

HP-UX 11i Version 1.5 Installation and Configuration Guide

**release id B.11.20
for rx9610 and rx4610 hp servers
and i2000 hp workstations**



Manufacturing Part Number: B9106-90001

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This edition describes installing HP-UX 11i Version 1.5 (release B.11.20).

This guide's printing date and part number indicate its current edition. The printing date changes when a new edition is printed. (Minor corrections and updates which are incorporated at reprint do not cause the date to change.) The part number changes when extensive technical changes are incorporated.

New editions of this manual will incorporate all material updated since the previous edition. For the latest version, see the HP-UX 11.x Release Documentation section on the Web: docs.hp.com

Typographic Conventions

This manual uses the following typographic conventions:

Boldface	Words defined for the first time appear in boldface .
Computer	Computer font indicates literal items displayed by the computer. For example: <code>file not found</code>
User input	Bold, computer text indicates literal items that you type. For example, to change to your account's home directory, enter: <code>cd</code>
<i>Italics</i>	Manual titles, variables in commands, and emphasized words appear in <i>italics</i> . For example, you would substitute an actual directory name for <i>directory_name</i> in this command: <code>cd <i>directory_name</i></code>
[] and	Brackets [] enclose optional items in command syntax. The vertical bar separates syntax items in a list of choices. For example, you can enter any one of these three items in this syntax: <code>ls [-a -i -x]</code>
Enter	Text in this bold, sans serif font denotes keyboard keys and on-screen menus. A notation like Ctrl-Q indicates that you should hold the Ctrl key down, then press Q .

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1 Introduction and Related Information

Introduction

Welcome to HP-UX

HP-UX 11i Version 1.5 is the release for all Itanium processor family (IPF) based HP-UX systems. The release ID for HP-UX 11i Version 1.5 is B.11.20, and the term HP-UX 11i Version 1.5 (B.11.20) will be used throughout this install guide. The HP-UX 11i Version 1.5 (B.11.20) Operating Environment (OE) is an integrated and tested software solution containing the operating system and selected applications.

PA-RISC based systems should continue to run HP-UX 11i (release ID B.11.11) or earlier releases. HP-UX 11i Version 1.5 (B.11.20) will not run on PA-RISC based systems.

This release is not intended for Mission Critical environments, and HA products such as ServiceGuard are not supported on this release. It includes the following major features and enhancements:

- Base VERITAS Volume Manager 3.1 for HP-UX (VxVM), is integrated in HP-UX and is now the default volume manager and root disk
- Support for running most PA-RISC applications on IPF without recompiling
- Enhancements to some commands, including date and strftime

Functionality provided in this release will be included in future releases of HP-UX.

Install Guide Overview

Depending on how your system is configured, your use for this guide will vary. For example,

- If you ordered one of the server configurations with HP-UX 11i Version 1.5 pre-installed, this guide can still provide you with valuable information about configuring your system, as well as peripherals, software, optional OS components and more.
- If you ordered a server or workstation without the OS pre-installed, then you will need to follow the instructions in Chapter 2.

WARNING

i2000 workstations ship with Windows 2000 pre-installed. By following the install instructions in Chapter 2 of this guide, you will overwrite the Windows 2000 operating system.

How to use this Install Guide

To help ensure a successful installation of HP-UX 11i Version 1.5, we recommend that you review this *entire guide* before proceeding to install the OS on your system as described in Chapter 2 of this guide .

Note that HP-UX 11i Version 1.5 is the *only* HP-UX release for all HP-UX Itanium-based systems; therefore this guide only describes installing HP-UX 11i Version 1.5 on Itanium-based systems.

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

If you will be cold-installing HP-UX 11i Version 1.5 on your new system, the following steps for using this guide are recommended:

1. Read the following section, *How this Install Guide is Organized*.
2. Complete the pre-install data collection tables in Appendix C.
3. Complete the install procedure in Chapter 2

TIP

Any last minute install issues are provided in a *Readme Before Installing* booklet (MPN: B9106-90005) provided with the HP-UX 11i Version 1.5 media. Be sure to review this booklet before continuing.

How this Install Guide is Organized

Table 1-1

Chapter	Section	Content
<i>Chapter 1</i> Installation and Configuration Notes	Introduction	This section introduces you to the Install Guide and provides suggestions for how to use it best.
	Media Kit Contents	This section describes the media kit that is shipped with new HP servers, including software, applications, release notes, etc.
	New Features (and Unsupported Features)	This sections describes new features of the operating system that shipped with your system, and also describes any features that are not supported.
	Software Distribution Media: Content Listings	This section consists of three separate listings which describe the software included on the Application Release DVD, the Operating System DVD, and other software supported by this OS.
	System Configurations	This section provides summary and detailed listings of the three HP Itanium™ -based system configurations, including processor speeds, cache memory, supported PCI interfaces cards, and other peripherals.
<i>Chapter 2</i> Installing HP-UX 11i Version 1.5	How to Plan Your HP-UX Installation	This section provides a brief list of information required to begin the install procedure.
	How to Install HP-UX 11i Version 1.5	This section provides step-by-step procedures for installing the OS.

Table 1-1

Chapter	Section	Content
<i>Appendix A</i> Post-Install Information	How to Create a System Backup	This section provides a brief description of creating a system backup.
	How to Install Optional Software Products	This section provides an example of how to install one of the optional software products that ships on the application release DVD.
	How to Identify your Model, OS and Software	This section shows you the commands for finding information about your system.
	How to Find HP on the Web	This section provides several useful URL's that you can use to find various HP reference material on the web, such as user manuals, manpages, HP-UX patches, support documents, safety information and more.
<i>Appendix B</i> In Case of Trouble	Errors and Warnings	This section describes what to do if you encounter certain errors.
<i>Appendix C</i> Data Collection Tables	Data Collection Tables	This section contains the data collection tables (each on a separate page so that you can make photocopies if necessary) that you will use to record pre-install data.

Media Kit Contents

This guide accompanies the HP-UX 11i Version 1.5 (B.11.20) media kit, which also includes:

- **HP-UX 11i Version 1.5 DVD** — Contains the HP-UX OS (operating system), required networking software, and on-line diagnostics.
- **Application DVD** — Contains HP-UX application software.
- **Instant Information CD** — Contains current HP-UX manuals, release notes and white papers.
- ***Readme Before Installing HP-UX 11i Version 1.5*** — This booklet contains last minute information for HP-UX 11i Version 1.5. Read this booklet before installing.
- ***HP-UX 11i Version 1.5 Release Notes*** — A file describing new features and functionality changes for HP-UX 11i Version 1.5. This file will be on the system after you install HP-UX 11i Version 1.5 in:
`/usr/share/doc/RelNotes/`

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

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

Select the **HP-UX 11i Version 1.5 Release Documentation** link.

New Features in HP-UX 11i Version 1.5

HP-UX 11i Version 1.5 (B.11.20) adds software functionality and support for Itanium™-based systems to HP-UX. HP-UX 11i Version 1.5 (B.11.20) is intended for all Itanium processor family (IPF) based HP-UX systems. PA-RISC based systems should continue to run the HP-UX 11i or HP-UX 11.x releases. This release will not run on PA-RISC based systems.

HP-UX 11i Version 1.5 (B.11.20) includes the following major features and enhancements:

- Base VERITAS Volume Manager 3.1 for HP-UX (VxVM), is integrated in HP-UX and is now the default volume manager and root disk
- Support for running most PA-RISC applications on IPF without recompiling
- Enhancements to some commands, including `date` and `strftime`

Functionality provided in this release will be included in future releases of HP-UX.

See the *HP-UX 11i Version 1.5 Release Notes* for more about these new OS features.

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/>.

The HP-UX Operating Environment (OE)

Beginning with HP-UX 11i, the operating system is delivered as part of the HP-UX Operating Environment (OE). An Operating Environment is an integrated and tested software solution containing the operating system and selected applications. In HP-UX 11i Version 1.5 (B.11.20), the operating system and selected applications are provided on two DVDs, to install the full OE, you must install from both DVDs.

Features Unavailable in HP-UX 11i Version 1.5

In comparison with HP-UX 11i, HP-UX 11i Version 1.5 (B.11.20) does not provide support for:

- PA-RISC systems
- updates, HP-UX 11i Version 1.5 (B.11.20) must be cold installed
- HFS or LVM root disk, use VxVM or whole disk VxFS instead
- boot from LVM disks
- root, swap or dump on LVM disks
- early dump
- Shared LVM
- Business Copy/BCV/snapshot features on high-end disk arrays
- Fabric connectivity with Fibre Channel Mass Storage
- High Availability (HA) features
- PCI OLA/R

HP-UX 11i Version 1.5 (B.11.20) does not support

- PA cross development on IPF
- HP supplied PA mode archive system libraries.
- HP supplied IPF archived system libraries
- mix & match between IPF and PA binaries and/or 32-bit and 64 bit objects
- network boot
- framebuffer graphics support
- boot from floppy disk

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

- the id number returned by `uname` may no longer be unique
- manual editing of `/stand/system` file is now obsolete

Additional information about the above changes and limitations, and other differences between HP-UX 11i and HP-UX 11i Version 1.5 (B.11.20), are described further in the *HP-UX 11i Version 1.5 Release Notes* (MPN: B9106-90003) .

HP-UX Installation Restrictions

Installing HP-UX 11i Version 1.5 (B.11.20) requires a 4 GB minimum root disk. The following installation restrictions apply:

- Installing HP-UX 11i Version 1.5 (B.11.20) requires using the DVD media.
- HP-UX 11i Version 1.5 (B.11.20) only supports cold installation of the HP-UX operating system.
- *Updating to HP-UX 11i Version 1.5 (B.11.20) from previous releases is not supported.*
- The HP-UX 11i Version 1.5 (B.11.20) release does not support using Ignite-UX to create and distribute a Golden System or Golden Disk for network installation of HP-UX.

NOTE

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

Software Distribution Media

The following tables list the applications that are:

- included on the HP-UX 11i Version 1.5 (B.11.20) Operating System DVD,
- available on the Application Release DVD

Applications included on the HP-UX 11i Version 1.5 Operating System DVD

Table 1-2

Applications on the Operating System DVD

Product Name	Description
Aries	PA-RISC Dynamic Code Translator
ASE	Asian System Environment
Base VxVM	Base HP VERITAS Volume Manager
Base VxFS	Base HP VERITAS File System
CDE/Xt/ Motif	Windows interface for Unix
DCE RPC	Client Remote Procedure Calls
IUX	Ignite UX - Cold install from DVD only
LVM	Logical Volume Manager
SAM	System Administration Manager
SD-UX	Software Distributor

Applications available on the Application Release DVD for HP-UX 11i Version 1.5

The products listed here are not included on the HP-UX 11i Version 1.5 (B.11.20) Operating System DVD; they are available on the HP-UX 11i Version 1.5 (B.11.20) Application Release DVD.

Some of these applications are offered for free and may also be available for download from the HP website. Please check the HP ordering database or the configuration guides for details on the individual products.

Table 1-3 Applications on the Application Release DVD

Product Number	Product Name	Description
B9415AA	Apache	Apache Web Server
B3899BA* B3901BA	C/ANSI C Dev	HP C/ANSI C Developer Bundle
B3907DB* B3909DB	Fortran	Fortran compiler
GigEther-00	Gigabit Ethernet	PCI Gigabit Ethernet LAN driver
B3691AA* B3693AA	Glance Plus	GlancePlus HP9000 Server
B3691AJ* B3693AJ	Glance Plus - Jpn	Japanese GlancePlus HP9000 Server
B6060BA	MPI	HP Message Passing Interface
B5118CA* B3929CA	Online JFS	Online Backup for JFS
B9116AA	VxVM – Full	Veritas Volume Manager – Full
B3911DB* B3913DB	ANSI C++	HP ANSI C++ compiler
B3394BA	Dev Kit	HP-UX Developer's Toolkit. Tools for user interface development.
B6061AA	MLIB	HP Parallel Math Library
B4580AA	STK	HP-UX 11i Version 1.5 Software Transition Kit

Table 1-3

Applications on the Application Release DVD

Product Number	Product Name	Description
B9789AA B9788AA	Java 2 RTE 1.3 Java 2 SDK 1.3	Java 2 RTE/SDK 1.3 Run Time Environment and Software Development Kit
B4965AA* B4967AA	MWA Svr	Measureware Server –Tool for viewing system data
B4965AJ* B4967AJ	MWA Svr - Jpn	Japanese Measureware Server
B5403BA* B2491BA	MirrorDisk/UX	Disk Mirroring for HP-UX
B8342AA	Netscape	Netscape Communicator
B2432EB* B2435EB	Object Cobol RTS	HP Micro Focus Object Cobol Runtime System
B6960AA	OmniBack	OmniBack Backup Software
B6836AA	OpenGL	Open Graphics Language
FibrChanl-00	Fibre Channel	PCI Fibre Channel LAN Driver

Note: Product Numbers with asterisks (*) are for i2000 workstations

To see the most recently updated list of applications that are certified on HP-UX 11i Version 1.5 (B.11.20):

1. Go to: <http://software.hp.com/HPUX-RDMP/>
2. Select the latest HP-UX Application Release desired, then select New/Updated Software Product List.
3. Review the list of supported applications.

System Configurations

HP-UX 11i Version 1.5 (B.11.20) supports only a 64-bit version of the HP-UX kernel.

The tables below outline the *fully supported HP-UX 11i Version 1.5 (B.11.20) configurations* for rx9610 and rx4610 hp servers, and i2000 hp workstations.

NOTE

The information in the following tables is subject to change. For the most up-to-date information, refer to the following web site:
<http://www.hp.com/products1/itanium/>

Table 1-4 Server Configuration Summary

Platform	Processor	Cache	Min/Max Memory	# Slots	PCI I/O
<i>rx9610</i>	733Mhz	2MB	256MB to 128GB	64 to 128 PCI	Ultra-2 SCSI, FWD SCSI-2, Gigabit Ethernet, 10/100B-TX, Fibre Channel
	800Mhz	4MB			
<i>rx4610</i>	733Mhz	2MB	1GB to 64GB	10 PCI	Ultra-2 SCSI, FWD SCSI-2, 1000B-SX, 10/100B-TX, Fibre Channel
	733Mhz	4MB			
	800Mhz	4MB			

Table 1-5 Workstation Configuration Summary

Platform	Processor	Cache	Min/Max Memory	# Slots	PCI I/O
<i>i2000</i>	733Mhz	2MB	1GB to 4GB	7 PCI	10/100B-TX, USB, external SCSI
	800Mhz	2MB	2GB to 4GB		

Hardware Configurations

rx9610 Server

The rx9610 server can contain up to 4 cells. Each cell includes, among other things, a memory card (16 dimm slots), four Itanium processors, and a connector for an additional memory card (16 additional dimm slots). The configurations for the rx9610 are:

Server	rx9610 - 16-way IPF-based server
Processor	733MHz/2MB 800MHz/4MB
Memory	128GB max memory using 16 SDRAM DIMM sockets per memory expander board per cell
Drives	DVD drive (IDE) Floppy drive LS-120 (IDE) slim line Hard Disk Drives (HDD) 2 hot swap 1" 18GB each, total 36GB
PCI I/O	up to 64 66MHz slots or 128 33MHz slots

Supported Add-On Peripherals

- A5272A - Sure Store E Disk System S10
- A5236A(z) - Sure Store E Disk System FC10
- A5277A - Sure Store E Disk Array FC60
- A3311A - High Availability Storage System
- A5599A - DLT8000 Tape Drive

Supported Add-On Cards

- A5150A -Dual Port Ultra2 SCSI
- A5159A -Dual Port FWD SCSI-2
- A4926A - PCI 1000BaseSX Gigabit Ethernet Fiber, single port
- A4929A - PCI 1000BaseT
- A6792A - PCI 100BaseT
- A5158A - Single Port Fibre Channel (Tachlite)

rx4610 Server

The Itanium processor server configurations for the rx4610 are:

Server	rx4610 - a 2-4 way IPF-based server
Processors	733MHz/2MB 733MHz/4MB 800MHz/4MB
Memory	64GB max memory using 32 SDRAM DIMM sockets per memory expander board
Drives	DVD drive (IDE) Floppy drive LS-120 (IDE) slim line 2 hot swap 1" Hard Disk Drives 18GB each, total 36GB
PCI I/O	10 PCI slots - 8 66MHz slots, 2 33MHz slots

Supported Add-On Peripherals

A5272A - Sure Store E Disk System SC10
A5236A(z) - Sure Store E Disk System FC10
A5950A - Sure Store E Disk Array XP512
A5700A - Sure Store E Disk Array XP256
A5920A - Sure Store E Disk Array XP48
A5277A - Sure Store E Disk Array FC60
A5616A - Sure Store E Disk System HVD 10
C4318B - Smart Storage Enclosure (DDS4)
C6369A/71A - DDS4 Tape Drive
A5617A - 10/180 Tape Library
A5598A - 9840 Tape Drive
A5599A - DLT8000 Tape Drive
A5583A(HVD) - 2/20 Tape Library

Supported Add-On Cards

A5150A -Dual Port Ultra2 SCSI
A5159A -Dual Port FWD SCSI-2
A4926A - PCI 1000BaseSX Gigabit Ethernet Fiber, single port
A4929A - PCI 1000BaseT Copper Gigabit Ethernet
A6792A - PCI 100BaseT
A5158A - Single Port Fibre Channel (Tachlite)

i2000 Workstation

The Itanium-based workstations are available in two configurations, the i2000 733MHZ is a single processor system with 2MB Cache, and 1, 2, or 4GB memory, and the i2000 800MHZ is a dual processor system with 2MB Cache, and 2 or 4GB memory.

Introduction and Related Information

Hardware Configurations

Workstation	i2000 - a 1-2 way IPF-based workstation with 2M L2 Cache
Processor	1 733MHz/2MB 2 800 MHz/2MB
Memory	UP - 1GB (add on to 2 or 4GB) MP - 2GB (add on 4 GB)
Drives	DVD drive (IDE) Floppy drive LS-120 or LS-240 (IDE) slim line Hard Disk Drives (HDD) 18GB
Core Built-in I/O	7 PCI slots 10/100BT LAN (10-200B-TX?) USB (4) internal SCSI (Ultra3 Qlogic 12160) PS-2 Keyboard
Graphics Console	NVIDIA Quadro2Pro

Mass Storage Drivers

External mass storage is not supported on the i2000 hp workstations.

New SCSI Drivers

For the rx9610 and rx4610 servers, two new SCSI HBA drivers, `qlisp` and `c8xx`, are released in HP-UX 11i Version 1.5 (B.11.20). The `c8xx` driver runs on all IPF systems and replaces the `c720` HBA driver on PA systems. The `qlisp` HBA driver is a new driver to support the 12160 Qlogic SCSI controller.

The `c8xx` HBA driver supports both the A5150A, Dual Channel Ultra2 SCSI, and the A5159A, Dual Channel FWD SCSI-2, add-in PCI cards.

The `qlisp` HBA driver supports the core Qlogic SCSI controller.

There is no early dump support in HP-UX 11i Version 1.5 (B.11.20). Unlike PA systems, on IPF based systems, it is not possible to get a crash dump before the system is booted. For more information, see System Crash Dump Changes in Chapter 3 of the *HP-UX 11i Version 1.5 Release Notes*, “HP-UX Features.”

Tachlite Driver

For the rx9610 and rx4610 servers, this release includes `td`, the Fibre Channel PCI Tachyon TL driver. This version of the driver supports Fibre Channel Arbitrated Loop (FC-AL) only. Fabric is not supported in this release.

The IPF platforms supported by this driver are:

- hp server rx9610
- hp server rx4610

For a complete list of supported platforms and devices as well as other up-to-date information, see the Fibre Channel web site at <http://techsolutions.hp.com>.

SCSI Devices

External mass storage is not supported on the i2000 hp workstations.

LSI LVD UltraII SCSI Controller

On Itanium-based servers, unlike PA-based systems, the LSI LVD UltraII SCSI controller, part number A5149A, can not boot from targets with SCSI ID greater than 7. These controllers have the Sub System ID Bits (SSID) set such that the card is forced into narrow mode.

Specifying Bootable Devices in the LSI BIOS

The LSI BIOS is used to determine which SCSI HBAs are searched for bootable devices. The LSI BIOS limits this selection to a maximum of four possible choices, determined by the PCI bus slot order. Any boot target must reside on one of those default controllers.

NOTE

HP-UX will let you install to any device on the system but if the device is not on one of the default controllers you can not boot from it.

QLogic SCSI Adapter Rates

For the rx9610 and rx4610 servers, some JBOD (Just a Bunch Of Disk) enclosures contain internal cabling for a slower SCSI rate than newer disk devices may accept. If an Ultra160 disk accepts the higher rate in an Ultra2 enclosure, a hang will occur in data transfers. To force the autonegotiation to use a slower rate, you must configure the SCSI adapter.

Setting external QLogic SCSI connector for JBODs:

Step 1. Enter Alt-Q when prompted on machine book

Step 2. Choose

```
Configuration Settings->Host Adapter Settings  
Adapter Configuration: Manual
```


Changing to `Manual` mode allows access to all the fields in the device settings screen.

Step 3. Choose

`Configuration Settings->SCSI Device Settings->Bus 1`

Press `TAB` to move to the left column (affects all devices in this model)

Jamaica BOX JBOD (Fast settings):

Sync Offset: 8

Sync Period: 25

SC10 Megatron (Ultra2 settings):

Sync Offset: 14

Sync Period: 10

Step 4. `Configuration Settings->Host Adapter Settings`

`Adapter Configuration: AUTO`

Changing back to `AUTO` mode allows autonegotiation to occur but based on the new device settings. Leaving this at `Manual` may cause the card to complain with warnings as the settings are forced on the SCSI devices without negotiation.

Step 5. Save changes and reboot

Introduction and Related Information
SCSI Devices

2 **Installing HP-UX 11i Version 1.5**

This chapter describes installing HP-UX 11i Version 1.5. After reading the preparation notes on the next few pages and completing the pre-install data collection tables in Appendix C, follow the cold install procedures described in this chapter.

Planning your HP-UX 11i Version 1.5 Cold Install

This section describes cold installing from the HP-UX 11i Version 1.5 (B.11.20) DVD.

See the following documents supplied with the HP-UX 11i Version 1.5 (B.11.20) media for additional information:

- *HP-UX 11i Version 1.5 Release Notes* — Describes changes included in this release. On your system, look in: `/usr/share/docs/`

These documents are also on the Instant Information CD supplied with HP-UX 11i Version 1.5 (B.11.20) media and at HP's user documentation Web site:

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

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. On i-class systems, cold-installing HP-UX will overwrite the factory installed Windows 2000 operating system.

HP-UX 11i Version 1.5 does not support sharing the root disk with any other operating system.

Cold Install Requirements

To cold-install HP-UX 11i Version 1.5, you must have the following:

- A supported Itanium-based server or workstation. Supported systems are listed in the section “System Configurations” of Chapter 1, “Introduction and Related Information.”
- The HP-UX 11i Version 1.5 (11.20.B) media

Ignite-UX Support

The Ignite-UX product is not available for configuring an Ignite-UX server at the time of the initial release of HP-UX 11i Version 1.5. When it is released, it will be available for download from HP's Software Depot web site:

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

To be notified of new releases of Ignite-UX by email, please register at the Software Depot web site listed above.

Configuring Disk Space

- Develop a clear configuration plan, including the following:
 - File system sizes.
 - Swap space size.
 - Dump device.
 - Disk and file-system parameters.

The defaults for these settings match a broad set of needs, but if necessary they can be modified early in the install process.

- If you plan to install application programs other than those supplied with HP-UX 11i Version 1.5, consider vendor size recommendations.

For planning disk space, refer to these other books:

- *Managing Systems and Workgroups* — available on the HP Instant Information CD and at:

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

- *HP JFS 3.3 and HP OnLineJFS 3.3 VERITAS File System 3.3 System Administrator's Guide* — available at

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

- *VERITAS Volume Manager 3.1 Administrator's Guide* — available at

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

CAUTION

If your system needs to be reinstalled 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.

Root Disk

HP-UX 11i Version 1.5 provides several file system choices for the root disk.

- By default, the system installs VxVM on the root disk with VxFS file systems. Unless the system firmware supports the `edd30` command, VxVM should only be installed onto a disk located at target 0. Once installed, you should not physically move the VxVM root disk.
 - Striping volumes can be configured during the install.
 - Mirrored volumes can not be configured during the install. Configure mirroring after the installation is complete.
- Whole-disk VxFS
- HFS file systems are not supported.
- Logical Volume Manager (LVM) is not supported as root disk, use VxVM instead.

Pre-Install Data Tables

The pre-install data tables are located in Appendix C.

IMPORTANT

All of the data in these tables is required to install HP-UX 11i Version 1.5 (with the exception of the networking information if you are installing a stand-alone system).

By completing the following tables prior to beginning the install of HP-UX 11i Version 1.5, you will have all the data you need, in one place, to successfully complete the install once you have started.

How to Install HP-UX 11i Version 1.5

To cold install the operating system, which *overwrites everything* on the target disk:

- 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 1.5 DVD into the drive.
- Step 3.** Turn the system ON, reboot, or cycle power. The system should boot automatically from the DVD; if it does, go directly to step 4.

IMPORTANT: If the system does not boot automatically, you will be taken to the boot menu, which is a timed menu -- press any key to stop the timer. Then, you can run `install` manually from the EFI shell, as follows:

1. Select `EFI Shell (Built In)` from the boot menu.
2. Display the list of devices by typing:

```
map -b
```

(The `-b` command line option scrolls the screen one page at a time in the event that the device list is longer than one page.)

3. Look at the list of devices (displayed as `fs0`, `fs1`, etc.) and identify the DVD-ROM device. An example of a DVD-ROM device entry from the `map` command:

```
fs0 : Acpi (PNP0A03),0)/Pci(3|1)/Ata(Secondary,Master)  
      /CDROM(Entry1)
```

4. The `edd30 [on | off]` command toggles the BIOS option to display device path according to the EDD 3.0 specification. If the BIOS option is `off`, the root disk *must* be located at target 0. If the root disk is *not* located at target 0, type :

```
edd30 on
```

to enable EDD 3.0.

5. Then enter the command `device_name:\install`. For example, if the DVD-ROM device is `fs0`, you would enter

```
fs0:\install
```

- Step 4.** Verify the system booted from the DVD. The bootloader will display a message indicating you have 20 seconds to interrupt the boot process. The AUTO file should contain the string

```
boot :IINSTALL -c0
```

If the AUTO file string is different from the above, you may have booted from the wrong device. In that case, interrupt the boot process, enter the EFI shell. From the EFI shell, select the correct device, as explained in step 3.

- Step 5.** Once the kernel has booted, it will scan the system for IO devices.

- Step 6.** 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.

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 **Cntl-K** for navigation key help and **Cntl-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 7.** Select **Install HP-UX** to begin interacting with the Ignite-UX (cold-install) program.

- Step 8.** 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*.

- Step 9.** You are now at the first step of the Install HP-UX Wizard: Select an overall system configuration. Accept the default option: HP-UX 11i Version 1.5 (B.11.20).
- Step 10.** Select a system environment. In this step you will choose the type of desktop, or windowing system that will be installed on your system. If you are unsure of which environment to choose, the CDE (Common Desktop Environment) HP-UX Environment is recommended. Make your selection before continuing.
- Step 11.** 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.
- Step 12.** 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.
- Step 13.** Select filesystem type. The default value chosen by the install program is recommended.

On the **File System** tab, choose between `whole-disk` with `VxFS` and `VxVM` (HP VERITAS Volume Manager with `VxFS`). The following restrictions and limitations apply to `VxVM`:

- The `VxVM` install option may be used only when installing onto a disk located at target 0 unless the firmware supports the `edd30` command. If you did not enable EDD 3.0 and you need to, you can break out of the HP-UX Install Wizard, reboot the machine, and start again (see step 3). If the `edd30` command succeeds you may install `VxVM` to any target. If the command fails, you may only install `VxVM`

to target 0.

- Once installed, the VxVM 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 sanely from it. This is similar to the limitation present in LVM.

Step 14. Specify root disk volume group disks. 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 15. Select language(s). Browse the available languages, marking the desired selections.

Step 16. Select the user license. In this step you will select the type of user license you wish to install on your system. This information does not have to be exact, but should represent what you believe to be the primary usage of your system. A minimal two-user license is denoted here. To load licenses for more than two users, you must use the Application DVD.

Step 17. 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 18. Pre-Install check 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 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 19. 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 20. 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 21. 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 22.** After the system has rebooted, the Welcome to HP-UX screen is displayed. 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 have completed the pre-install data collection tables in Appendix C, you have all of the information you need to complete the networking section of the install, so answer `Y` for yes.
- Step 23.** On the following screens, enter the basic network configuration information that you collected in Appendix C. Depending on how you set up your parameters, the system either will have configured them automatically or will call the `set_parms` command to allow you to set the root password, date and time, time zone, IP address, and additional network parameters.
- Step 24.** 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 25.** Log in to the system.
- Step 26.** After the cold install, store the HP-UX OS DVDs in a safe place. You may need them to install drivers or other software later.

Installing HP-UX 11i Version 1.5
Planning your HP-UX 11i Version 1.5 Cold Install

A **Post-Install Information**

This appendix describes:

- How to Create a System Backup
- How to Install Optional Software Products
- How to Identify your Model, OS and Software
- How to Find HP on the Web

How to Create a System Backup

You do not need to create a back up immediately after a cold install.

The Ignite-UX product is not available for making a system recovery backup at the time of the initial release of HP-UX 11i Version 1.5. When it is released, it will be available for download from HP's Software Depot:

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

Before Ignite-UX is available, once you have begun putting additional files on your system we recommend using the `fbackup` command to create a backup archive and `frecover` to restore the system if necessary. By backing up your system, you will have a reliable system image to return to if subsequent system changes or failures corrupt your system.

How to Install Optional Software Products

The Applications DVD that is distributed with HP-UX 11i Version 1.5 contains optional development tools and system management software.

HP-UX 11i Version 1.5 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 Version 1.5 can access.

a. Determine the DVD-ROM device name.

Use the `ioscan -funC disk` command to list disk devices, including the DVD-ROM. The following sample output shows a DVD-ROM on cabinet 0 whose device name is `/dev/dsk/c1t0d0`.

```
disk      4  4/2/0.0.0  sdisk CLAIMED      DEVICE      TOSHIBA CD-ROM XM
                               /dev/dsk/c1t0d0  /dev/rdisk/c1t0d0
```

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-ROM 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.

How to Identify your Model, OS and Software

Identify Model

To determine the model number of your system, check your invoice. Once the system is up and running, you can check your model number as well as a number of other informational items about your system by entering:

machinfo

Following is a sample output:

```
# machinfo

CPU info:
Number of CPUs = 1
Clock speed = 800 MHz
CPUID registers
  vendor information = "GenuineIntel"
  processor serial number = 0x0000000000000000
  processor version info = 0x0000000007000604
  architecture revision: 0
  processor family: 7 Intel(R) Itanium(TM) Family Processors
  processor model: 0 Intel(R) Itanium(TM) Processor
  processor revision: 6 stepping C0
  largest CPUID reg: 4
  processor capabilities = 0x0000000000000000
  implements long branch: 0

Cache info:
L1 Instruction: size = 16 KB, associativity = 4
L1 Data: size = 16 KB, associativity = 4
L2 Unified: size = 96 KB, associativity = 6
L3 Unified: size = 4096 KB, associativity = 4

Memory = 2043 MB (1.995117 GB)

Firmware Revision = S460AC4A.86B.0073.B.0101291049

Platform info:
model string = "ia64 Intel MP Server"
machine id number = 2e405c47-a41c-d511-bfcb-0060b00619e4
machine serial number = .....

OS info:
sysname = HP-UX
nodename = puppy
release = B.11.20
version = A (two-user license)
machine = ia64
idnumber = 0775969863
/stand/vmunix_release_version:
@(#) $Revision: vmunix: vw: njl selectors: CUPI80_BL2001_0429
danax_vxvm_dump 'CUPI80_BL2001_0403' 'njl_danax_vxvm_dump'
FLAVOR=debug DFILE=dfile.em_64 Mon Apr 30 21:34:48 EDT 2001

#
```

Identify OS

After installing HP-UX 11i Version 1.5, you will notice that `uname -r` identifies HP-UX 11i Version 1.5 as: B.11.20. This is the release ID.

Identify 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
```

To show revision and descriptive title of all software on a CD-ROM mounted at `/cdrom`, enter:

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

`swlist` has many options to expand or narrow the listing to specific software and software attributes. For more about `swlist`, see *Managing HP-UX Software With SD-UX*.

How to Find HP on the Web

You can obtain software and documentation for installing HP-UX and related products on the Web:

- The latest HP-UX manuals:
<http://docs.hp.com/>
- If you have installed the Apache Web Server, additional information and links can be found at:
http://your_system_name
- Ignite-UX information and download:
<http://software.hp.com/software/HPsoftware/IUX/>
- HP-UX 11.0 Software Transition Kit:
<http://software.hp.com/STK/>
- Downloading HP-UX patches and patch information from your nearest HP IT Resource Center:
Americas and Asia Pacific:
<http://us-support.external.hp.com/>
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<http://europe-support.external.hp.com/>
To receive HP Security Bulletins, select “Support Information Digests” from the Maintenance and Support page).
- Euro currency symbol information:
<http://www.hp.com/euro/>
- Safety and ergonomic information:
<http://www.hp.com/ergo/>
- LicensePower/iFOR from the core HP-UX:
<http://www.isogon.com/LPowerifor/supdown.htm>

Post-Install Information
How to Find HP on the Web

B In Case of Trouble

This appendix describes:

- Error Messages
- Warnings

Error Messages

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

<code>ERROR</code>	Indicates a serious problem, usually requiring action from the user 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.
<code>NOTE</code>	Indicates something out of the ordinary, but <i>not</i> fatal. The note <i>does not</i> require action.

Known Error Messages

The following message is placed in the `swagent.log` and `install.log` files after installing HP-UX 11i Version 1.5 (B.11.20):

```
* Installing fileset "HPvxvm.VXVM-KRN,r=B.11.20.%30" (12  
of 274).
```

`NOTE:` The VxVM drivers have been added to the `/stand/system` file. You must build the kernel and reboot. You need to build the kernel and reboot only if the installation process does not automatically do it for you. Use `" /usr/sbin/mk_kernel -s /stand/system "` to build the new kernel.

This message is produced because the `is_kernel` and `is_reboot` flags in the fileset are not set properly. It is strictly informational and does not affect the actual installation. A kernel build occurs automatically at the end of the installation.

C Data Collection Tables

You will need to supply the information in the following tables when installing HP-UX 11i Version 1.5 (B.11.20).

If you chose the guided install, you will be prompted for the information in these tables at various stages throughout the install, by the HP-UX Install Wizard.

If you chose the Advanced Install, you will be given the opportunity to enter all of this information at the beginning of the install using a tabbed file-folder character-based interface.

NOTE

If you choose to network-enable your system, you must designate a unique host name, host IP address, and other network information for your server or workstation. Refer to your site network administrator for those details to include in these tables.

If there is an HP-UX command that you can use after the install to confirm specific information entered by a command, it is provided with that command in the data collection table.

Table C-1 Network Information

Type of Information	Your Specific Information	How to confirm information after system is up
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>
DNS Domain Name		<code>grep NIS_DOMAIN /etc/rc.config.d/namesvrs</code>

NOTE

Some of the items in the following table, Miscellaneous Information, may not be familiar to you, but they are all questions that will be asked of you during the install. All options are described in detail during the install, so you can defer making decisions about those unfamiliar to you until you reach that point in the install.

Table C-2 **Miscellaneous Information**

Type of Information	Your Specific Information
Type of Desktop (ie. CDE / 64-bit minimal)	
Root DiskPath	
Root Swap Space	
Filesystem Type 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).	
Type of user license (number of users)	
Select additional software (All, HP-UX Additions, Uncategorized)	
Pre-Installed Disk Information (which will be overwritten during the install disk -- see Root Disk Path) This is a "review" confirmation step.	

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