Advanced Configuration`--see the *Ethernet Support Guide* for details, and then do the steps for verifying the MTU size;
     or

- edit the configuration file in `/etc/rc.config.d/`using an editor such as "vi." Depending on your driver, the filename can be either `hpgelanconf`, `hpigelanconf`, or `hpietherconf`. Set the mtusize by editing either HP_GELAN_MTU[0]=*`mtusize`*, HP_IGELAN_MTU[0]=*`mtusize`*, or HP_IETHER_MTU[0]=*`mtusize`*, and insert the proper interface name: HP_GELAN_INTERFACE_NAME, HP_IGELAN_INTERFACE_NAME, or HP_IETHER_INTERFACE_NAME. When the system reboots, the interface will be configured for jumbo frame operation.

3. Verify MTU change by executing: **`netstat -rn`**. If MTU has not changed, execute the following commands:
   `ifconfig lan PPA_number unplumb`
   `ifconfig lan PPA_number ip_address netmask netmask up`
4. To check (or verify) the current Ethernet frame size, execute:
   `lanadmin -m PPA_number`

Alternative way to temporarily configure jumbo frame size: Execute:
`lanadmin -M mtu_size PPA_number`.
The PPA number is the one we obtained from the output of lanscan. For jumbo frames set the mtu_size to 9000 (bytes). Note: using `lanadmin` will not preserve your settings across reboots.

Optional: Troubleshooting a Fast Ethernet Migration to HP-UX 11i

The following information is applicable only if your Fast Ethernet update to HP-UX 11i fails.

In HP-UX 11i, the drivers for PCI and HSC-based Fast Ethernet networking are consolidated into one driver called `btlan`, which is pre-installed as part of the kernel. The configuration files used by these networking drivers in HP-UX 10.20 and 11.0—`hpbtlanconf` (`btlan`), `hpbase100conf` (`btlan3`), `hpgsc100conf` (`btlan4`), `hppci100conf` (`btlan5`), and `hpsppci100conf` (`btlan6`), which are in the `/etc/rc.config.d directory`, are merged into one file.

IMPORTANT

The configuration files used by the PCI and HSC-based Fast Ethernet networking drivers are automatically updated as part of the process of migrating to HP-UX 11i.

If the update process fails, the PCI and HSC pre-update configuration files have to be merged manually as explained further in the following paragraphs.

How the Automatic Merge Works Using the BTLAN.100 Script

During an update, a configuration script called `BTLAN.100`, automatically merges HSC and PCI pre-11i Fast Ethernet configuration files into one file called `hpbtlanconf`.

Once the `BTLAN.100` script creates the merged configuration file, it is placed temporarily in the `/var/adm/sw/save_custom/UNIFIED_MER` directory, and the original configuration files are saved with the extension `.obsolete`. During the consolidated `btlan` driver installation, the merged configuration file is then moved to the `/etc/rc.config.d` directory as `hpbtlanconf`.

Note that the `BTLAN.100` script will only merge the driver-specific configuration files if the corresponding hardware is present on the system, and if the files have at least one LAN interface configured. (For

example, if the system had the HSC-based Fast Ethernet networking driver [btlan4] and corresponding hardware [HSC cards], then the hpgsc100conf configuration file should have at least one card configured in it.)

Optional: Manual Merging

If the update process is abandoned because of preupdate script failures (other than syntax errors in configuration files or a duplicate LAN interface error), then the configuration files have to be merged manually. Once this has been done, you can then continue the update process. (Once the update process is restarted, answer NO (N) at the prompt, Do you want to proceed in merging the configuration files into one? [Y|N].)

Manual Merging Procedure

1. Find out which of the five configuration files listed below exists in the /etc/rc.config.d directory.

   - hpbtlanconf (btlan)
   - hpbase100conf (btlan3)
   - hpgsc100conf (btlan4)
   - hppci100conf (btlan5)
   - hpsppci100conf (btlan6)

2. For each of the files found in Step 1, use the command ioscan -kfC lan to find out if corresponding hardware is present.

   Driver Name: File Name

   a. btlan -- hpbtlanconf
   b. btlan3 -- hpbase100conf
   c. btlan4 -- hpgsc100conf
   d. btlan5 -- hppci100conf
   e. btlan6 -- hpsppci100conf

   If hardware is present, check to see if any LAN interface is configured. For example, the configuration for hpbtlanconf (btlan) would show as follows:

   ```
   HP_BTLAN_INTERFACE_NAME[0]=lan1
   HP_BTLAN_STATION_ADDRESS[0]=0x080009C4686E
   HP_BTLAN_SPEED[0]=100HD
   ```

3. Create the file `hpbtlanconf.merge` in the directory `/etc/rc.config.d` as shown below:

```
#####################################################################
(#) hpbtlanconf
# hpbtlanconf: contains config values for HP PCI/HSC 100Base-T interfaces
#
# HP_BTLAN_INTERFACE_NAME    Name of interface (lan0, lan1, . . .)
# HP_BTLAN_STATION_ADDRESS   Station address of interface
# HP_BTLAN_SPEED             Speed and duplex mode
#
# The interface name, major number, card instance and ppa may be
# obtained from the lanscan (1m) command.
# The station address and speed are set through the lanadmin command.
#####################################################################
HP_BTLAN_INTERFACE_NAME[0]=
HP_BTLAN_STATION_ADDRESS[0]=
HP_BTLAN_SPEED[0]=
#####################################################################
# The HP_BTLAN_INIT_ARGS are reserved by HP. they are NOT user changeable.
#####################################################################
HP_BTLAN_INIT_ARGS="HP_BTLAN_STATION ADDRESS HP_BTLAN_SPEED"
# End of hpbtlanconf configuration file
```

4. As described in steps a, b, and c below, merge every LAN interface (as shown to be configured in Step 2) into the file `hpbtlanconf` in the `/var/adm/sw/save_custom/UNIFIED_MER` directory.

   a. First, note that a set of three parameters is required for each LAN interface:

      - `HP_BTLAN_INTERFACE_NAME`,
      - `HP_BTLAN_STATION_ADDRESS` and
      - `HP_BTLAN_SPEED`.

   b. Second, note that the index value used for the set of three parameters should be unique for each interface. For example:

      `HP_BTLAN_INTERFACE_NAME[0]=lan1`
      `HP_BTLAN_STATION_ADDRESS[0]=0x080009C4686E`
      `HP_BTLAN_SPEED[0]=100HD`

      `HP_BTLAN_INTERFACE_NAME[1]=lan2`
      `HP_BTLAN_STATION_ADDRESS[1]=0x080009C4B23C`
      `HP_BTLAN_SPEED[1]=FULL`

   c. Finally, merge all LAN interfaces by creating a set of three parameters with a unique index for each:

- Copy the value of the interface name into the parameter `HP_BTLAN_INTERFACE_NAME`.
- Copy the value of the station address into the parameter `HP_BTLAN_STATION_ADDRESS`.
- If the `SPEED` parameter exists, and if its value (lowercase or uppercase) is 100FD or 100HD, 10FD or 10HD or auto_on, copy the value into the `HP_BTLAN_SPEED` parameter.

  However, if the `SPEED` parameter does not exist, and the `DUPLEX` parameter has been set and its value (lowercase or uppercase) is FULL or HALF, copy the value to `HP_BTLAN_SPEED` parameter.

  If neither the `SPEED` nor `DUPLEX` parameter values have not been set, do not put any value for the `HP_BTLAN_SPEED` parameter.

5. If the `hpbtlanconf` configuration file already exists (as `/etc/rc.config.d/hpbtlanconf`), copy it to `/etc/rc.config.d/hplanconf.obsolete`.
6. Move the file `hpbtlanconf.merge` to `hpbtlanconf` by using the command

   ```
   mv -f /etc/rc.config.d/hpbtlanconf.merge
   /etc/rc.config.d/hpbtlanconf
   ```

7. Restart the update process. Answer `NO` (`N`) at the prompt, `Do you want to proceed in merging the configuration file into one? [Y|N].`

E Controlling Memory Utilization of VxFS 3.5 on HP-UX 11i v1

This appendix discusses the effect of two VxFS tunables `vx_ninode` and `vxfs_bc_bufhwm`, on system memory consumption and provides guidelines on setting them for machines with relatively low RAM.

What You Will Find in This Appendix:

- "Introduction" on page 196
- "Controlling the inode Cache" on page 197
- "Controlling the Buffer Cache" on page 198
- "Conclusion" on page 199

Introduction

VxFS 3.5 resorts to caching objects in memory as a way to improve performance. Most of the memory consumed by VxFS is used to cache inodes (in the `inode` cache) and metadata (in the buffer cache). The sizes of these caches and the behavior of VxFS are controlled by a set a tunables. The performance of VxFS can be tailored to meet a variety of usage scenarios taking into account variations in machine configurations *via* the use of these tunables.

The default settings of these tunables are meant to provide good performance for typical deployment configurations. However, these default values can result in the VxFS driver consuming more memory, especially when the file systems are stressed (under heavy file system load). For machines low on RAM, these tunables may need to be manually turned down depending on the expected use of the machine and the performance required of the file system.

VxFS 3.5 exposes two global tunables, `vx_ninode` and `vxfs_bc_bufhwm`, that control the size of the `inode` cache and buffer cache respectively and thereby affect system memory consumption by the file system driver.

This appendix discusses when and why the sizes of the `inode` and buffer caches will need to be tuned down from their default values on certain configurations. The following sections describe these tunables in detail as well as the effects of changing their default values.

Controlling the `inode` Cache

As a matter of course, VxFS file systems allocate and free up inodes as required by the load on the file system. VxFS caches these inodes for better performance (faster lookups). In general, larger inode caches help file systems perform better for file/web server loads. The global (static) tunable `vx_ninode`, represents the maximum possible size of the VxFS inode cache. Normally, the size of the inode cache is decided (auto-tuned) at boot time by VxFS depending on the amount of physical memory in the machine, provided that the value of `vx_ninode` is set to zero (default).

However, system low on RAM (typically less than or equal to 1GB/CPU may not require a large inode cache if file systems are not exposed to file/web server loads, or file system performance is not critical. It is recommended that the value of `vx_ninode` be set to more than that of *`nfile`*, an HP-UX tunable that represents the maximum number of file descriptors.

Controlling the Buffer Cache

VxFS 3.5 implements a private buffer cache used exclusively for metadata. The allocations made for this buffer cache are not static but grow and shrink during system usage depending on the load on the file system. The global (static) tunable, `vxfs_bc_bufhwm`, represents the maximum possible size of the VxFS buffer cache. The maximum size of the metadata buffer cache is decided (auto-tuned) at boot time based on system memory size, provided that the value of `vxfs_bc_bufhwm` is set to zero (default).

As with the tunable `vx_ninode`, a large metadata buffer cache can help improve file system performance especially during metadata-intensive loads (stat, create, remove, link, lookup operations). However, systems low on RAM (having typically 1GB/CPU or less) may not need a large metadata buffer cache if file system load is not metadata-intensive or performance is not critical. In such circumstances, the value of `vxfs_bc_bufhwm` can be manually tuned down, subject to a minimum of 6144 (6MB).

Conclusion

VxFS uses in-memory caches for objects that results in improved file system performance. The cache sizes are controlled by tunables that are auto-tuned at boot time by the driver. For situations where the auto-tuned values are not optimal, users are provided with the ability to set these tunables.

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