

HP-UX 11i Version 1.6 Installation and Configuration Guide

Itanium®-based Servers and Workstations

Edition 1



i n v e n t

Manufacturing Part Number: 5187-0187

July 2002

United States

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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>).

Publication History

The manual publication date and part number indicate its current edition. The publication date will change when a new edition is released. The manual part number will change when extensive changes are made.

To ensure that you receive the new editions, you should subscribe to the appropriate product support service. See your HP sales representative for details.

Related Document: *HP-UX 11i Version 1.5 Installation and Configuration Guide*, June 2001, B9106-90001, (HP-UX 11i), CD (Instant Information), and Web (<http://www.docs.hp.com>)

New editions of this manual will incorporate all material updated since the previous edition. For the latest version, see the HP-UX 11i v1.6 documentation on the Web:

<http://docs.hp.com/hpux/os/11iV1.6>

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<http://docs.hp.com/assistance/feedback.html>

About this Guide

This guide describes installing HP-UX 11i v1.6 on HP-UX servers and workstations and assumes that you are the system's administrator and familiar with installing and maintaining software on the system.

This guide applies to the July 2002 version of HP-UX 11i v1.6. If you need information for a previous version of HP-UX 11i, go to the web:

<http://docs.hp.com>

If you need to set up your system in different languages, please refer also to *Configuring HP-UX For Different Languages*, available on the Instant Information CD and on the HP documentation web site:

<http://docs.hp.com>

A localized version of that manual is available with localized media kits. Latest versions are available at the HP documentation web site by selecting **localized documentation**.

Typographic Conventions

We use the following typographical conventions.

<i>audit</i> (5)	HP-UX manpage. <i>audit</i> is the name and 5 is the section in the <i>HP-UX Reference</i> . 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 <i>man</i> (1).
<i>Book Title</i>	Title of a book. On the web and on the Instant Information CD, it may be a hot link to the book itself.
Command	Command name or qualified command phrase.
ComputerOut	Text displayed by the computer.
<i>Emphasis</i>	Text that is emphasized.
Emphasis	Text that is strongly emphasized.
KeyCap	Name of a keyboard key. Note that Return and Enter both refer to the same key.
Term	Defined use of an important word or phrase.
UserInput	Commands and other text that you type.
<i>Variable</i>	Name of a variable that you may replace in a command or function or information in a display that represents several possible values.
[]	Contents are optional in formats and command descriptions. If the contents are a list separated by , you must choose one of the items.
{ }	Contents are required in formats and command descriptions. If the contents are a list separated by , you must choose one of the items.
...	Preceding element may be repeated an arbitrary number of times.
	Separates items in a list of choices.

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1 Welcome to HP-UX 11i v1.6

This chapter introduces you to the features and media contents of HP-UX 11i v1.6:

- “Features and Applications Available in HP-UX 11i v1.6” on page 17
- “HP-UX 11i v1.6 Operating Environments (OEs)” on page 20
- “How to Use This Install Guide” on page 23
- “Media Kit Contents” on page 24
- “Other Resources Needed” on page 25
- “Using the Cold-Install Checklist” on page 27
- “The Next Step” on page 29

HP-UX 11i Version 1.6 is the release for all **Itanium**®-based HP-UX systems. The Release ID for HP-UX 11i Version 1.6 is B.11.22, and we use the term **HP-UX 11i v1.6** throughout this install guide. The HP-UX 11i v1.6 **Operating Environments** (OE) are integrated and tested software solutions containing the operating system and selected applications.

Precision Architecture Reduced Instruction Set Computing (PA-RISC)-based systems should continue to run HP-UX 11i (Release ID B.11.11) or earlier releases. HP-UX 11i v1.6 does not run on PA-RISC based systems.

Mission Critical Support

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

Features and Enhancements

The HP-UX 11i v1.6 release includes the following major features and enhancements:

- Built from the 11i source stream so it contains:
 - Same “look & feel” as the 11i version on PA-RISC
 - 100% leverage of system administrator expertise
 - Same layered software products

- Built for 64-way scalability
- Full HP-UX 11i OS functionality with the exception of vPars
- New OS functionality not yet available on PA-RISC:
 - MxN threads for improved Java performance
 - Dynamically tunable kernel parameters include 14 new parameters
- Full support of the **Logical Volume Manager (LVM)** product. LVM is now the default volume manager.
- Support for running most PA-RISC applications on Itanium-based systems without recompiling.
- New commands and functionality.
- Enhancements to existing commands and functionality.
- Availability of more products in Native mode.



To complete the review in this chapter, we estimate you require 1 hour to review the new features, media kit contents, different operating environments, install guide contents, other resources, and the cold-install checklist. Please note that your time may vary.

Features and Applications Available in HP-UX 11i v1.6

The following features and applications are available in this release:

- Three Operating Environments (Base, MTOE, and TCOE)
- 32- and 64-bit versions of ALL system libraries (shared only), both PA-RISC and Itanium
- Dynamic Tunables
- Core security functionality
- JFS Version 3.3 (Veritas File System)
- Veritas Volume Manager version 3.1
- CDFS w/Rock Ridge Extensions
- NIS/NIS+
- Logical Volume Manager (LVM) now the default volume manager
- New kernel configuration tool, `kcweb`
- System Administration Manager (SAM)
- MC/ServiceGuard
- ServiceGuard Extension for RAC (formerly ServiceGuard OPS Edition)
- Enterprise Cluster Master Toolkit
- Network Transport
- Automounter
- Internet Services
- HP-UX Processor Sets
- C, ANSI C++, and Fortran compilers
- Dynamic Loader
- Pthread Library (libthread)
- MxN Thread Model
- Common Desktop Environment (CDE)
- Strong Random Number Generator
- Internationalization fonts, character sets, and converters
- Distributed Computing Environment (DCE)
- HP-UX Software Transition Kit (STK)
- Aries Binary Translator
- Ignite-UX

You can find the complete list of applications included in the HP-UX 11i v1.6 release in the HP Application Availability Matrix:

<http://www.software.hp.com/MATRIX>

NOTE

HP is continually adding support for additional hardware and software. Contact your HP Service Representative for information about additional support or refer to the latest edition of this document on <http://docs.hp.com>.

Features Unavailable in HP-UX 11i v1.6

In comparison with HP-UX 11i, HP-UX 11i v1.6 does not provide support for the following:

- PA-RISC systems
- Operating system update (Update-UX), HP-UX 11i v1.6 must be cold installed
- HP-UX Workload Manager
- Virtual Partitions (vPars)
- Business Copy/BCV/snapshot features on high-end disk arrays
- Fabric connectivity with Fibre Channel Mass Storage
- OSPF agent for gated
- PA-RISC cross development on Itanium-based processors
- HP-supplied PA-RISC mode archive system libraries
- HP-supplied Itanium-based archived system libraries
- Mix & match between Itanium-based and PA-RISC binaries and/or 32-bit and 64-bit objects
- Framebuffer graphics support
- Boot from floppy disk
- I/O OLAR/D
- CCNuma
- Veritas Volume Manager version 3.2
- Instant Capacity on Demand (iCOD)
- `make_tape_recovery`

In addition, administrators and developers should make note of the following important changes and limitations:

- No 32-bit version of this OS will be made available.
- The id number returned by `uname` may no longer be unique.

TIP

Additional information about these changes, limitations, and differences between HP-UX 11i and HP-UX 11i v1.6 are described further in the *HP-UX 11i Version 1.6 Release Notes* (MPN: 5187-0701).

HP-UX 11i v1.6 Operating Environments (OEs)

Beginning with HP-UX 11i, the operating system is delivered as part of an HP-UX Operating Environment (OE), an integrated and tested software solution containing the operating system and selected applications.

In HP-UX 11i v1.6, the operating system and selected applications are provided on DVDs. To install the full OE, both DVDs are necessary. If you do a minimum install, the always-installed applications are the only applications included.

- HPUXBase64, which consists of operating system commands and libraries bundled for 64-bit systems.
- HPUXBaseAux, which includes system manageability software such as Event Monitoring Service (EMS), Judy Libraries, Software Distributor (SD), Update-UX, and the new kernel configuration tool, kcweb. This additional required core software is also referred to as the Auxiliary OS.
- Always installed network and I/O drivers required by the operating system and installed by default:
 - Fibre Channel Tachlite HBA driver for the PCI adapter
 - intl100 driver for the **A6792A** card
 - 100BASE-T driver for Ethernet adapters
 - 1000Base-T/SX (Gigabit Ethernet) drivers for cards **A4926A**, **A6825A**, **A6794A** and **A6847A**
 - SCSI Ultra4 interface driver for Itanium-based systems with the LSI 53C1030 SCSI Ultra4 controller
- Other always installed products include:
 - OnlineDiag, installed by default, which provides the HP-UX 11i v1.6 Diagnostics that include STM, ODE, and EMS hardware monitors.
 - Base VERITAS Volume Manager 3.1 for HP-UX (VxVM). This is the same product that was delivered in the HP-UX 11i v1.5 release although it is no longer the default volume manager.

For more information, see the *HP-UX 11i Version 1.6 Release Notes*.

- Java JRE v1.3
- HP Apache-based Web Server v1.3
- Perl v5.6.1
- The Logical Volume Manager (LVM) is the HP-UX proprietary volume manager and is now the default volume manager for HP-UX.
- CDE-English
- Selectable software contains the additional products that you can select. These products include:
 - HP-UX Install Utilities
 - Intrusion Detection System IDS/9000 (C.02.01) - only available on Commercial Server media

Operating Environments for HP Commercial Servers

The OE for commercial servers contains all base functionality that is common to other OEs, including the base 64-bit HP-UX Operating System, network drivers, and other always-installed functionality. In addition, this OE includes:

- Common Internet File System (CIFS)/9000 Server (as delivered in HP-UX 11i)
- CIFS/9000 Client A.01.08 (as delivered in HP-UX 11i)
- Netscape Communicator 4.79
- Pluggable Authentication Modules (PAM) Kerberos

Operating Environments for HP Workstations and Technical Servers

The following HP-UX 11i v1.6 Operating Environments are available for Itanium-based workstations and technical servers:

- **HP-UX 11i v1.6 Minimal Technical OE (MTOE)**

Available for workstations only. Contains all the base functionality that is common to other OEs, including the base 64-bit HP-UX Operating System, network drivers, and other always-installed

functionality. However, it includes only a sparse set of high-demand applications so as not to increase purchase costs, support costs, or license costs over the base OE. These applications are:

- 3D Graphics Developers Kit and Runtime Environment (RTE)
- Netscape Communicator 4.79
- Technical System Configuration (TechSysConf)

See the *HP-UX 11i v1.6 Release Notes* for specific information including important potential impact information.

- **HP-UX 11i v1.6 Technical Computing OE (TCOE)**

Contains the HP-UX 11i v1.6 MTOE, and additional applications to enable a workstation or technical server. These applications are:

- CIFS/9000 Server version A.01.08 (as delivered in HP-UX 11i)
- CIFS/9000 Client version A.01.08 (as delivered in HP-UX 11i)
- Math Libraries (MLIB)
- Message Passing Interface (MPI)
- Pluggable Authentication Modules (PAM) Kerberos

Offline Diagnostics

Offline Diagnostics are on the Itanium-based Processor Offline Diagnostics and Utilities CD (MPN: 5971-4208). The CD is delivered with the hardware and is non-OS dependent (it is not delivered with the HP-UX 11i v1.6 media kit). It contains diagnostics for the rx5670 server, rx2600 server, zx2000 server, and zx6000 workstation.

The HP Server rx4610 Support Utilities CD (MPN: A6153-10004) contains diagnostics for the rx4610 server.

How to Use This Install Guide

To help ensure a successful installation of HP-UX 11i v1.6, we recommend that you review this guide before proceeding to install the operating system (OS) or operating environment (OE) on your system.

HP-UX 11i v1.6 is the *only* HP-UX release for all Itanium-based systems.

This Installation Guide provides detailed information regarding both the hardware and the software that together make up your new system.

TIP

We provide any last-minute install issues in the *Read Before Installing HP-UX 11i Version 1.6* DVD booklet (MPN: 5187-0194) that comes with the HP-UX 11i v1.6 media. Be sure to review this booklet before continuing.

Media Kit Contents

This install guide is part of the HP-UX 11i v1.6 media kit. Please review the contents of the media kit. It also includes the following DVDs, CD, and documents:

- **HP-UX 11i v1.6 (B.11.22) DVD** — Contains the HP-UX operating system (OS), required networking software, Ignite-UX, and online diagnostics.
- **HP-UX 11i v1.6 (B.11.22) Applications DVD** — Contains HP-UX application software.
- **HP-UX 11i Version 1.6 Instant Information CD** — Contains current HP-UX manuals, release notes, and white papers. See the CD booklet for more information.
- ***Read Before Installing (RBI) HP-UX 11i Version 1.6*** — Provides last-minute information for HP-UX 11i v1.6. Read this DVD booklet before installing or configuring HP-UX.
- ***HP-UX 11i Version 1.6 Release Notes*** — Describes new features and functionality changes for HP-UX 11i v1.6. This file is on the system after you install HP-UX in `/usr/share/docs`

Release Notes are also available on the Instant Information CD and on the web:

<http://docs.hp.com/hpux/os/11iV1.6>

- ***HP-UX 11i Version 1.6 Installation and Configuration Guide*** Describes the media kit, and then instructions to cold-install and configure HP-UX. The guide is also available on the web:

<http://docs.hp.com/hpux/os/11iV1.6>

NOTE

For the latest information on the HP-UX software releases, go to the web:

<http://www.software.hp.com/RELEASES-MEDIA>

Other Resources Needed

The following resources provide more information:

- Release Notes

HP-UX 11i v1.6 Release Notes describe what is new, changed, or obsolete in a release as compared to previous releases. These release notes apply only to features that are part of the HP-UX 11i v1.6 operating system.

The purpose of the *HP-UX 11i v1.6 Release Notes* is to define the major differences between HP-UX Release 11i Version 1.5 (Release ID B.11.20) and HP-UX 11i v1.6 (Release ID B.11.22).

Release notes are found in the following locations:

- HP-UX 11i Version 1.6 Instant Information CD. See “HP-UX 11i Version 1.6 Instant Information CD” for more information.
- `/usr/share/docs` on your HP-UX 11i v1.6 system. Also included in the `/usr/share/docs` directory are files containing information about previous releases of HP-UX.
- <http://docs.hp.com> See “HP Documentation Web Site” on page 26 for more information.

README Documents

We provide any last-minute install issues in the *Read Before Installing HP-UX 11i Version 1.6* DVD booklet (MPN: 5187-0194) that comes with the HP-UX 11i v1.6 media. Be sure to review this booklet before continuing.

README documents are DVD booklets that contain information about the installation process that may not appear in the installation manual. Any product may have a README document, so you may have available several README documents. The README document specific for HP-UX 11i v1.6 is included with your media kit.

HP-UX 11i Version 1.6 Instant Information CD

As of the HP-UX 10.30 Release, Hewlett-Packard introduced a new product, Instant Information, which provides HP-UX documentation on a CD. Instant Information provides improved online presentation, print quality, and search capabilities.

HP-UX Welcome Page

The HP-UX Welcome Page on your HP-UX 11i v1.6 system contains pointers to information to help you use your HP-UX system.

Manual Pages

For HP-UX 11i v1.6 systems, the manual (man) pages are available on the HP-UX Welcome Page of your system, from <http://docs.hp.com>, in Instant Information under the title *HP-UX References*, and through the use of the `man` command.

HP Documentation Web Site

The most current version of these documents, as well as all Hewlett-Packard documentation, is always found at the web site: <http://docs.hp.com>.

White Papers on HP-UX

For HP-UX 11i v1.6, all associated white papers are available at <http://docs.hp.com> and on the Instant Information CD

Using the Cold-Install Checklist

This checklist outlines the cold-install process and related chapters:

- **Chapter 2: Preparing for Cold Install**
 - “Is Your System Already Running HP-UX 11i v1.6?”
 - “Cold-installing HP-UX 11i v1.6”
 - “Identifying Model, OS/OE, and Software”
 - “System Configurations”
 - “Supported Servers and Workstations”
 - “System and Cold-Install Requirements”
 - “Selecting your HP-UX Console”
 - “Updating Your Ignite-UX Server”
 - “Installing Online Diagnostics”
 - “Collect Key Install Information”
 - “Backing Up Your System”
 - “Save Configuration Files”
 - “HP-UX 11i v1.6 Selectable Drivers”
 - “Locating Source Media and Codewords”
- **Chapter 3: Installing HP-UX 11i Version 1.6**
 - “Reviewing the cold-install process”
 - “How to Install HP-UX 11i Version 1.6”
 - “Retrieving Information After Cold-installing”
- **Chapter 4: Verifying System Installation**
 - “Verifying the HP-UX Installation”
 - “Verifying HP-UX Applications”
 - “Changing the State of HP-UX Installed Patches”
- **Chapter 5: Installing Patches and Applications**

- “Keeping Up to Date with the Latest Critical Patches”
- “Installing OS Patches Required by Individual Applications”
- “Tips for Installing or Updating HP Applications”
- “How to Backup the System”
- **Chapter 6: Configuring and Maintaining HP-UX 11i v1.6**
 - “Configuring Your HP-UX 11i v1.6 System”
 - “Maintaining Your HP-UX 11i v1.6 System”

The Next Step

You have completed the following review:

- “Features and Applications Available in HP-UX 11i v1.6” on page 17
- “HP-UX 11i v1.6 Operating Environments (OEs)” on page 20
- “How to Use This Install Guide” on page 23
- “Media Kit Contents” on page 24
- “Other Resources Needed” on page 25
- “Using the Cold-Install Checklist” on page 27

After reviewing the HP-UX 11i v1.6 media contents and overview, you are ready to start pre-cold install tasks:

- Chapter 2, “Preparing for Cold Install,” on page 31

Welcome to HP-UX 11i v1.6

The Next Step

2 Preparing for Cold Install

This chapter will help you assess the current state of your system prior to cold installing HP-UX 11i v1.6. Topics covered here include:

- “Introduction” on page 33
- “Is Your System Already Running HP-UX 11i v1.6?” on page 34
- “Identifying Model, OS/OE, and Software” on page 37
- “System Configurations” on page 39
- “Supported Servers and Workstations” on page 40
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- “Collect Key Install Information” on page 51
- “Backing Up Your System” on page 52
- “Save Configuration Files” on page 54
- “HP-UX 11i v1.6 Selectable Drivers” on page 55
- “Planning your HP-UX 11i Version 1.6 Install” on page 36
- “Locating Source Media and Codewords” on page 56
- “The Next Step” on page 57

IMPORTANT

Review the *Read Before Installing to HP-UX 11i v1.6* DVD booklet. It describes last-minute cold-install information.



To complete the steps in this chapter, we estimate you require 4 to 6 hours to review the cold-install process, back up the system, and perform pre-cold-install tasks. Please note that your time may vary.

Introduction

This manual deals only with the software steps required to cold install your HP-UX operating system. For hardware upgrades, either see the documentation included with your hardware or consult your HP Support Engineer.

IMPORTANT

Be sure to review this *entire guide* and the “Known Problems” information in the *Read Before Installing to HP-UX 11i v1.6* DVD booklet before proceeding to install on your system.

If you have just received a system that was ordered with “Instant Ignition,” the HP-UX 11i v1.6 Operating Environment has already been installed. You do not need to re-install it.

Installing HP-UX 11i v1.6

Review the remainder of this chapter to help you understand the process to cold install HP-UX 11i v1.6.

- **Cold-install using Ignite-UX**— This method overwrites everything on the target disk. Use cold-install for new systems and on existing systems when overwriting the root (/) volume will not cause loss of applications or data. The process described in this guide cold-installs a single system from local media. If you plan to install many systems simultaneously, you should plan on using an Ignite-UX server. Ignite-UX is a free product available on the HP-UX 11i v1.6 DVD. Additional information on Ignite-UX and newer versions are available on this web site:

<http://software.hp.com/products/IUX>

Is Your System Already Running HP-UX 11i v1.6?

If you have a system that is already running HP-UX 11i V1.6, such as a system that was **factory ignited**, then you may only need to check for the latest, critical patches to have the most up-to-date system.

Check the following references:

- “Keeping Up to Date with the Latest Critical Patches” on page 80
- <http://itrc.hp.com>
- <http://software.hp.com>
- Application release notes and readme booklets for the latest information

Choosing the Configuration

How you choose to configure your system affects how you use this guide. For example, you may choose one of the following paths:

- If you ordered one of the server configurations with HP-UX 11i v1.6 pre-installed, or pre-ignited, this guide can still provide you with valuable information about configuring your system, as well as peripherals, software, and more.
- If you ordered a server or workstation without the OS pre-installed, then you need to follow the install instructions in Chapter 3, “Installing HP-UX 11i Version 1.6,” on page 59.

WARNING

The i2000 workstations ship with Windows 2000 pre-installed. If you follow the install instructions in Chapter 3, “Installing HP-UX 11i Version 1.6,” on page 59, you will overwrite the Windows 2000 operating system.

Cold-installing HP-UX 11i v1.6

Cold-install means installing system software on a new (un-installed) or existing system disks by completely rebuilding the volume group (see “Backing Up Your System” on page 52), erasing the existing operating system and data on that volume, and installing the new operating system and specified software and data.

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.

Cold-install when...

We recommend using Ignite-UX to cold-install HP-UX 11i v1.6 in the following situations:

- You are managing several systems with similar OS configurations.
- You need fast, predictable deployment.
- Your disk space needs to be reconfigured. (See “Planning Your Disk Space Needs” on page 42.)
- Your systems are organized with clean separation of the OS from user, application and data files.

The cold-install process using Ignite-UX is described in Chapter 3, “Installing HP-UX 11i Version 1.6,” on page 59.

Installing network drivers

Installing HP-UX 11i v1.6 will install a minimum set of default networking drivers that apply to the system (see Table D-2, “HP-UX 11i v1.6 Software Bundles and Descriptions,” on page 121). You may need to select or specify other available networking drivers to enable other cards on your system (see Table 2-3, “HP-UX11i v1.6 Selectable Drivers,” on page 55). This can easily be done during the install by following the instructions in “How to Install HP-UX 11i Version 1.6” on page 62.

IMPORTANT

After deciding how to cold install, review the *Read Before Installing to HP-UX 11i* DVD booklet for situations that may apply to your system. Then proceed to collect key system information and back up your current system as explained next.

Planning your HP-UX 11i Version 1.6 Install

See the following documents supplied with the HP-UX 11i Version 1.6 media for additional information:

- *Read Before Installing HP-UX 11i Version 1.6*

The DVD booklet that has last-minute information regarding installing and the release.

This document is also available at HP's user documentation Web site:

<http://docs.hp.com>

- *HP-UX 11i Version 1.6 Release Notes*

Describes changes included in this release. On your system, look in `/usr/share/docs`.

This document is also available on the Instant Information CD supplied with HP-UX 11i Version 1.6 media and on the web:

<http://docs.hp.com>

- Ignite-UX documentation

For the latest information on downloading and using Ignite-UX, go to the Ignite-UX Web site:

<http://software.hp.com/software/HPsoftware/IUX>

WARNING

Cold-installing HP-UX *overwrites everything* on the target disk, including other disk partitions.

HP-UX 11i Version 1.6 does not support sharing the root disk with any other operating system.

CAUTION

If you need to re-install your system at any point, the root disk will be overwritten and all data on it will be lost. For that reason, we recommend that you do not put user data on the root disk.

Identifying Model, OS/OE, and Software

Before you install HP-UX 11i v1.6, check the model and other information on the system. You can use this information in the “System and Cold-Install Requirements” on page 42

Identify model

To determine the model number of your system, enter:

```
model
```

To verify that HP-UX 11i v1.6 is supported on your system see “System Configurations” on page 39.

From EFI you can identify the model by interrupting the autoboot process in the boot manager, entering the EFI shell, and using the `info sys` command:

```
Shell> info sys
```

The sample output should appear as follows:

```
SYSTEM INFORMATION

Product Name: server rx2600

Serial Number: sg20220034

UUID: FFFFFFFF-FFFF-FFFF-FFFF-FFFFFFFFFFFFFF
```

Identify OS and OE

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

```
uname -r
```

After cold-installing to HP-UX 11i v1.6, you’ll notice that `uname` identifies the 11i release as `B.11.22`.

When a system has HP-UX 11i v1.6 installed, you can determine which revision is installed by entering the following command:

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

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

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

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

The output of this command includes a line which identifies the installed OE. For example, the HP-UX 11i v1.6 OE July 2002 release generates this line:

```
HPUX11i-OE B.11.22 HP-UX 11i Operating Environment Component
```

Identify installed software

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

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

For example, to list all products and their versions on a DVD mounted at `/cdrom`, enter:

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

To get table of contents and product details, enter:

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

`swlist` has many options to expand or narrow the listing to specific attributes; see the *swinstall* (1M) manpage or the *Software Distributor Administrator Guide*, available on the Instant Information CD and on this web site: <http://docs.hp.com/hpux/os/11iV1.6>

NOTE

The cold-install process will erase all software on the root volume before installing HP-UX 11i v1.6 and an optional OE. If you wish to retain any existing software, be sure to back up that software before migrating.

System Configurations

HP-UX 11i Version 1.6 (B.11.22) supports only a 64-bit version of the HP-UX kernel.

The following tables outline the fully supported HP-UX 11i Version 1.6 (B.11.22) configurations.

Supported Servers and Workstations

The HP-UX 11i v1.6 release fully supports the following servers and workstations:

- rx5670 (4-way server)
- rx2600 (2-way server)
- zx2000 (1-way workstation)
- zx6000 (2-way workstation)
- rx4610 (4-way server)
- i2000 (2-way workstation)

NOTE

For additional information, including specifications, warranty, and support go to the web: <http://www.hp.com/products1/itanium>

The information in the following tables is subject to change.

Supported Servers and Workstations

Table 2-1 Server Configuration Summary

Platform	Processor	Cache	Max Memory	# Slots	PCI I/O
<i>rx2600</i>	900Mhz	1.5MB	128GB DDR	4 PCI-X	1000B-SX, 1000B-T, 2-port FWD SCSI, 10/100B-TX, Hyperfabric II, Fiber Channel Tachlite, 1/2-port U160 SCSI. 2-port X25/Frame Relay/SDLC
	1.0Ghz	3.0MB			
<i>rx4610</i>	733Mhz	2MB	64GB SDRAM	8 PCI	1000B-SX, 1000B-T, 2-port FWD SCSI, 10/100B-TX, Hyperfabric II, Fiber Channel Tachlite, 1/2-port U160 SCSI. 2-port X25/Frame Relay/SDLC
	733Mhz	4MB			
	800Mhz	4MB			
<i>rx5670</i>	900Mhz	1.5MB	48GB	9 PCI-X, 1 PCI	1000B-SX, 1000B-T, 2-port FWD SCSI, 10/100B-TX, Hyperfabric II, Fiber Channel Tachlite, 1/2-port U160 SCSI. 2-port X25/Frame Relay/SDLC
	1.0Ghz	3MB			

Table 2-2 Workstation Configuration Summary

Platform	Processor	Cache	Max Memory	# Slots	PCI I/O
<i>i2000</i>	733Mhz	2MB	16GB SDRAM	7 PCI-X, 1 AGP	1000B-SX, 1000B-T, 2-port FWD SCSI, 10/100B-TX, Fiber Channel Tachlite, 1/2-port U160 SCSI
	800Mhz	2MB			
<i>zx2000</i>	900Mhz	1.5MB	4GB SDRAM	5 PCI-X, 1 AGP	1000B-SX, 1000B-T, 2-port FWD SCSI, 10/100B-TX, Fiber Channel Tachlite, 1/2-port U160 SCSI
<i>zx6000</i>	900Mhz	1.5MB	12GB SDRAM	3 PCI-X, 1 AGP	1000B-SX, 1000B-T, 2-port FWD SCSI, 10/100B-TX, Fiber Channel Tachlite, 1/2-port U160 SCSI
	1.0Ghz	3.0MB			

Mass Storage Drivers and SCSI Devices

The *HP-UX 11i Version 1.6 Release Notes* provides a complete list of supported mass storage drivers and SCSI devices. See Chapter 2, “Workstation/Server Specific Information” for drivers and devices, and details regarding the impact, compatibility, and documentation for the products.

System and Cold-Install Requirements

To cold-install HP-UX 11i v1.6, you must have the following:

- Supported system
- HP-UX 11i v1.6 OE and application media (two DVD set)
- 512 MB memory, minimum
- 1 GB swap space, minimum

Extra space needed with TCOE and MTOE

Cold-installing the HP-UX 11i Technical Computing OE and the Minimal Technical OE 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`. See Chapter 4, “Verifying System Installation,” on page 71 for example uses of `swlist` and `swremove`.

Planning Your Disk Space Needs

This section provides hints and information to help you determine your disk needs for HP-UX 11i v1.6. If you need more disk space, be sure to order the equipment and plan on installing it after backing up your current system as explained later in this chapter.

Planning Hints

- Record the hardware path to the 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 v1.6 Operating Environment (OE), consider the vendor’s size recommendations.
- When planning disk space, refer to these books:

- *Managing Systems and Workgroups: A Guide for HP-UX System Administrators* — This manual is available on the Instant Information CD and the web:
<http://docs.hp.com>
- *Disk and File Management Tasks on HP-UX* — Prentice-Hall Hewlett-Packard Professional Books, 1997.

Selecting your HP-UX Console

HP-UX requires that you select the correct console via a firmware selection menu. If you have ordered a machine with HP-UX pre-installed, your console selections will be correctly chosen for you. However, if you are cold-installing HP-UX, or change your system configuration, you may need to select the correct console. Skipping this step can result in HP-UX using an unexpected device as a console, and can therefore appear as a system hang.

Step 1. Decide what console you want to use.

Depending on your system configuration, HP-UX can use one of several possible devices as your system console. The possibilities are:

- System Serial Port
- Management Processor (MP) Serial Port (if present)
- VGA device (if present)

Step 2. Using the EFI menus, select the appropriate console device and deselect others:

1. Choose the “Boot option maintenance menu” choice from the main Boot Manager Menu:

```
EFI Boot Manager ver 1.10 [14.57]  Firmware ver 1.20 [4225]
```

```
Please select a boot option
```

```
HP-UX Primary Boot: 0/2/2/0.0.0.0  
EFI Shell [Built-in]  
Boot option maintenance menu  
Security/Password Menu
```

2. Choose “Select Active Console Output Devices”:

```
EFI Boot Maintenance Manager ver 1.10 [14.57]
```

```
Main Menu. Select an Operation
```

```
Boot from a File  
Add a Boot Option  
Delete Boot Option(s)
```

```
Change Boot Order
Manage BootNext setting
Set Auto Boot TimeOut
Select Active Console Output Devices
Select Active Console Input Devices
Select Active Standard Error Devices
Cold Reset
Exit
```

```
SystemGuid-->[FFFFFFFF-FFFF-FFFF-FFFF-FFFFFFFFFFFFFF]
```

```
SerialNumber-->[(null)]
```

3. Choose the correct output device and deselect others. On HP's rx2600, rx5670 and zx6000 systems, the "Select Active Console Output Devices" menu will look like this:

```
EFI Boot Maintenance Manager ver 1.10 [14.57]
```

```
Select the Console Output Device(s)
```

```
Acpi(PNP0501,0)/Uart(9600 N81)/VenMsg(PcAnsi)
Acpi(PNP0501,0)/Uart(9600 N81)/VenMsg(Vt100)
Acpi(PNP0501,0)/Uart(9600 N81)/VenMsg(Vt100+)
Acpi(PNP0501,0)/Uart(9600 N81)/VenMsg(VtUtf8)
Acpi(HWP0002,700)/Pci(1|1)/Uart(9600 N81)/VenMsg(PcAnsi)
Acpi(HWP0002,700)/Pci(1|1)/Uart(9600 N81)/VenMsg(Vt100)
Acpi(HWP0002,700)/Pci(1|1)/Uart(9600 N81)/VenMsg(Vt100+)
Acpi(HWP0002,700)/Pci(1|1)/Uart(9600 N81)/VenMsg(VtUtf8)
* Acpi(HWP0002,700)/Pci(2|0)
Acpi(HWP0003,400)/Pci(0|0)
Save Settings to NVRAM
Exit
```

Interface Differences between Itanium-based Systems

Each Itanium-based System has a similar interface with minor differences. These menus are navigated with the arrow keys to move around, and using the enter or space key to select and deselect devices. Selected devices have an asterisk ("*") next to them. After making your changes to this menu, choose **Save Settings to NVRAM** and then **Exit**.

VGA Consoles

Any device in the output device menu that has a **Pci** section in its path, but does not have a **Uart** section will be a VGA device. If you require a VGA console, choose this device, and unmark all others. In the example above, a VGA device is selected as the console.

Other Console Types

Any device in the output device menu that has a `Uart` section, but no `Pci` section is one of the system serial ports. Notice that there are actually four almost identical system serial ports in the example above. The first four entries are identical except for their `VenMsg` section. This means that each entry is actually the same device, with different protocols for accessing the device. If the first entry is chosen, an Ansi capable terminal device should be used to talk to the serial port. If the second entry is chosen, a Vt100 capable terminal device should be used, and so on.

Selecting a Console on HP rx2600, rx5670, and zx6000 Systems

On HP's rx2600, rx5670, and zx6000 systems, an entry in the output device menu that has a `Uart` section and a `Pci` section will be the serial port on a Management Processor (MP). To use the MP as your console device, select one of the MP serial device entries, and deselect everything else.

Step 1. Choose `Select Active Console Input Devices`.

Step 2. Choose the correct input device and deselect others.

Follow all the sub-steps in Step 2 of “Selecting your HP-UX Console” on page 44 to correctly select your console input device. For input devices, a device that has a `Pci` section in its path, but does not have a `Uart` section will be a USB keyboard device.

Step 3. Choose `Select Active Standard Error Devices`.

Step 4. Choose the correct standard error device and deselect others.

Follow all the sub-steps in Step 2 of “Selecting your HP-UX Console” on page 44 to correctly select your standard error device. Output on this device will be important firmware messages reporting errors.

Step 5. Reset your system

A system reset is required for your console selections to take effect

Last Notes on Console Selection

HP-UX makes decisions based upon the EFI Boot Maintenance Manager menu's `Select Active Console` sections to determine where to send its output. If the incorrect console devices are chosen, HP-UX may either fail

to boot, or will boot with output directed to the wrong location. Therefore, any time new potential console devices are added to a system, or anytime NVRAM on a system is cleared, console selections should be reviewed to ensure that they are correct.

More information on the EFI Paths used for console selection can be found in Intel's Extensible Firmware Interface documents available from their web site.

Updating Your Ignite-UX Server

The HP-UX 11i v1.6 DVD contains the complete Ignite-UX product. When you cold-install HP-UX 11i v1.6 from the media, a subset of Ignite-UX is used to perform the installation on a single system.

If you plan to update an existing Ignite-UX server to install HP-UX 11i v1.6 on more than one system in your network, then you should *update your Ignite-UX server first*.

Updating your Ignite-UX server and using it to update other systems will ensure that you have the `make_net_recovery` command to backup and recover your systems (see the *make_net_recovery* (1M) manpage for information). You will also be assured of keeping consistent kernel configuration with specific drivers, daemons, and kernel tunables on all systems.

The latest Ignite-UX software and documentation can also be downloaded from HP via this web site:

<http://software.hp.com/products/IUX>

NOTE

You cannot use `make_tape_recovery` and `make_recover` with HP-UX 11i v1.6. The `make_net_recovery` command is available.

Installing Online Diagnostics

HP-UX 11i v1.6 automatically installs support tools on all systems to provide required hardware support. These tools, contained in the `OnlineDiag` bundle, give you a complete solution to verify, troubleshoot, and monitor Itanium-based system hardware, including CPUs, memory, interface cards, mass storage and other devices.

CAUTION

Uninstalling the `OnlineDiag` bundle prevents products with dependencies on the support tools from functioning correctly.

Not installing the `OnlineDiag` bundle also removes protections against hardware failures that the support tools provide. Without these tools, you will find it much harder to troubleshoot and fix the problem if a hardware failure occurs.

To ensure the reliability of your computer system, we highly recommend installing the `OnlineDiag` bundle with HP-UX 11i (it will be installed by default with any 11i Operating Environment).

The tools in `OnlineDiag`:

- Protect you against some hardware failures (for example, some memory problems)
- Notify you of hardware events that may indicate impending failure
- Maintain logs that can give you critical help in determining the cause of failures
- Let you troubleshoot system problems with the system online

For most computer systems, no special configuration of the support tools are necessary.

For complete information, see our diagnostics web site:

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

NOTE

Offline Diagnostics are delivered with the hardware. See “Offline Diagnostics” on page 22.

Collect Key Install Information

During the cold-install process, you will be prompted for your system's identity and network addresses. Use Appendix A, "Data Collection Tables," on page 95 to record the data on paper or on another computer for access during the cold-install.

IMPORTANT

You must provide all of the data in the data tables to install HP-UX 11i Version 1.6 (with the exception of the networking information if you are installing a stand-alone system).

By completing the tables prior to beginning the install of HP-UX 11i Version 1.6, you will have all the data you need, in one place, to successfully complete the install once you have started.

Backing Up Your System

In addition to your normal, periodic system backup procedures, you should create a network backup of your root volume group (see “Cold-installing HP-UX 11i v1.6” on page 35). Do this first before performing a cold-install, and again after the cold-install. If a problem occurs, it’s a very simple procedure to restore the system to its original state.

This section offers two alternatives for performing system backups: `fbackup`, and `make_net_recovery`.

Using `fbackup`

Many administrators use the basic `fbackup` command to back up the entire system to tape. You do not need to unmount any imported file systems; `fbackup` does not cross NFS boundaries unless specified.

Using the normal tape location to do a full backup, insert a new tape and enter:

```
fbackup -f/dev/rmt/0m -i -v
```

Later, if you wish to return the system to its previous state, use the `frecover` command. See the *fbackup* (1M) manpage for examples.

Ignite-UX recovery command

For recovering a system, a better alternative to using `fbackup` and `frecover` is to use the `make_net_recovery` command available with Ignite-UX, which offers more flexibility than `fbackup` and `frecover`, including the ability to recover non-bootable systems.

The Ignite-UX server software for HP-UX 11i v1.6 is provided on the HP-UX 11i v1.6 DVD, and can be cold-installed along with HP-UX 11i v1.6 to create a new server. See “Updating Your Ignite-UX Server” on page 48 for details.

NOTE

You cannot use `make_tape_recovery` and `make_recover` with HP-UX 11i v1.6. The `make_net_recovery` command is available.

Using `make_net_recovery`

The Ignite-UX server has the `make_net_recovery` command to create a 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 hostname, IP_address, networking information, and so on. In the event of a root disk failure, you use the Ignite-UX server to restore the system by installing the recovery archive.

The contents of the system recovery archive always includes all files and directories which are essential to bringing up a functional system. This “essential” list is pre-defined by `make_net_recovery`. You can run `make_net_recovery` in its interactive mode to review the directories and files which make up the “essential list,” and also 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`, see the *make_net_recovery* (1M) manpage or Chapter 11 of the *Ignite-UX Administration Guide*.

Save Configuration Files

If you are planning to cold-install HP-UX 11i v1.6 on a system that already has HP-UX installed, be sure to save the files that you will want to re-install. These include a number of configuration files in `/etc`, the contents of `/usr/local`, any local home directories (that is, those you do not import from another system), and any configuration files located in the `/opt` directories for installed software.

If multiple users are preparing for the cold-install, you might consider creating a directory (such as `/backup`) on another system. *Do not create this directory on your root disk.* 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:

- Step 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/.
```

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

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

HP-UX 11i v1.6 Selectable Drivers

The only supported drivers for HP-UX 11i v1.6 are PCI drivers; no other drivers are supported.

Table 2-3 **HP-UX11i v1.6 Selectable Drivers**

Driver	Description	Supported I/O Adapters
FibrChanl-00	PCI FibreChannel adapter	A6795A
GigEther-00	PCI Gigabit Ethernet	A4926A/A4929A, J1642AA
GigEther-01	PCI Gigabit Ethernet	A6825A, A6794A, A6847A, A8685A
scsiU320-00	PCI SCSI U320	Core I/O

Locating Source Media and Codewords

Now that you have backed up your system and important data files, and you have decided how to cold install to HP-UX 11i v1.6, you need to locate the source media needed for the cold install:

- **If you are cold installing one system at a time** — Cold install directly from the DVDs in the HP-UX 11i v1.6 media kit:
 - **HP-UX 11i v1.6 DVD** — Boot and install a new system.
 - **HP-UX Application DVDs** — Install applications not installed with the OE or install a newer version of an OE application. Some applications installed with an HP-UX 11i v1.6 OE may be older versions than those available on the HP-UX Applications DVDs supplied in the media kit. Products available on Application DVDs are listed in the `TABLE_OF_CONTENTS` file on each DVD.
- **If you plan to cold install on many systems in your enterprise** — We recommend using an Ignite-UX server to create a “golden image” from which to cold install. This install image can contain the OS and OE, other applications, and any needed patches. Once the archive is in place, either on the Ignite-UX server or on another system, cold install on each client system is a single-pass operation; you will only need to reboot each client once.

For details on installing an Ignite-UX server, see the *Ignite-UX Administration Guide*, supplied on the Instant Information CD and on this web site:

<http://docs.hp.com/hpux/os/11iV1.6>

Codewords

You can obtain a codeword for a purchased product by calling 1-800-538-1733.

The Next Step

You have completed the pre-cold install review and tasks:

- “Introduction” on page 33
- “Is Your System Already Running HP-UX 11i v1.6?” on page 34
- “Cold-installing HP-UX 11i v1.6” on page 35
- “Identifying Model, OS/OE, and Software” on page 37
- “System Configurations” on page 39
- “Supported Servers and Workstations” on page 40
- “Mass Storage Drivers and SCSI Devices” on page 41
- “System and Cold-Install Requirements” on page 42
- “Updating Your Ignite-UX Server” on page 48
- “Installing Online Diagnostics” on page 49
- “Planning Your Disk Space Needs” on page 42
- “Collect Key Install Information” on page 51
- “Backing Up Your System” on page 52
- “Save Configuration Files” on page 54
- “HP-UX 11i v1.6 Selectable Drivers” on page 55
- “Planning your HP-UX 11i Version 1.6 Install” on page 36
- “Locating Source Media and Codewords” on page 56

Continue with the next chapter:

- Chapter 3, “Installing HP-UX 11i Version 1.6,” on page 59

Preparing for Cold Install
The Next Step

3 Installing HP-UX 11i Version 1.6

This chapter describes installing HP-UX 11i Version 1.6:

- **Before You Begin:** You should have already completed the pre-cold install tasks in Chapter 2, “Preparing for Cold Install,” on page 31.
- “Reviewing the cold-install process” on page 60: Helps you become familiar with the options to cold-install.
- “How to Install HP-UX 11i Version 1.6” on page 62: Provides the step-by-step instructions.
- “Retrieving Information After Cold-installing” on page 68: Explains how to retrieve the information you previously saved onto another system or tape.
- “The Next Step” on page 70: Directs you to Chapter 4, “Verifying System Installation,” on page 71.



To complete the steps in this chapter, we estimate you require 2-3 hours, depending upon the system, and if you are installing the OS or an OE. Please note that your time may vary.

CAUTION

The cold-install process overwrites everything on the root (/) disk. Make sure you completed backups in “Backing Up Your System” on page 52.

Reviewing the cold-install process

This section describes cold-installing from the HP-UX 11i v1.6 DVDs, including the operating system, a selected operating environment (OE) bundle, network drivers, CDE language bundle, and diagnostics.

The overall process is shown in Figure 3-1 on page 61, along with alternate methods of cold-installing HP-UX 11i v1.6:

Alternate install methods

- Installing from software 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, see the *swinstall* (1M) manpage and *Software Distributor Administration Guide* and *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.
- 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 “Verifying System Installation” on page 71.

Mission Critical Support

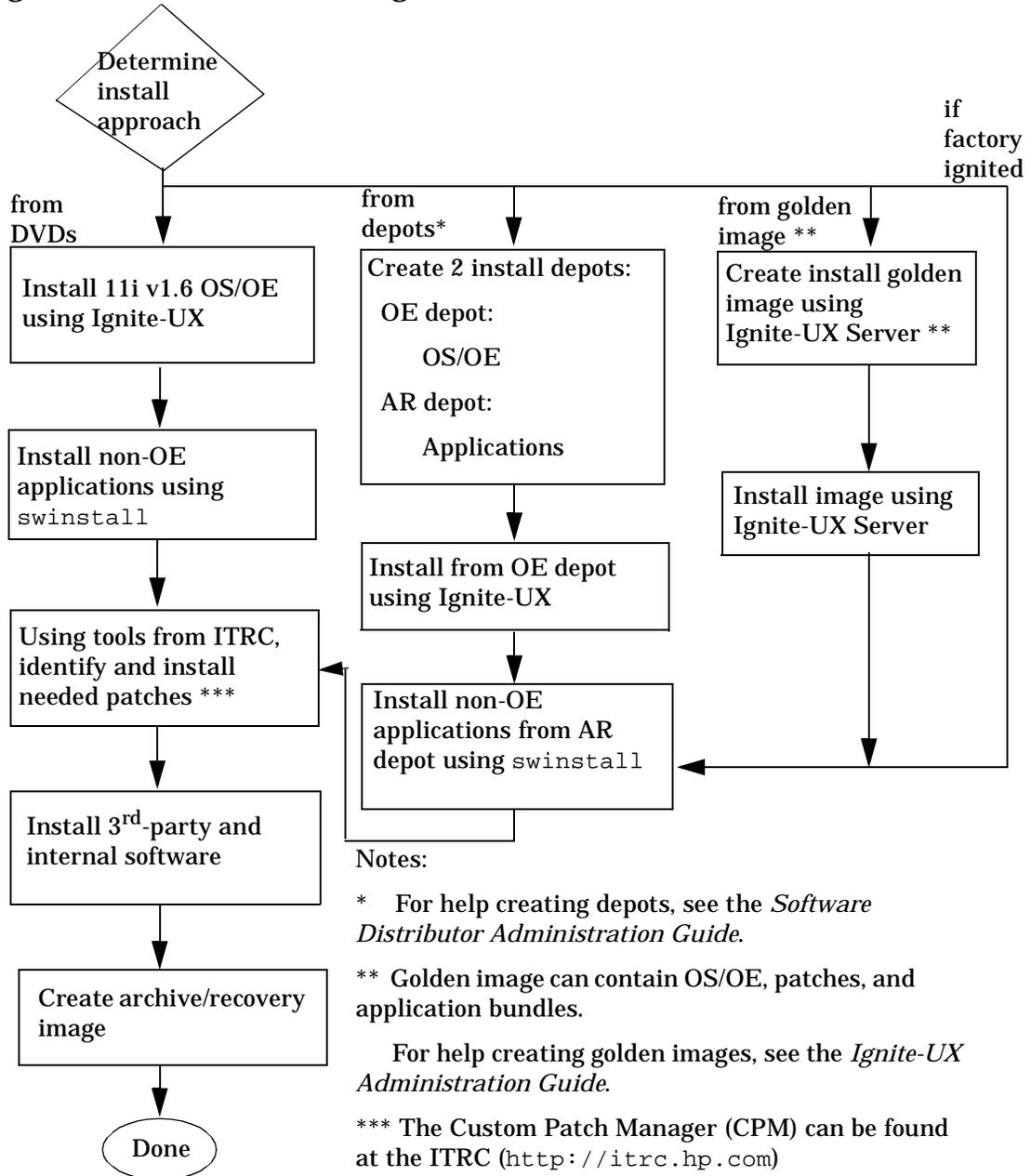
If your system is on HP Mission Critical Support, discuss the proper method of installing and patching the OE with your HP Customer Engineer.

Required media

Have these DVDs ready from the HP-UX 11i v1.6 media kit:

- **HP-UX 11i v1.6 DVD**
- **HP-UX 11i v1.6 Applications DVD**

Figure 3-1 Cold-installing HP-UX 11i v1.6



How to Install HP-UX 11i Version 1.6

To cold install the operating system, use the following steps. Please note that cold installing overwrites everything on the target disk. You should review the Appendix B, “Known Problems and Troubleshooting,” on page 99 to see if any installation issues apply to your system.

- Step 1.** Make sure any external devices connected to the target system are turned ON and operational.
- Step 2.** Insert the HP-UX 11i Version 1.6 DVD into the drive.
- Step 3.** Turn the system ON, reboot, or cycle power. The system should boot automatically from the DVD.
- If the system boots automatically, go to step 4.
 - If the system does not boot automatically, it goes to the boot menu. It is a timed menu; press any key to stop the timer. Then, you can run the install manually from the EFI shell using the following steps:
 - a. From the boot menu, select `EFI Shell (Built In)`.
 - b. The list of devices displays automatically, and the install process selects the device for you.
 - c. If the device is not automatically selected, select the device name for the CDROM and then execute `install`. For example, from the EFI shell prompt:

```
Shell> fs1:  
fs1:\> install
```
- If you don't see CDROM device, use the `map` command to list all device names from the EFI shell prompt.
- Step 4.** Once the kernel has booted, it scans the system for I/O devices.
- Step 5.** Continue with the next section.

Continue Install with Ignite-UX Program

The system now displays the Ignite-UX welcome screen for the HP-UX installation process. If you have used Ignite-UX on PA systems, the remaining procedures will be familiar to you.

- Step 1.** Take a moment to 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 space-bar 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.
- Step 2.** Select **Install HP-UX** to begin interacting with the Ignite-UX (cold-install) program.
- Step 3.** From the **User Interface and Media Options** screen, choose the degree of customizing needed to configure the installation. The default setting under **Source Location Options** (Media only installation) is correct for installing from a DVD.

Three choices are shown in **User Interface Options**:

- **Guided Installation** provides tutorial information and limited choices for inexperienced Ignite-UX users.
- **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 services, file-system characteristics, and other configuration details.
- **No User Interface** Use all the defaults and GO.

Ignite-UX permits you to exit from **Guided Installation** and restart the configuration using **Advanced Installation** later by either selecting the **Cancel** button or pressing **C**. Mark your choices and select **OK**.

NOTE The remaining steps take you through the **Guided Installation**. For help, consult the Help screens. For more help on using **Advanced Installation**, see the *Ignite-UX Administration Guide*.

Continue with Guided Installation

- Step 1.** You are now at the first step of the Install HP-UX Wizard: Select an overall system configuration. Accept the default option: HP-UX B.11.22 Default.
- Step 2.** Select a system environment. In this step you will choose the type of Operating Environment that will be installed on your system. Press **Enter** to view the choices.

For Technical Computing OE media, the choices are:

```
x Environments: [HP-UX 11i TCOE-64bit  ->] (HP-UX B.11.22) x
x                   HP-UX 11i MTOE-64bit                   x
x                   HP-UX 11i Base OS-64bit                 x
```

For 11i OE media, the choices are:

```
x Environments: [HP-UX 11i OE-64bit    ->] (HP-UX B.11.22) x
x                   HP-UX 11i Base OS-64bit                x
```

For Minimum Technical media, the choices are:

```
x Environments: [HP-UX 11i MTOE-64bit  ->] (HP-UX B.11.22) x
x                   HP-UX 11i Base OS-64bit                x
```

- Step 3.** Select a root disk. In this step you will choose the disk that will house your root filesystem. If you are unsure of what to choose, keep the default selection which has been calculated by the install program. Press **Enter** to view the choices.
- Step 4.** Specify the amount of root swap space. 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. Press **Enter** to view the choices.

Step 5. Select file system type. The default value chosen by the install program is recommended. Press **Enter** to view the choices.

```
x Install HP-UX wizard: Select a file system type           x
x                                                         x
x Now that you have made your root swap selection, you     x
x need to choose which type of file system you would like x
x to use. The current choice displayed in the selector is  x
x recommended. If you are unsure of what to choose, keep  x
x the default selection. You may then safely proceed to   x
x the next step.                                         x
x -----x
x                 x VERITAS Volume Manager (VxVM) with VxFS x
x                 x Whole disk with VxFS                    x
x File System: [x Logical Volume Manager (LVM) with VxFS] x
x -----x
x                                                         x
x [ < Back ] [ Next > ] [ Cancel ] [ Help ]                x
x                                                         x
x -----x
```

NOTE

If you select VxVM, the root disk can not 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. Specify number of disks in the root group. In this step you will specify how many disks you want placed into the root disk volume group and whether or not you would like the disks to be striped. (The HP-UX Install Wizard describes these features in depth.)

Step 7. Select language(s). Browse the available languages, marking the desired selections.

Step 8. Select additional software. In this step you may select any additional software which you would like loaded onto your system. Browse the list, marking your selections, then continue to the next step.

Step 9. Pre-Install disk information, Step 1. There are two steps involved in the pre-install checks. The first is to identify which disks will be overwritten 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.** Pre-Install check information, Step 2. The second step in the pre-install check is to review any errors or warnings. Warnings are simply informational. If there are any errors, they will need to be resolved before the installation can continue.
- Step 11.** System summary. At this point you have successfully defined your system. Use the Show Summary button to view a summary of how your system will be configured. If you see any problems, or wish to change any of your selections, feel free to back up to the appropriate step, and make the needed changes. Otherwise, select **Finish** (at the bottom of the tabs). You have the chance to **Cancel** at this time. If you cancel, you return to the previous configuration screen.
- Step 12.** Next, the installation will begin with filesets being copied from the media to the hard disk. The system will automatically reboot during the installation process.
- Step 13.** Depending on how you set up your parameters, the system will either set basic network configurations automatically, or will call the `set_parms` command after it has rebooted to allow you to set the root password, date and time, time zone, IP address, and additional network parameters.
- If `set_parms` is executed, then the “Welcome to HP-UX” screen will be displayed.
- Step 14.** In order to use a keyboard on this interface, you must specify a language mapping which will be used by X Windows and the Internal Terminal Emulator (ITE). Choose the appropriate language. For English, select number 26.
- Step 15.** At this point, you will need 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. If you completed the pre-install data collection tables in Appendix A, “Data Collection Tables,” on page 95, you have all the information you need for `set_parms`, so answer Y for yes.
- Step 16.** Enter the basic network information that you collected in Appendix A, “Data Collection Tables,” on page 95 on the screens that follow.
- Step 17.** Confirm your choices. Congratulations! You are now finished with the install procedure and will be given the opportunity to log in to the system as root.
- Step 18.** Log in to the system.

Step 19. After the cold install, store the HP-UX DVDs in a safe place. You may need them to install drivers or other software later.

Retrieving Information After Cold-installing

After completing the cold-install, you can retrieve the information you had previously saved onto another system. Here are some tips:

Create a new root directory Consider creating a root home directory that is not /. 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. This is especially important if you are using LVM and /home is a separate volume.

Step 1. From the CDE login screen, select **Options** -> **Command Line Login** and login as root.

Step 2. Except on trusted systems, edit /etc/passwd to change the home directory from root to /homeroot and save it.

Step 3. Create the /homeroot directory:

```
mkdir /homeroot
```

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

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

Step 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, see either the *Managing Systems and Workgroups: A Guide for HP-UX System Administrators* or the *Managing Superdome Complexes*.

The commands above will not write over newer files, so your new operating system and any files you update are well protected.

The Next Step

You have completed the cold install process:

- “Reviewing the cold-install process” on page 60
- “How to Install HP-UX 11i Version 1.6” on page 62
- “Retrieving Information After Cold-installing” on page 68

Continue with the next chapter:

- Chapter 4, “Verifying System Installation,” on page 71

4 Verifying System Installation

This chapter provides steps to verify that your system is ready and back in production.

- **Before You Begin:** You should have already completed Chapter 3, “Installing HP-UX 11i Version 1.6,” on page 59.
- “Verifying the HP-UX Installation” on page 72: Shows you how to verify that the HP-UX installation worked correctly.
- “Verifying HP-UX Applications” on page 74: Explains how you can update HP-UX software.
- “Changing the State of HP-UX Installed Patches” on page 75: Helps you check and change the state of patches on the system.
- “The Next Step” on page 77: You are ready to start Chapter 5, “Installing Patches and Applications,” on page 79.



To complete the steps in this chapter, we estimate you require 2-3 hours to verify the HP-UX installation, applications, and patches. Please note your time may vary.

TIP

This chapter provides verification information for the HP-UX installation, applications, and patches. To check other software patches and applications, please refer to the appropriate vendor documentation.

Verifying the HP-UX Installation

To verify that HP-UX 11i v1.6 was installed successfully, use the Software Distributor commands `swlist` and `swverify`.

Start Task

1. Run `swlist` to list all products, bundles, and filesets on the system:

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

options: `-l product` and `-l fileset`

For a cold install, compare your list with the list of software products in the `TABLE_OF_CONTENTS` files on the HP-UX 11i v1.6 Operating System DVD and on the Applications DVD.

2. Run `swverify` to verify that each bundle is intact. Several examples follow:

- To verify that an installed English 64-bit OS is intact, enter the command:

```
/usr/sbin/swverify HPUXBase64
```

- To verify all HP software on your system, enter the command:

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

The Selection process locates all required filesets for the product. After the list, the following message displays:

```
* Selection succeeded.
```

Then, the Analysis process verifies that each required file is loaded (existence and revision), all required dependencies are met, and runs any available verification scripts for the product. After the analysis, the following message displays:

```
* Analysis succeeded.
```

If the analysis fails, either view `/var/adm/sw/swagent.log` to review the analysis log or run the `swjob...` command listed at the end of the `swverify` report sent to `stdout`.

```
* Verification succeeded.
```

TIP

For help with these commands, see the *swlist* (1M) and *swverify* (1M) manpages, and the *Software Distributor Administration Guide*, which is available on the Instant Information CD or the web:

<http://docs.hp.com/hpux/os/11iV1.6>

Verifying HP-UX Applications

To verify that all required HP-UX applications have been installed, you should have already tried the Software Distributor commands `swlist` and `swverify`, as explained in the previous section.

For example, to verify that the HP-UX 11i v1.6 default operating environment is intact on your system, enter the command:

```
/usr/sbin/swverify HPUX11i-OE
```

However, if you get an error like this, then the indicated software (*xyz*) was not updated:

```
The product "xyz,l=/,r=B.xx.xx" is not compatible with this system's architecture or operating system.
```

Start Task

To update the HP-UX software, do the following:

1. Mount the HP-UX Applications DVD that contains the software.
2. Go to Chapter 5, "Installing Patches and Applications," on page 79 to install or update the new version using the `swinstall` command.
3. Use the application; this is the best way to verify the application's operation.

Open each application, view a working document or project, and perform typical production operations such as editing a file and printing a report. If the application does not work as expected, see the application's release notes and documentation to determine the problem.

Changing the State of HP-UX Installed Patches

The `swinstall` utility permits the installation of multiple patch bundles with a deferred configuration. Some of these patch bundles may contain superseded patches that do not get configured.

After executing `swverify *` on your system, these patches show an “installed” software state in the `swagent.log` file. This “installed” software state is not treated as a warning or error by `swverify`.

The “installed” patches may present a problem when the current “applied” patch is removed using `swremove`. The `swremove` command does not detect or configure a superseded patch with an “installed” software state.

Start Task

Follow these steps to check the state of patches currently applied to your system:

1. List the “SD software state” and “patch state” of both superseded patches and active (or applied) patches on your system:

```
/usr/sbin/swlist -a state -a patch_state <patch_number>
```

For example, the above `swlist` options may show some differences between an older (superseded) patch and the current (applied) patch on your system.

To list all patches, use the command:

```
/usr/sbin/swlist -a state -a patch_state PH*
```

NOTE

Superseded patches left in an “installed” SD state do not cause any problems, but they require an extra `swconfig` step when they become the current “applied” patch.

2. HP recommends that you configure a current “applied” patch in the “installed” SD state with the following command:

```
/usr/sbin/swconfig <patch_number>
```

CAUTION

This problem only exists when an active patch is removed and rolled back to a superseded patch left in an “installed” state. Executing `swconfig` on a patch in the “superseded” patch state is dangerous; do not do it.

3. Use the following options to list active products, patches, and states:

```
swlist -l fileset -a state -a patch_state
```

The previous `swlist` options will display all active (non-superseded) filesets with their “SD software state” and “patch state” attributes.

You can change `swlist` to display superseded patches by adding the following line to the `/var/adm/sw/defaults` file:

```
swlist.show_superseded_patches=true
```

or you can use the following command to display superseded patches:

```
swlist -l fileset -a state -a patch_State -x \  
swlist.show_superseded_patches=true
```

TIP

For help with these commands, see the *Software Distributor Administration Guide*, which is available on the Instant Information CD and on the web:

<http://docs.hp.com/hpux/os/11v1.6>

The Next Step

You have completed the verification process:

- “Verifying the HP-UX Installation” on page 72
- “Verifying HP-UX Applications” on page 74
- “Changing the State of HP-UX Installed Patches” on page 75

Continue with the next chapter:

- Chapter 5, “Installing Patches and Applications,” on page 79

Verifying System Installation
The Next Step

5

Installing Patches and Applications

This chapter describes how to install HP-related patches and non-OS HP applications:

- **Before You Begin:** You should have already completed Chapter 4, “Verifying System Installation,” on page 71.
- **“Keeping Up to Date with the Latest Critical Patches”** on page 80: You should check on a regular basis to see if HP has released any new, critical patches.
- **“Installing OS Patches Required by Individual Applications”** on page 82: Helps you to determine and install new application patches, if necessary.
- **“Tips for Installing or Updating HP Applications”** on page 85: Outlines how you to update HP, non-OS applications on your system.
- **“How to Backup the System”** on page 89: Reminds you to create a final backup of the new HP-UX 11i v1.6 system.
- **“The Next Step”** on page 90: Directs you to the final Chapter 6, “Configuring and Maintaining HP-UX 11i v1.6,” on page 91.



To complete the steps in this chapter, we estimate you require 1-2 hours per patch and 1-2 hours per application. Time per patch is reduced if you download and install multiple patches in a single session. Please note your time may vary.

TIP

This chapter provides installation information for HP-related patches and applications only. To install or upgrade other vendor patches and applications, please refer to the appropriate vendor documentation.

You can find the complete list of applications included in the HP-UX 11i v1.6 release in the HP Application Availability Matrix:

<http://www.software.hp.com/MATRIX>

Keeping Up to Date with the Latest Critical Patches

After you installed HP-UX 11i v1.6, you will have the latest critical patches installed on your system that shipped with the media.

However, other recommended critical or required patches may have become available after the initial release of the media. You should check on a regular, proactive basis to see if Hewlett-Packard has released any new, recommended critical patches.

HP-UX Patching Resources

You should install any *additional* recommended critical or required patches to your base OS and applications which may have occurred since the initial HP-UX 11i v1.6 install media was produced.

Use Custom Patch Manager You can identify and download all needed patches for your system by using HP's Custom Patch Manager:

<http://itrc.hp.com/wps/bin/doc.pl/sid=00f2dea61cb1fc364e>

NOTE Use of CPM requires a current support contract or it may be used on a fee-per-use basis.

If you are already registered, log in with your user ID and password. If you are not registered, follow the instructions on the screen. Remember to save your user ID and password.

CPM will identify recommended patches for your system and all required dependencies. Once you have downloaded needed patches, install them using the `swinstall` command, as explained in "Installing OS Patches Required by Individual Applications" on page 82.

Downloading individual patches When you need to find and download a single patch, use HP's Patch Database. Begin at HP's IT Resource Center web site:

<http://itrc.hp.com>

From the home page, select **individual patches**.

If you are already registered, log in with your user ID and password. If you are not registered, follow the instructions on the screen.

From the **patch database main** page, select **HP-UX** and use the search tool to find required patches and download them. You may download patches individually or as a group. All dependent patches will also be identified. Once you have downloaded needed patches, install them using the `swinstall` command as explained in “Adding HP-UX patches to a Software Depot or system” on page 83.

HP Security Bulletins & Security Patch Check Tool

To keep informed on newly identified security patches, HP Security Bulletins are e-mailed periodically to announce critical patches for your system. To subscribe, go to HP's IT Resource Center:

<http://itrc.hp.com>

Select: **Maintenance and Support -> Support Information Digests**

Security patch check is a tool available for identifying security patches applicable for your system. For more information on security patch check, go to the web:

http://www.software.hp.com/cgi-bin/swdepot_parser.cgi/cgi/displayProductInfo.pl?productNumber=B6834AA

Other HP-UX Patching Resources

If you are not familiar with patching HP-UX, documents in the **Patch Management** section of HP's documentation web site may be helpful.

<http://docs.hp.com>

Go to the operating system or environment version and then search for patch management.

General guidelines for patching HP-UX are provided in the HP-UX Software Transition Kit:

<http://devresource.hp.com/STK/hpuxpatch.html>

Also see “Managing Patches” in the *Software Distributor Administration Guide*.

Installing OS Patches Required by Individual Applications

If the operating system requires any new HP-UX patches, you can do the following:

- Determine the list of HP-UX patches prior to cold install
- Obtain the newer HP-UX patches
- Get the HP-UX patch information
- Remove HP-UX patches, if necessary
- Add newer HP-UX patches, if necessary
- Keep up to date with the latest critical patches

Determining the list of previous HP-UX patches

New or replacement patches may be required as dependencies for application software installed on your system. Before removing a patch or a patch bundle, determine the dependencies required by the installed software. You can find this information in the release notes for the products and the readme files for the patches. If necessary, you may have to remove some installed software from your system.

Obtaining newer HP-UX patches

To obtain newer patches, see the “HP-UX Patching Resources” on page 80.

Getting HP-UX patch information

For information on individual patches in a patch bundle, use *swlist* (1M) to list the `readme` attribute at the product level.

Start Task

1. From the depot, log in as root and enter the command:

```
/usr/sbin/swlist -s /temp/depot_name -l product -a readme  
patch_name
```

2. From your system, enter the command:

```
/usr/sbin/swlist -l product -a readme patch_name
```

Removing HP-UX patches

To remove any patches from your system, you must first determine which patches are installed.

1. To display installed patches, enter the command:

```
/usr/sbin/swlist -l patch \*.\*,c=patch
```

2. To preview the removal analysis, enter the command:

```
/usr/sbin/swremove -p patch_name1 patch_name2 ...
```

3. You must interpret patch dependencies manually from the patch documents, that is, the *patch_name.txt* files.

CAUTION

In rare cases, you may have to remove a patch from your system. Generally, a newer patch should just be installed over a superseded patch. You should take extreme caution before ever removing a patch from your system. Always check for patch dependencies before attempting to remove any patch. The `swremove` will not do automatic patch dependency checking for you like the `swinstall` command does.

Adding HP-UX patches to a Software Depot or system

For help on adding patches see the *Software Distributor Administration Guide*, which is available on the Instant Information CD and on the web:

<http://docs.hp.com/hpux/os/11v1.6>

General guidelines for patching HP-UX are provided in the HP-UX Software Transition Kit:

<http://devresource.hp.com/STK/hpuxpatch.html>

The following instructions are a general review of installing patches; see the “HP-UX Patching Resources” on page 80 for more information.

Start Task

If you are already running an HP-UX 11i v1.6 system, you can run `swinstall` interactively and see the contents of the depot online:

1. On the system, run `swinstall` interactively:

```
/usr/sbin/swinstall
```

2. Highlight the patch bundle to select it, or individual patches and press Return. This opens the patch bundle to the product level.
3. For any given product (shown as a patch number):
 - a. Highlight the product line to select it.
 - b. Select Actions -> Show Description of Software. This generates a Software Description Dialogue box.
 - c. From the Software Description Dialogue box, select Readme. This generates the Readme Viewer Dialogue box, through which you can scroll to find the following:
 - Affected filesets
 - Reboot requirement for the patch
 - Category tags used to create the patch
 - Symptoms the patch addresses
 - Description of the defect being fixed
 - Patch files and dependencies
 - Instructions for installing an individual patch
4. To find out which patches are in a specific category tag, use `swlist`. For example, to list the patches (by product name) for all patches categorized as hardware enablement, enter the command:

```
/usr/sbin/swlist -d -l product *,c=hardware_enablement \  
@ host:depot
```

TIP

Each patch comes with installation instructions and in some cases “special installation” instructions. For example, when installing patches, it is recommended that certain SD options be selected so that only patches applicable to the target system are loaded.

Tips for Installing or Updating HP Applications

In the previous chapters of this guide, you installed HP-UX 11i v1.6, installed additional patches if necessary, and verified the system. Now you should install and/or update other needed HP, non-OS applications. Here are some tips:

- To determine which products and versions are on your system use the `swlist` command:

```
/usr/sbin/swlist -l product
```
- 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. This ASCII file is viewable with `vi` or `emacs`, and Wordpad on PCs.
- To verify that all installed products are compatible with the new OS, run `swverify` as explained in “Verifying the HP-UX Installation” on page 72.
- Use `swinstall` to install new software or update each application not included in the HP-UX 11i v1.6 OS and OE you just installed. The latest versions of many HP-UX software products are provided on the HP-UX Applications DVD. To find the contents of each DVD, mount any HP-UX Applications DVD and view the `TABLE_OF_CONTENTS` file. For `swinstall` instructions, see the next section.
- Installation of application patches and applications may occur in the same `swinstall` session to save on the number of required reboots.
- For HP applications, there exists documentation that shows you how to install and use an application. The documents may include release notes, readme files, DVD and CD booklets, white papers, and guides. See the Instant Information CD and the web:

<http://docs.hp.com>

How to Install Optional Software Products

The Applications DVD that is distributed with HP-UX 11i v1.6 contains optional development tools and system management software.

HP-UX 11i v1.6 must be booted in order to install optional software products. The following is the procedure for installing products from the Applications DVD.

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

Step 2. Mount the Applications DVD.

To install software from the Applications DVD, you must mount the DVD as a filesystem that HP-UX 11i v1.6 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 will use as an access point for the DVD. Often a `/CDROM` directory is used. If this directory does not exist, create it using the `mkdir /CDROM` 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 `/CDROM` directory.

```
mount /dev/dsk/c1t0d0 /CDROM
```

See the `mount` (1M) manpage for details.

Step 3. Use `swinstall` to install software from the Application DVD.

The following example command runs `swinstall` to install software from the source mounted at `/CDROM`.

```
swinstall -i -s /CDROM
```

See the `swinstall` (1M) manpage for details.

Step 4. Select and install software from the Applications DVD.

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

Step 5. Unmount and eject the Applications DVD.

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

Use the `umount` command to unmount the DVD. For example, `umount /CDROM` will unmount the `/CDROM` filesystem. See the *umount* (1M) manpage for details.

Using Ignite-UX

You can use the Ignite-UX utility to install HP-UX applications on systems using a local mount directory, or over a network using an Ignite-UX server. Ignite-UX is an HP-UX product that facilitates installing and configuring HP-UX systems.

See the *Ignite-UX Administration Guide* for detailed instructions on how to install HP-UX applications. It is on the Instant Information CD and on the web:

<http://docs.hp.com/hpux/os/11v1.6>

Ignite-UX can address your need to perform system installations and deployment, often on a large scale. With Ignite-UX, you can do the following:

- Create and reuse standard system configurations.
- Archive a standard system configuration and use that archive to replicate systems in far less time than with other methods.
- Create customized processes to allow interactive and unattended installs.
- Recover OS and applications more easily after crashes and hardware failures.

For example, you can install the Ignite-UX utilities to install HP-UX and applications on other systems:

1. Mount the HP-UX 11i v1.6 DVD containing Ignite-UX (mount point is assumed here to be `/cdrom`) and enter the command:

Tips for Installing or Updating HP Applications

```
/usr/sbin/swinstall -s /cdrom B5725AA
```

2. After installing the software, see the Ignite-UX release notes and *Ignite-UX Administration Guide* to complete any post-install steps and configuration.

After running an Ignite-UX install session, you have a working HP-UX client system.

How to Backup 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.

You can use the Ignite-UX product for making a system recovery backup. See the *Ignite-UX Administration Guide*:

<http://docs.hp.com/hpux/os/11iV1.6>

Depending on your work environment, you can use the following commands:

- `fbackup` and `frecover` to create a backup archive and `frecover` to restore the system, if necessary
- Ignite-UX commands: `make_net_recovery`

NOTE

You cannot use `make_tape_recovery` and `make_recover` with HP-UX 11i v1.6. The `make_net_recovery` command is available.

The Next Step

You have completed the additional install and back-up processes:

- “Keeping Up to Date with the Latest Critical Patches” on page 80
- “Installing OS Patches Required by Individual Applications” on page 82
- “Tips for Installing or Updating HP Applications” on page 85
- “How to Backup the System” on page 89

Continue with the last chapter:

- Chapter 6, “Configuring and Maintaining HP-UX 11i v1.6,” on page 91

6

Configuring and Maintaining HP-UX 11i v1.6

This chapter outlines steps on how to configure your system to meet your needs.

- **Before You Begin:** You should have already completed installing and verifying HP-UX 11i v1.6 in the previous chapters.
- “Configuring Your HP-UX 11i v1.6 System” on page 92 provides you with a list of resources about more common configuration tasks that you may want to perform.
- “Maintaining Your HP-UX 11i v1.6 System” on page 94 provides you with an overview of how to maintain your HP-UX 11i v1.6 system.



To complete the steps in this chapter, we estimate you require 2-4 hours to configure the system while the time to maintain your system is ongoing. Please note that your time may vary.

Configuring Your HP-UX 11i v1.6 System

Now that you have installed HP-UX 11i v1.6, and installed any additional software and patches, your next task is to configure your system. Many of these tasks can be found in *Managing Systems and Workgroups: A Guide for HP-UX System Administrators*.

The following list breaks these tasks in to several categories to assist you in finding the information you need:

- **Networking and Connectivity**
 - Manually setting system information: Use the `set_parms` command to configure your system's hostname, IP Address, DNS, and other network and system data. For more information about `set_parms`, see the "Making Adjustments" section in Chapter 3, "Configuring a System" of the *Managing Systems and Workgroups: A Guide for HP-UX System Administrators* book, or the `set_parms` (1M) manpage.
 - Configuring Built-in PCI Networking: Depending on the type of network interface your system has, see the following documents on <http://docs.hp.com>:
 - Ethernet (10/100Base-TX): *Using PCI 10/100Base-TX/9000*
 - Gigabit Ethernet: *Using PCI 1000Base-T and PCI 1000Base-SX (Gigabit Ethernet)*
 - Configuring a LAN: If you plan to manage a local area network, see *Installing and Administering LAN/9000 Software*
- **File System Administration**
 - Setting Up File Systems: Depending on how you want to manage your physical volumes, choose one of the following:
 - LVM: See the "Administering a System: Managing Disks and Files" in the *Managing Systems and Workgroups: A Guide for HP-UX System Administrators* on <http://docs.hp.com>.
 - VxVM: See the *VERITAS Volume Manager 3.1 Administrator's Guide* on the Veritas web site

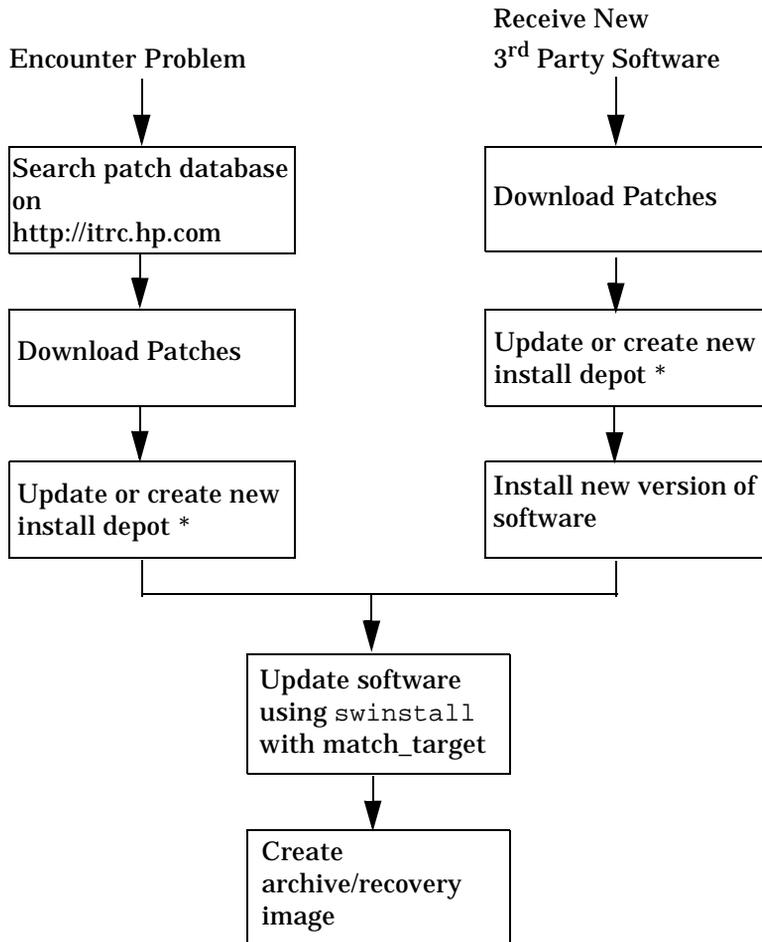
- Network File Systems (NFS): If you want make local directories available to other hosts on the network, see the *Installing and Administering NFS Services* on <http://docs.hp.com>
- **Managing Users and Groups**
 - Adding Users and Groups: See *Managing Systems and Workgroups: A Guide for HP-UX System Administrators* on <http://docs.hp.com>
- **Printers and Peripherals**
 - Printers: See *Managing Systems and Workgroups: A Guide for HP-UX System Administrators* on <http://docs.hp.com>.
 - Peripherals: See *Configuring HP-UX for Peripherals*
- **Other Tasks**

You can find information about other tasks for HP-UX 11i v1.6 at <http://docs.hp.com/hpux/os/11iV1.6>

Maintaining Your HP-UX 11i v1.6 System

The following flowchart offers a recommended method for maintaining your HP-UX 11i v1.6 system using HP's software support services.

Figure 6-1 **Reactive Software Maintenance**



* For help creating depots, see the *Software Distributor Administration Guide*. Depots can contain applications from the HP-UX Application DVDs.

A Data Collection Tables

When installing HP-UX 11i v1.6, you need to enter information in the Network Data and Miscellaneous Data collection tables.

- If you chose the Guided Install, the HP-UX Install Wizard prompts you for the data in these tables at various stages during the install.
- If you chose the Advanced Install, an interface gives you the opportunity to enter all of this data at the beginning of the install. The interface is a tabbed file-folder and character-based.
- If you choose to network-enable your system, you must designate a unique host name, host Internet Protocol (IP) address, and other network information for your server or workstation.

Talk to your site network administrator for those details to include in these tables.

Network Data Collection Table

The following Network Data collection table provides HP-UX commands that you can use after the install to confirm specific information.

Table A-1 **Enter Network Data**

Type of Data	Enter Your Specific Data	HP-UX command to confirm data after system is up and running
Host Name		<code>uname -n</code>
Host IP Address		<code>nslookup name</code>
Subnet Mask		<code>grep SUBNET_MASK /etc/rc.config.d/netconf</code>
Default Gateway IP Address		<code>netstat -r</code>
Domain Name		<code>cat /etc/resolv.conf</code>
DNS IP Address		<code>cat /etc/resolv.conf</code>
NIS Domain Name		<code>grep NIS_DOMAIN /etc/rc.config.d/namesvrs</code>

Miscellaneous Data Collection Table

The following Miscellaneous Data collection table may contain some items that are not familiar to you, but they are all questions that you will be asked during the install.

The install process describes all options in detail, so you can defer making decisions about those items unfamiliar to you until you reach that point in the install.

Table A-2 Enter Miscellaneous Data

Type of Data	Enter Your Specific Data
Type of Desktop	
Root DiskPath	
Root Swap Space	
Filesystem Type LVM, VxVM w/VxFS, or Whole disk with VxFS	
Root Disk Volume Group Disks (How many disks you want placed into the root disk volume group and whether or not you want the disks to be striped?)	
Select additional software (All, HP-UX Additions, Uncategorized)	
Pre-Installed Disk Information (Is overwritten during the install disk, see Root Disk Path) This is a "review" confirmation step.	

Data Collection Tables

Miscellaneous Data Collection Table

B Known Problems and Troubleshooting

This appendix includes the following topics:

- “Install Known Problems” on page 100
- “Common Install Error and Warning Messages” on page 102
- “Problems Configuring HP-UX 11i v1.6” on page 106
- “Un-installing HP-UX 11i v1.6” on page 109
- “Problems Affecting non-C Locales” on page 110.

As the HP-UX 11i v1.6 install progresses, you will see messages relating to the progress being entered into the log file. These messages usually refer to normal behavior. The `ERROR`, `WARNING`, and `NOTE` messages, however, have the following significance:

<code>ERROR</code>	Indicates a serious problem, usually requiring action from you in order to proceed with an installation.
<code>WARNING</code>	Indicates something out of the ordinary, but <i>not</i> fatal. The warning <i>may</i> require action from you.
<code>NOTE</code>	Indicates something out of the ordinary, but <i>not</i> fatal. The note <i>does not</i> require action from you.

Install Known Problems

The following problems are known to occur in the HP-UX 11i v1.6 release.

HP CIFS Server product

The HP CIFS Server cannot update the Unix password if any of the Unix username characters are uppercase. If the 'unix password sync' configuration is enabled, so that when the Windows client changes its password, the CIFS Server will attempt to change the Unix password in the `/etc/passwd` file to match the password as set in the CIFS client. The CIFS Server will fail to update the Unix password if the Unix username has any uppercase characters in it.

The solution is to use lowercase characters in the Unix username

NOTE

The new version of the HP CIFS Server A.01.08 is based on Samba 2.2.3a and is available on HP-UX 11i version 1.6 release. Please refer to the HP CIFS Server 2.2a (version A.01.08) Release Notes for new features, known problems and workarounds for this product. The CIFS Server 2.2a (version A.01.08) Release Notes are available in the Networking and Communication Section of the HP document web site:

<http://docs.hp.com>

ONC product

The symbolic link for `/usr/lib/pa20_64/libstraddr.1` is missing for HP-UX 11iv1.6 release on the Itanium-based system. As the result, the PA-64 bit applications that require the NAME-to-ADDRESS translation running on the system will fail.

The solution is before running ONC applications that require the NAME-to-ADDRESS translation, you need to set the symbolic link manually from `/usr/lib/pa20_64/libstraddr.1` to `/usr/lib/pa20_64/libstraddr.so.1` on the system.

We strongly recommend that you manually set the soft link immediately

after installing the HP-UX 11iv1.6 OS on your Itanium-based system to eliminate a problem when you execute 64-bit PA applications. Only 64-bit PA ONC applications use this library.

Use the following command:

```
$ ln -s /usr/lib/pa20_64/libstraddr.1  
    /usr/lib/pa20_64/libstraddr.so.1
```

After executing the command, enter the following command for verification:

```
$ ll /usr/lib/pa20_64/libstraddr*
```

The sample output should appear as follows:

```
-r-xr-xr-x 1 bin bin 14616 Jul 16 12:30  
/usr/lib/pa20_64/libstraddr.1  
lrwxrwxrwx 1 root sys 12 Jul 24 12:44  
/usr/lib/pa20_64/libstraddr.so.1 -> libstraddr.1
```

Known Issues With OE Media Install Tool 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://software.hp.com/products/IUX>

Common Install Error and Warning Messages

The following messages may occur during the HP-UX 11i v1.6 install.

swinstall.log file warning

The cold-install of HP-UX 11i v1.6 produces a warning message within the `/var/adm/sw/swinstall.log` file. This warning is common to all of the HP-UX 11i v1.6 OE installations. The message follows:

```
* Beginning Selection
* "gold15:/": This target does not exist and will be created.
WARNING: The software specified contains a kernel fileset.
        It will be necessary to reconfigure and reboot the system to
        make the kernel software functional.
```

Since products being installed contain kernel objects (kernel filesets), you need to generate a new kernel, otherwise, this warning appears.

CDE DesktopConfig.LITECONFIG Warning

One or more warning messages may be placed in the file: `/var/adm/sw/swconfig.log` during the configure (swconfig) phase of the installation.

```
WARNING: The software specification "CDE-ChineseS" refers to a
bundle (or to a product, subproduct or fileset within a
bundle). Only some of the software specified could be selected.
The messages below show those items which could not be selected
and those items which were selected but generated a warning:
```

```
* Could not apply the software selection

"DesktopConfig.LITECONFIG,r=B.11.22,a=HP-UX_B.11.22_IA/PA,v=HP
"; it is not available from depot or root "gold15:/".
```

This message occurs because DesktopConfig.LITECONFIG is excluded during the installation selection phase due to mutual exclusions with other products in the HPUXBaseOS bundle. Since the product was excluded at installation time, but is part of the CDE bundles, the selection of products at configure time produces these warnings. Multiple instances of this warning with different software specifications may occur.

This message is strictly informational and no action is required.

OpenGLDevKit.OPENGL-xxx Warning

One or more warning messages may be placed in the file:
`/var/adm/sw/swconfig.log` during the configure (swconfig) phase of the installation.

WARNING: The software specification "HPUX11i-TCOE" refers to a bundle (or to a product, subproduct or fileset within a bundle). Only some of the software specified could be selected. The messages below show those items which could not be selected and those items which were selected but generated a warning:

* Could not apply the software selection

```
"OpenGLDevKit.OPENGL-64-CTRB,r=B.11.22.01,a=HP-UX_B.11.22_PA,v=HP";it is not available from depot or root "gold15:/".
```

* Could not apply the software selection

```
"OpenGLDevKit.OPENGL-64-EXPL,r=B.11.22.01,a=HP-UX_B.11.22_PA,v=HP";it is not available from depot or root "gold15:/".
```

...

OpenGLDevKit was not selected for installation because it is a PA-RISC only product and will not install on an Itanium-based system. Since it was not selected for installation but is part of the HPUX11i-MTOE and HPUX11i-TCOE bundle, the selection of products at configure (swconfig) time produces this warning. Multiple instances of the second part of this message may occur, each referencing different software selections beginning with OpenGLDevKit.OPENGL.

This message is strictly informational and no action is required.

SW-GETTOOLS software selections not available

One or more warning messages may be placed in the file:
`/var/adm/sw/swconfig.log` during the configure (swconfig) phase of the installation.

WARNING: The software specification "HPUXBaseAux" refers to a bundle (or to a product, subproduct or fileset within a bundle). Only some of the software specified could be selected. The messages below show those items which could not be selected and those items which were selected but generated a warning:

* Could not apply the software selection

```
"SW-GETTOOLS.PRE-UPDATE,r=B.11.22,a=HP-UX_B.11.22_IA/PA,v=HP";  
it is not available from depot or root "gold15:/".
```

* Could not apply the software selection

```
"SW-GETTOOLS.SD-SUPPORT,r=B.11.22,a=HP-UX_B.11.22_IA/PA,v=HP";  
it is not available from depot or root "gold15:/".
```

* Could not apply the software selection

```
"SW-GETTOOLS.SD2-SUPPORT,r=B.11.22,a=HP-UX_B.11.22_IA/PA,v=HP";  
; it is not available from depot or root "gold15:/".
```

SW-GETTOOLS product is installed as part of the update toolset, which is not supported in HP-UX 11i Version 1.6 (B.11.22). During a cold install, this product is not selected for installation, which results in this warning message.

This message is strictly informational and no action is required.

Obsolete Product Warnings

One or more warning messages may be placed in the file:
`/var/adm/sw/swconfig.log` during the configure (swconfig) phase of the installation.

WARNING: The software specification "HPUXBaseOS" refers to a bundle (or to a product, subproduct or fileset within a bundle). Only some of the software specified could be selected. The messages below show those items which could not be selected and those items which were selected but generated a warning:

* Could not apply the software selection

```
"Obsolete.DISKLESS,r=B.11.22,a=HP-UX_B.11.22_IA/PA,v=HP"; it  
is not available from depot or root "gold15:/".
```

```
* Could not apply the software selection
```

```
"Obsolete.INSTANTIGNITE,r=B.11.22,a=HP-UX_B.11.22_IA/PA,v=HP";  
it is not available from depot or root "gold15:/".
```

A software selection titled “Obsolete.XYZ” is only installed if a system is being updated from one release to the next and is used to remove obsolete products from the system. Because there are no obsolete products to remove during a cold install, these software selections are excluded, generating a warning message.

This message is strictly informational and no action is required.

VxVM Warning

The `install.log` file may contain the following message:

```
* Configure_Disks: Begin  
* Will install B.11.22 onto this system.  
* Starting VxVM  
* Creating VxVM Disk "c2t1d0s2" (0/18/1/0/0.0.1.0).  
* Adding disk "c2t1d0s2" to rootdg.  
* Enabling VxVM  
07/25 18:20:01: vxvm:vxconfigd: WARNING: File  
/etc/vx/array.info doesn't exist.  
Generating file /etc/vx/array.info.
```

This message does not require action. The log file is located at:

```
/var/opt/ignite/local/install.log
```

Problems Configuring HP-UX 11i v1.6

Read these items before installing HP-UX 11i v1.6.

Enabling AutoFS on High Availability Servers Can Cause NFS Packages to be Dropped

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.

How Do You Know This Affects You? You are affected if you enable AutoFS on an HA server.

What To Do 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.

SCSI PCI HBA Documentation Correction

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

In the chapter about installing the adapter, under the heading “Setting the SCSI IDs,” the first paragraph states that if you will be booting the system from a SCSI disk drive on the SCSI bus, you should give that drive the lowest SCSI ID on the bus. *This is not correct.*

The *correct* instruction is as follows:

If you plan to boot your system from a hard disk drive on the SCSI bus, you should assign that drive the *highest priority available* on the bus. A device’s priority is determined by the device’s SCSI ID. The order of the 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. So, a device with SCSI ID 7 has the highest priority, and one with SCSI ID 8 has the lowest. Note that SCSI HBAs should always have the highest priority SCSI ID.

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

You can get a .pdf file of this notice through 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. A link to the .pdf file is in the “technical notes” area at the top right of the page.

Un-installing HP-UX 11i v1.6

If you cannot resolve problems after installing HP-UX 11i v1.6, then you may want to un-install it. The process depends upon the install process you followed:

- Assuming that you have made a `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 Chapter 11 of the *Ignite-UX Administration Guide*, available on the Instant Information CD and on the web:

<http://docs.hp.com>

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

- If your applications and data are on a separate disk from the OS, cold-install the previous OS. 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 Chapter 11 of the *Ignite-UX Administration Guide*.

To determine which 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.

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 may contain differing documentation (the STK tools are identical for both languages). To verify that you have the latest Japanese documentation set, view this web site:

http://devresource.hp.com/STK_ja_JP.SJIS

Restrictions with Netscape Communicator 4.79

The trial version of Netscape Communicator provided with HP-UX 11i OEs has these problems with several Asian locales, including Japanese, Korean and Chinese:

- Asian-character input is not allowed in several dialogs.
- Asian characters are not be displayed properly in some dialogs where a font switch is not available.

Character-code handling with Perl

Although Perl 5.6.1 does not directly support wide characters, its experimental support of Unicode may be your resolution. JPerl 5.005_003 is another solution to handle Japanese multi-byte characters by older version of Perl.

What To Do

Get the patch `jperl5.005_03` and apply it to Perl. This patch is open source and available at a number of non-HP FTP sites.

Follow these steps:

- Step 1.** Get the Perl 5.005_03 source files from: <http://devresource.hp.com>
- Step 2.** Download patch `jperl5.005_03` from an open-source Perl site.
- Step 3.** Apply the patch to the source code, and build it.

NOTE

Once patched with `jperl5.005_003`, Perl cannot be used as `Mod_perl` under the Apache server.

C Web Resources

This appendix lists the many resources on the web:

- Latest HP-UX 11i v1.6 information:
<http://docs.hp.com/hpux/os/11iV1.6>
<http://forums.itrc.hp.com>
<http://www.hp.com>
Local-language user guides:
<http://docs.hp.com>
Select Localized Documentation
- Latest Itanium server and workstation information:
http://www.hp.com/products1/unix/operating/choice/hpux_itanium.html
- Latest information on HP-UX software releases:
<http://www.software.hp.com/RELEASES-MEDIA>
- Latest versions of HP-UX 11i v1.6 documentation including release notes, guides, and white papers:
<http://docs.hp.com/hpux/os/11iV1.6>
- Downloading HP-UX patches and patch information from the HP IT Resource Center web:
<http://itrc.hp.com>
Select the site (americas/asia pacific or european). Select the Maintenance and Support page, then select the appropriate patching tools. To receive HP Security Bulletins, select the Maintenance and Support page, then select Support Information Digests.
- European information:
<http://www.hp.com>
Select a country or region if you are not automatically directed.

- High-availability products:
<http://docs.hp.com/hpux/ha>
- HP-UX Software Transition Kit:
<http://devresource.hp.com/STK>
- HP Technical Documentation feedback form:
<http://docs.hp.com/assistance/feedback.html>
- Ignite-UX information and download:
<http://software.hp.com/products/IUX>
- Safety and ergonomic information:
<http://www.hp.com/ergo>
- Software Distributor:
http://software.hp.com/products/SD_AT_HP
- System administration for HP-UX systems:
<http://docs.hp.com/hpux/os/11iV1.6>
<http://forums.itrc.hp.com>
- All HP-specific documentation included in the HP Apache-based Web Server software can be found online after installation at:
http://yourserver.com/hp_apache_docs/
or in the `/opt/apache/hp_apache_docs/` directory.
The latest information for the HP Apache-based Web Server can be found at:
<http://www.hp.com/go/webserver>

D Software Distribution Media

This appendix lists some media kit contents:

- “List of HP-UX 11i v1.6 Supported Products” on page 116
- “HP-UX 11i v1.6 Software Bundles” on page 121

List of HP-UX 11i v1.6 Supported Products

The following list of products supported on HP-UX 11i v1.6 are on the DVDs in the media kit. Documentation is on the Instant Information CD and on the web:

<http://docs.hp.com>

You can find the complete list of applications included in the HP-UX 11i v1.6 release in the HP Application Availability Matrix:

<http://www.software.hp.com/MATRIX>

Table D-1 **Supported Products**

Product/Option	Platform	Description
B9415AA	700	Apache Web Svr
B9415AA	800	Apache Web Svr
B6865AA	700	Audio Client
B3899BA	700	C/ANSI C Dev LTU
B3901BA	800	C/ANSI C Dev LTU
B8724AA	700	CIFS/9000 Client
B8724AA	800	CIFS/9000 Client
B8725AA	700	CIFS/9000 Server
B8725AA	800	CIFS/9000 Server
B8324BA	800	Cluster Obj Mgr
B5139DA	800	ECM Toolkit
B7609BA	700	EMS Framework
B7609BA	800	EMS Framework
B3907DB	700	Fortran90 LTU
B3909DB	800	Fortran90 LTU

Table D-1 Supported Products (Continued)

Product/Option	Platform	Description
A4929A	800	GbE PCI 1000BT
A6794A	800	GbE PCI 1000BT
A6825A	800	GbE PCI 1000BT
GigEther-00	700	GbE PCI 1000BT
GigEther-01	700	GbE PCI 1000BT
GigEther-00	800	GbE PCI 1000BT
GigEther-01	800	GbE PCI 1000BT
A4926A	800	GbE PCI 1000SX
A6847A	800	GbE PCI 1000SX
B3691AA_TRY	700	Glance + M/M
B3691AA	700	Glance + M/M
B3693AA	800	Glance + M/M
B3693AA_TRY	800	Glance + M/M
B5736DA	800	HA Monitors
B6060BA	700	HP MPI
B6060BA	800	HP MPI
B6281AA	800	HP MPI Doc Set
B3929CA	800	HP Online JFS
Base-VXVM	700	HP VxVM - Base
Base-VXVM	800	HP VxVM - Base
B9116AA	800	HP VxVM - Full
B3913DB	800	HP aC++ LTU
B3911DB	700	HP aC++ LTU

Table D-1 Supported Products (Continued)

Product/Option	Platform	Description
B3394BA	800	HP-UX Dev Kit
B4580AA	700	HP-UX STK
B4580AA	800	HP-UX STK
J5083AA	700	IDS/9000
J5083AA	800	IDS/9000
B5725AA	700	Ignite-UX
B5725AA	800	Ignite-UX
B9789AA	700	Java2 JRE 1.3
B9789AA	800	Java2 JRE 1.3
B9788AA	700	Java2 SDK 1.3
B9788AA	800	Java2 SDK 1.3
Judy	700	Judy Libraries
Judy	800	Judy Libraries
Casey	700	Kernel Config
Casey	800	Kernel Config
T1875BA	800	MCServGuard Docs
B6029AA	800	MLIB Documents
B6061AA	700	MLIB Math Lib
B6061AA	800	MLIB Math Lib
B4967AA_TRY	800	MWA Svr M/M
B4967AA	800	MWA Svr M/M
B4965AA_TRY	700	MWA Svr M/M
B4965AA	700	MWA Svr M/M

Table D-1 Supported Products (Continued)

Product/Option	Platform	Description
B5403BA	700	MirrorDisk/UX LT
B2491BA	800	MirrorDisk/UX LT
B8342AA	700	Netscape Comm
B8342AA	800	Netscape Comm
B2432EB	700	OO Cobol RTS LTU
B2435EB	800	OO Cobol RTS LTU
B6960BA	700	OmniBack Media
B6960BA	800	OmniBack Media
B6836AA	700	OpenGL
B6836AA	800	OpenGL
scsiU320-00	700	PCI SCSI U320
scsiU320-00	800	PCI SCSI U320
B7697BA	800	PRM Sw Libs
B7697BA	700	PRM Sw Libs
B3835DA	800	PRM sw/lic
B3835DA	700	PRM sw/lic
J5849AA	700	Pam Kerberos
J5849AA	800	Pam Kerberos
T1859BA	800	SGeRAC
T1862BA	800	SGeRAC Docs
B3935DA	800	ServiceGuard
FibrChanl-00	700	TL PCI Adapt
FibrChanl-00	800	TL PCI Adapt

Table D-1 Supported Products (Continued)

Product/Option	Platform	Description
TechSysConf	700	Tech Sys Config
B6859AA	700	WTSharedX
J2793B	800	X.25/9000 Link
J2793B	700	X.25/9000 Link
A6795A	700	XL2 PCI Adapter
A6795A	800	XL2 PCI Adapter
ZUS100WS	700	Zeus Web LTU
ZUS100WS	800	Zeus Web LTU
ZWST41_TRY	700	Zeus Web Server
ZWST41_TRY	800	Zeus Web Server
perl	700	perl-64 bit
perl	800	perl-64 bit

Total Products: 96

HP-UX 11i v1.6 Software Bundles

The HP-UX 11i v1.6 release contains the following software bundles:

Table D-2 HP-UX 11i v1.6 Software Bundles and Descriptions

SD Bundle Name	Description
These HP-UX 11i v1.6 OE bundles are installed by default from DVDs:	
HPUXBaseOS	HP-UX 11i v1.6 Base OS installation
HPUXBaseAux	HP-UX Base OS Auxiliary, which contains EMS Framework, Software Distributor, Judy libraries, kernel configuration (kcweb), and Update-UX
OnlineDiag	HPUX 11i v1.6 Support Tools Bundle
CDE-xxx	11i-OE: CDE-English default load MTOE/TCOE: All CDE bundles default load
FibrChanl-00	PCI FibreChannel adapter
GigEther-00	PCI Gigabit Ethernet
GigEther-01	PCI Gigabit Ethernet
B9415AA	HP Apache-based Web Server with Strong (128-bit) Encryption
B9789AA	Java2 1.3 RTE for HP-UX
perl	Perl Programming Language
Base-VXVM	Base VERITAS Volume Manager 3.1 for HP-UX
scsiU320-00	PCI SCSI U320
Appropriate base OS bundle and standard software above are installed by default with each of these OE bundles:	
HPUX11i-OE	HP-UX Operating Environment Component for Commercial Servers
HPUX11i-MTOE	HP-UX Minimal Technical OE Component

Table D-2 HP-UX 11i v1.6 Software Bundles and Descriptions (Continued)

SD Bundle Name	Description
HPUX11i-TCOE	HP-UX Technical Computing OE Component
The following product bundles are customer selectable (for selectable drivers, see Table , “HP-UX 11i v1.6 Selectable Drivers,” on page 55):	
B5725AA	HP-UX Installation Utilities (Ignite-UX)
Ignite-IA-11-22	HP-UX Installation Utilities for Installing 11.22 Itanium-based Systems
Ignite-UX-10-20	HP-UX Installation Utilities for Installing 10.20 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
J5083AA	HP IDS 9000 C.02.01 (Intrusion Detection) (commercial server OEs only)

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