HP-UX 11i v3 Installation and Update Guide

HP Integrity Server Blades, HP Integrity Servers, and HP 9000 Servers

Abstract

This guide describes cold-installing and updating to HP-UX 11i v3 (B.11.31). This document is intended for system administrators responsible for installing, configuring, and managing HP-UX 11i v3 on HP Integrity Server Blades, HP Integrity Servers, and HP 9000 Servers. Administrators are expected to have knowledge of operating system concepts, commands, and configuration.

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Revision History

To ensure that you receive the latest edition, you should subscribe to the appropriate product support service. Contact your HP sales representative for details. The latest version of this document can be found online at http://www.hp.com/go/hpux-core-docs-11iv3.

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1 Welcome to HP-UX 11i v3

Introduction to HP-UX 11i v3

HP-UX 11i v3 is an enterprise release delivering the highest level of integrated virtualization and automation. HP-UX 11i v3 dynamically reduces complexity and cuts deployment times to maximize return on investment.

Some key highlights of HP-UX 11i v3 include: advancements in performance, integrated multi-pathing, new security and availability offerings which provide increased resiliency, layered security and in-depth protection, Hyper-Threading (HT) Technology support using Dynamic LCPU, and multi-OS management across HP-UX and other HP supported operating systems.

HP-UX 11i v3 Operating Environments

With the March 2008 release, HP began offering new HP-UX 11i v3 Operating Environments. The new Operating Environments, which offer a richer set of products, are available only for HP-UX 11i v3 and are described in Table 2 (page 7). For more detailed information on the new HP-UX 11i v3 Operating Environments, see www.hp.com/go/hpux11iv3.

HP announced the discontinuance of the original HP-UX 11i v3 OEs (FOE, EOE, and MCOE) effective October 31, 2008. From November 1, 2008 onward, only the new HP-UX 11i v3 OEs (Base OE, Virtual Server OE, High Availability OE, and Data Center OE) are available for HP 9000 and HP Integrity servers.

Information on transition, support, and mapping from original to new v3 Operating Environments can be found at

http://h20338.www2.hp.com/hpux11i/us/en/products/hpux11iv3-oes-support-costs.html

For lists of the bundles in each new OE, see Appendix C (page 84).

Table 2 New HP-UX 11i v3 Operating Environments

HP-UX 11i v3 OE	Description
Base OE (BOE)	Provides integrated HP-UX functionality for customers requiring less complex installations. The BOE contains all the applications included in the Foundation OE, and improves the bundle set by adding much-requested products such as HP Process Resource Manager (PRM) and APA. This OE is bundled as `HPUX11i-BOE`.
Virtual Server OE (VSE-OE)	Designed for customers seeking higher resource utilization or embarking on consolidation projects and need virtualization for a flexible UNIX environment. The VSE-OE contains all the products included in the BOE (and the original EOE) and adds a host of other products including HP Matrix Operating Environment for HP-UX (formerly HP Insight Dynamics – VSE for Integrity). The VSE-OE is bundled as `HPUX11i-VSE-OE`.
High Availability OE (HA-OE)	For customers requiring high availability for large mission critical applications, this OE contains all the products included in the BOE (and the original EOE), plus applications such as HP Serviceguard and HA toolkits required to enable a mission-critical server. This OE is bundled as `HPUX11i-HA-OE`.
Data Center OE (DC-OE)	For customers who need both flexibility and high availability, the Data Center OE provides mission critical virtualization by combining the robust product selection in the VSE-OE and HA-OE in one integrated and tested bundle. This OE contains all the products included in the BOE, VSE-OE, HA-OE (and the original MCOE) and is bundled as `HPUX11i-DC-OE`.

HP-UX 11i v3 media kit

DVDs

Depending on your service contract with HP, your media kit might contain one or more of the following items:

- **HP-UX 11i v3 (B.11.31) OE (multi-DVD set)** — Contains the Operating Environment (OE). For more information on OEs, see "HP-UX 11i v3 Operating Environments" (page 7).
- **HP-UX 11i v3 (B.11.31) Application Software DVD (multi-DVD set)** — Contains HP-UX application software. For installation information, see Chapter 7 (page 59).
- **HP-UX 11i v3 Instant Information DVD** — Contains various HP-UX manuals, release notes, white papers, manpages, and other documentation. Useful if you don't want to go on the web. Available upon request.

NOTE: The HP-UX 11i v3 OEs can also be downloaded from the web. The HP-UX 11i v3 electronic software delivery model includes Americas, Europe, Middle East, and Asia. The download consists of ISO images of each OE. Each ISO image is burned to DVD at the customer's site and then installed in the same manner as the physical DVDs. Electronic licenses and media are quoted and ordered from the price list in the same manner as the physical licenses and media.

Special licensing rights

For delivery of Insight Orchestration, now included with VSE-OE and DC-OE, please see the Insight Orchestration letter included in the media kit.

Documentation

NOTE: Beginning in August 2011, the web is the primary source of technical documentation for the HP-UX Operating Environments and HP-UX Application Software. Web delivery supports HP's Green Business Technology Initiative to reduce packaging and also supports HP's goal to keep HP-UX technical documentation up-to-date and easily accessible.

The documentation can be viewed, downloaded, and printed from the web. For pointers to HP-UX documentation, see *A Guide to HP-UX Document Collections* at http://www.hp.com/go/hpux-core-docs-11iv3.

The following document can be found in the OE media kit and at http://www.hp.com/go/hpux-core-docs-11iv3:

- ***HP-UX 11i v3 Read Before Installing or Updating*** — Provides last-minute information for HP-UX 11i v3. Read this booklet before cold-installing or updating HP-UX.

The following documents can be found on the HP-UX 11i v3 Instant Information DVD and at http://www.hp.com/go/hpux-core-docs-11iv3:

- ***HP-UX 11i Version 3 Release Notes*** — Provides an overview of what is new, changed, deprecated, or obsoleted for HP-UX 11i v3. Also provides links to product-specific documentation.
- ***HP-UX 11i v3 Installation and Update Guide*** (this document) — Provides instructions for cold-installing or updating to the latest release of HP-UX 11i v3.

2 Assessing your system and meeting system requirements

This chapter helps you meet various requirements, as well as assess the current state of your system prior to cold-installing or updating to HP-UX 11i v3.

Chapter checklist

- "System requirements" (page 10)
  - "Supported systems" (page 10)
- "Determining disk space requirements" (page 10)
  - "Disk space requirements for a cold-install" (page 11)
  - "Disk space requirements for an update" (page 12)
- "Verifying supported network drivers, mass storage drivers, I/O cards, and storage devices" (page 13)
- "Firmware updating" (page 13)
  - "Receiving firmware alerts" (page 14)
- "Identifying model, release, and installed software" (page 14)
  - "Identifying the model" (page 14)
  - "Identifying the release date and Operating Environment" (page 14)
  - "Identifying installed software" (page 15)

IMPORTANT: Make sure you review the Appendix A: "Harmless messages and known problems" (page 72) for issues not discussed here that might apply to your system.

Also review the *HP-UX 11i v3 Release Notes* appropriate for your release (http://www.hp.com/go/hpux-core-docs-11iv3).

System requirements

To cold-install or update HP-UX 11i v3, you must have the following:

- A supported system. See "Supported systems" (page 10) and "Identifying the model" (page 14).
- HP-UX 11i v3 OE and Application Software (also known as "Application Release") DVDs.
- 1.5 GB memory, minimum.

NOTE: The minimum memory limit is intended for running the HP-UX 11i v3 Base OE and minimal applications. Additional memory will be required for optimal performance, and optional software and applications.

NOTE: If your system has the minimum amount of memory, you might need to manually set VxFS tunables for optimal performance *after* cold-installing or updating to HP-UX 11i v3. See "System tuning for VxFS" (page 30).

Supported systems

For a list of HP systems that this release of HP-UX 11i v3 fully supports, see the HP-UX Server Support Matrix at the following website:

www.hp.com/go/hpuxservermatrix

Additional information about HP servers and blades can be found at the following websites:

- HP BladeSystem: http://www.hp.com/go/blades
- HP Integrity Server Family: http://www.hp.com/go/integrity
- HP 9000 Server Family: http://www.hp.com/go/hp9000

Determining disk space requirements

Depending on your system's purpose, you might need to determine how much disk space you will need for each partition/file system before you cold-install or update to HP-UX 11i v3. For example, if you plan to install applications from other vendors, you might need to modify the size of the /opt partition to accommodate their size. Depending on how much disk space is available, you can change the partition/file system size to meet your needs.

NOTE: You can use Dynamic Root Disk (DRD) with Update-UX when you have disk space limitations that would otherwise prevent you from updating your system. By creating a clone, changing volume sizes, and then booting the clone, you can complete the update on the booted clone, with the original system as your backup. For more information, see the white paper "Dynamic Root Disk: Quick Start & Best Practices" (http://www.hp.com/go/drd-docs).

In addition to facilitating updates, DRD has other uses, all of which can reduce downtime. These include system recovery, system maintenance, patching, testing, and provisioning. See "Reducing downtime using Dynamic Root Disk" (page 29) for more information, including links to documentation and a website.

NOTE: Starting with the HP-UX 11i v3 OE Update release for March 2011, the maximum size of the boot disk or root volume group has been increased from 1 TB to 2 TB for HP Integrity systems. (The HP 9000 systems have supported the boot disk or root volume group up to the 2 TB maximum size since the initial HP-UX 11i v3 OE release in February 2007.) The install files on the OE media for March 2011 (and later releases) will support cold-install to larger (up to 2 TB) sizes for the boot disk or root volume group.

Also note that the Ignite-UX product from March 2011 (or later versions) is required for >1 TB support of install and recovery with HP Integrity systems. The attempted use of disks, physical volumes, or logical volumes >2 TB size for HP-UX boot devices will result in errors or failures. HP-UX 11i v3 supports data storage with a maximum size of 16 TB for physical volumes and a maximum size of 256 TB for logical volumes.

For information about modifying your partition/file system, see the *HP-UX System Administrator's Guide* (http://www.hp.com/go/hpux-core-docs-11iv3).

The list below provides additional hints and information to help you determine your disk needs for HP-UX 11i v3. If you need more disk space, be sure to order the equipment and plan on installing it after backing up your current system.

- Record the hardware path to the 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 v3 Operating Environment (OE), consider the vendor's size recommendations.
- When planning disk space, see the *HP-UX System Administrator's Guide*. Composed of five volumes, this guide is available on the Instant Information DVD and at http://www.hp.com/go/hpux-core-docs-11iv3.

Disk space requirements for a cold-install

The disk space requirements listed in Table 3 (page 12) are estimates only. Requirements might vary depending on the size of your disk, your type of server, and your Operating Environment. HP strongly advises you install all OS content on one disk, except for mirrors. That disk must be at least 20GB.

Note the following:

- The table shows recommended minimums.
- Ignite-UX will enforce absolute minimums, but they are smaller than recommended sizes in some cases.

- Ignite-UX will consider available root disk space and adjust sizes to be larger.
- The Ignite-UX UI **File System** tab can be used to set specific sizes.

CAUTION:

If the default size for the `/stand` partition is too small for your environment, do not use the `lvextend` command to increase the size of the `/stand` partition; doing so might render your system unbootable. Instead, use a Dynamic Root Disk (DRD) clone to create an inactive copy of the system on which `/stand` can be extended, or use Ignite-UX recovery to create a recovery image and resize the `/stand` partition.

To use a DRD clone to extend `/stand` on an LVM-managed system, see the white paper "Dynamic Root Disk: Quick Start and Best Practices" (http://www.hp.com/go/drd-docs). Further information on DRD is available at the DRD website: http://www.hp.com/go/drd. See also "Reducing downtime using Dynamic Root Disk" (page 29).

You can boot from an Ignite-UX recovery image and resize `/stand` as you recover the system. For help creating a recovery image, see the *Ignite-UX Administration Guide* available at the Ignite-UX website: http://www.hp.com/go/ignite-ux.

Table 3 Minimum disk space recommendations[1]

Partition/file system	Recommended space
/	1 GB
/stand	1.5 GB
/var	8.5 GB
/usr	4 GB
/tmp	500 MB
/opt	7 GB
/home	Depends on application and user requirements. It might make sense to mount a separate file system at `/home`.[2]
/swap	1x - 2x memory size for most systems.
Itanium EFI System (Boot) Partition	500 MB
Itanium HP Service Partition	400 MB

[1] These are recommended minimums and are estimates only. Requirements for partitions/file systems, especially `/var`, might vary depending on the size of your disk, your type of server, and your Operating Environment.

[2] In other words, you might want to put `/home` on a separate disk and separate volume group. This makes future recovery and upgrade operations easier. By default, `/home` is created as a separate file system; however, it is part of the root volume group.

Disk space requirements for an update

To ensure a successful update to HP-UX 11i v3, make sure that you have at least as much disk space allocated to the partition/file system listed in Table 3 (page 12) *and* that each partition/file system (most importantly, /usr, /opt, and /var) has at least 10-20 percent free space to allow for any growth.

Note the update process will check the disk space requirements. If the system doesn't meet the requirements, the update will not proceed.

Verifying supported network drivers, mass storage drivers, I/O cards, and storage devices

Before installing HP-UX 11i v3, make sure that the drivers, I/O cards, and storage devices on your system are supported.

You can run the `msv2v3check` script to validate whether the drivers, mass storage I/O cards, and mass storage devices installed on your system are supported on HP-UX 11i v3. This script will report if any unsupported drivers, mass storage I/O cards, and mass storage devices are found on your system. This script will also check the minimum firmware versions required for these cards or devices.

You can retrieve the `msv2v3check` script from the HP Software Depot (http://www.hp.com/go/softwaredepot). For more details on the `msv2v3check` script, see the white paper *HP-UX 11i v2 to 11i v3 Mass Storage Stack Update Guide* (http://hp.com/go/hpux-core-docs).

For a list of supported and unsupported HP-UX I/O cards and mass storage devices, see the *HP-UX Supported I/O Cards Matrix* and the *HP-UX Supported Mass Storage Devices Matrix* (http://hp.com/go/hpux-iocards-docs).

HP StorageWorks compatibility with HP-UX 11i v3

For up-to-date status and recommended firmware versions for HP StorageWorks components supported with HP-UX 11i v3, see the HP-UX 11i v3 and HP StorageWorks Compatibility section at

http://h18006.www1.hp.com/storage/hpuxconnectivitymatrix.html

Firmware updating

Make sure your system meets the minimum firmware requirements for the HP-UX 11i v3 (B.11.31) release. New IO adapters and certain virtualization applications may require updated firmware. Check the product documentation for further information.

For information on your options for updating firmware, see the *HP Integrity Servers and HP 9000 Servers Firmware Update Options* document, which is included with the document collection provided for each HP server. To access one of those collections, select one of the following links and navigate to your server.

- Server Console Solutions
  http://www.hp.com/go/thin-clients-docs
- HP 9000 Servers
  http://www.hp.com/go/hp9000_servers-docs
- HP BladeSystem c-Class Enclosures
  http://www.hp.com/go/blades_enclosures-docs
- HP Carrier-Grade cc2300/cc33xx Servers
  http://www.hp.com/go/carrier_grade_cc_servers-docs
- HP Integrity cx26xx Servers
  http://www.hp.com/go/integrity_cx2620_servers-docs
- HP Integrity Servers
  http://www.hp.com/go/Integrity_Servers-docs
- HP Proliant Servers
  http://www.hp.com/go/proliant_servers-docs

Receiving firmware alerts

1. Go to http://www.hp.com/go/myhpalerts.
2. Follow the instructions to register each of your products.

Identifying model, release, and installed software

Before you cold-install or update to HP-UX 11i v3, you need to identify the model of your system and other information.

Identifying the model

To ensure you are using a supported system, check the model number. To determine the model number of your system, enter:

```
model
```

To verify that HP-UX 11i v3 is supported on your system, see "Supported systems" (page 10).

For Itanium-based systems, you can identify the model by using the Extensible Firmware Interface (EFI): interrupt the autoboot process in the boot manager, enter the EFI shell, and use the `info sys` command:

```
Shell> info sys
```

Information about the model is displayed. For example:

```
SYSTEM INFORMATION
Product Name: server rx2600
Serial Number: sg20220034
UUID: FFFFFFFF-FFFF-FFFF-FFFF-FFFFFFFFFFFF
```

Identifying the release date and Operating Environment

To ensure you are following a supported update path, determine the release and Operating Environment currently on your system.

Each HP-UX 11i release has an associated release name and release identifier. The *uname*(1) command with the `-r` option returns the release identifier. Table 4 lists the releases available for HP-UX 11i.

Table 4 HP-UX 11i release identifiers

Release identifier	Release name	Supported processor architecture
B.11.11	HP-UX 11i v1	PA-RISC
B.11.23	HP-UX 11i v2	Intel® Itanium® and PA-RISC[1]
B.11.31	HP-UX 11i v3	Intel® Itanium® and PA-RISC

[1] PA-RISC is supported on HP-UX 11i v2 starting with the September 2004 release.

You can determine the update release date and the Operating Environment by entering the following:

```
# swlist | grep HPUX11i
```

The resulting output will list the current release identifier, update release date, and Operating Environment. For example:

```
HPUX11i-BOE B.11.31.1109 HP-UX Base Operating Environment
```

The above revision string signifies the following:

`B.11.31` = HP-UX 11i v3

`1109` = September 2011 Update Release

Identifying installed software

Identifying installed software can serve more than one purpose: on your system, it can help you determine what software will get updated or overwritten; and on media, it can help you determine your software choices.

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

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

For more information, see the *swlist*(1M) manpage or the *Software Distributor Administration Guide*, available on the Instant Information DVD or the web (http://www.hp.com/go/sd-docs).

NOTE: Third-party software might have been installed onto the system without using Software Distributor. If so, it will not appear in the output of `swlist`. You should consult your own documentation about the system to determine what other applications might be installed.

3 Choosing your installation methods

This chapter provides information and scenarios to help you choose the most appropriate methods to install or update HP-UX 11i v3 on your system.

Chapter checklist

- "Choosing cold-install or update" (page 17)
  - "When to cold-install" (page 17)
  - "When to update" (page 17)
  - "Supported update paths" (page 18)
- "Choosing an installation source" (page 19)
  - "Local media" (page 19)
    - "HP Integrity Integrated Lights Out (iLO) Virtual Media" (page 19)
  - "Network depot" (page 19)
  - "Golden image" (page 19)

IMPORTANT: Make sure you review the Appendix A: "Harmless messages and known problems" (page 72) for issues not discussed here that might apply to your system.

Also review the *HP-UX 11i v3 Release Notes* appropriate for your release (http://www.hp.com/go/hpux-core-docs-11iv3).

NOTE:
If your system is on HP Mission Critical Support, discuss the proper installation method with your HP Account Support Manager or Remote Support Account Advocate before preceding.

Choosing cold-install or update

Now that you have evaluated your system and ordered any needed hardware, you need to decide whether to cold-install or update to HP-UX 11i v3 on your system.

When to cold-install

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

If you have ordered a new system with the Instant Ignition option (also known as factory integrated), the cold-installation process described here has already been performed. You can skip this section.

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

You can cold-install rather than update to HP-UX 11i v3 when:

- You have a new system.
- You are managing several systems with similar OS configurations.
- Your systems are organized with clean separation of the OS from user, application, and data files.
- Overwriting the root (/) volume on existing systems will not cause a loss of applications or data.
- Your system configuration is not listed as a supported update path. See "Supported update paths" (page 18).
- Your disk space needs reconfiguration. Note, however, that you can use Dynamic Root Disk to address disk space limitations that would otherwise prevent you from updating. See "Determining disk space requirements" (page 10).

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.

You can cold-install on any *supported* system. See "Supported systems" (page 10).

For information about choosing installation and update sources, see "Choosing an installation source" (page 19).

See Chapter 4: "Before you begin" (page 21) for more information about preparing your system for cold-install. Then read the cold-install process using Ignite-UX in Chapter 5: "Cold-installing HP-UX 11i v3 from local media" (page 32).

When to update

Update means using `update-ux` to selectively overwrite the operating system and application software from a DVD or network source depot.

You can update to HP-UX 11i v3 from HP-UX 11i v2 (B.11.23). Updating from an earlier version of the HP-UX OS or OEs directly to HP-UX 11i v3 is not supported. You must first update to an HP-UX 11i v2 Operating Environment. If you want to migrate from HP-UX 11i v1 to HP-UX 11i v3 by updating, see the *HP-UX 11i v2 Installation and Update Guide* for information on how to update from HP-UX 11i v1 to HP-UX 11i v2 first.

You can update rather than cold-install HP-UX 11i v3 when:

- You are updating from a supported HP-UX 11i v2 or HP-UX 11i v3 system. See "Supported update paths" (page 18) for specific details.
- You are concerned about recovering unique applications and data on your root volume, and do not want to write over non-OS files, which occurs when cold-installing HP-UX 11i v3.

- Each system has a unique configuration.
- Current disk space is sufficient for HP-UX 11i v3. Note, however, that you can use Dynamic Root Disk to address disk space limitations that would otherwise prevent you from updating. See "Determining disk space requirements" (page 10).

An advantage of performing an update is that it leaves user data, configuration, and applications in place.

Updating to HP-UX 11i v3 is limited to the supported paths listed in "Supported update paths" (page 18).

For information about choosing installation and update sources, see "Choosing an installation source" (page 19).

See Chapter 4: "Before you begin" (page 21) for details on how to prepare your system to update to HP-UX 11i v3. The update process is described in Chapter 6: "Updating to HP-UX 11i v3" (page 44).

Supported update paths

Table 5 lists the supported update paths from HP-UX 11i v2 to HP-UX 11i v3 and from the *original* HP-UX 11i v3 OEs to the *new* HP-UX 11i v3 OEs. Be sure also to read the following "Update Path Notes" (page 18).

Table 5 Supported update paths

Operating Environment (OE)	HP-UX 11i v3 BOE	HP-UX 11i v3 HA-OE	HP-UX 11i v3 VSE-OE	HP-UX 11i v3 DC-OE
HP-UX 11i v2 FOE	x	x	x	x
HP-UX 11i v2 EOE			x	x
HP-UX 11i v2 MCOE				x
HP-UX 11i v2 TCOE	x			
HP-UX 11i v3 FOE	x	x	x	x
HP-UX 11i v3 EOE			x	x
HP-UX 11i v3 MCOE				x
HP-UX 11i v3 TCOE	x			
HP-UX 11i v3 BOE	x	x	x	x
HP-UX 11i v3 HA-OE		x		x
HP-UX 11i v3 VSE-OE			x	x
HP-UX 11i v3 DC-OE				x

Update path notes

- You cannot downgrade to a lower-level Operating Environment.
- Updating from a release of HP-UX to another release of HP-UX that was released earlier in time is not supported. For example, trying to update from HP-UX 11i v2 June 2007 release to the HP-UX 11i v3 February 2007 release is not supported. This could cause system incompatibilities and unpredictable results. If you attempt to update to an earlier version of HP-UX, the update process will stop without making any changes to your system and you will get the following error message:

```
ERROR: You are attempting to update from your release of HP-UX to a
    version of HP-UX that was released earlier in time. This is not supported.
    The update process has stopped without making any changes to your system.
```

```
Please see the 'Supported Update Paths' section of the HP-UX 11i v3
Installation and Update Guide for more information.
```

Choosing an installation source

When cold-installing or updating your systems, you have several installation sources from which to choose. You can cold-install or update directly from the DVDs, copy the contents of the DVDs into network depots, or create a golden image of the desired system for installing many similar systems.

TIP: With Dynamic Root Disk (DRD), you can efficiently provision VMs and blades with a DRD clone. For more information, see "Reducing downtime using Dynamic Root Disk" (page 29).

Local media

Uses:

Cold-install or update one system at a time.

You can cold-install or update directly from the DVDs in the media kit:

- HP-UX 11i v3 OE DVDs — Boot and install a new system or update an existing system.
- HP-UX Software Applications (also known as "AR") DVDs — Install applications not bundled with the OE or install a newer version of an OE application.

This guide describes cold-installs only on a single system from local media. It describes updates on a single system from local media, as well, but it also describes updates using a network depot.

HP Integrity Integrated Lights Out (iLO) Virtual Media

With HP Integrity Integrated Lights-Out (iLO) Virtual Media (vMedia), you can remotely install software from CD, DVD, or ISO image file without having to be physically at the server. For more information, see http://www.hp.com/go/integrityilo.

NOTE: Note that vMedia performance varies between iLo versions; the more recent versions offer better performance.

Also note that a DVD in a blade enclosure uses internal vMedia. For further information, see the *HP Superdome 2 Installation Guide* at http://hp.com/go/integrity_servers-docs.

Network depot

Uses:

Cold-install or update many systems in your enterprise.

Avoid manual media swaps.

Use Software Distributor (SD) commands to create depots containing the OE and other software, including patches and patch bundles. Then install or update from the depot using the latest version of Ignite-UX or Update-UX. For information, see "Creating a network depot (optional)" (page 28), as well as *Software Distributor Administration Guide* (http://www.hp.com/go/sd-docs) and the *Ignite-UX Administration Guide* (http://www.hp.com/go/ignite-ux-docs).

Updates from network depots (along with updates from local media) are described in Chapter 6 (page 44).

IMPORTANT: Be sure also to read the important information in "Standard HP-UX patch bundles" (page 62).

Golden image

Uses:

Deploy a customized system configuration to many systems.

Avoid manual media swaps.

Speed up installation time for multiple systems.

Simply put, a golden image is built by setting up a single system the way you want all of your systems to look, and then creating an image of that system. Once a golden image has been created, it is then deployed to multiple clients.

This method allows you to deploy a known-good system image that contains all of the files including *configuration* files that you want installed, and it is also faster the standard SD-built network depots (as described in "Network depot" (page 19)).

For more information about golden images, see the *Ignite-UX Administration Guide for HP-UX 11i* (http://www.hp.com/go/ignite-ux-docs).

4 Before you begin

This chapter describes the steps you should take before actually cold-installing or updating to HP-UX 11i v3. It also describes situations that you should carefully consider before you cold-install and/or update.

Chapter checklist

- "Reviewing known problems" (page 22)
- "Locating source media and codewords" (page 22)
- "Reviewing the software bundle install types" (page 22)
- "Backing up your system" (page 22)
  - "Part I: Creating an operating system recovery image" (page 23)
    - "Choosing make_net_recovery" (page 23)
    - "Choosing make_tape_recovery" (page 23)
    - "Choosing drd clone" (page 24)
  - "Part II: Backing up your data files" (page 24)
    - "Choosing HP Data Protector for backup" (page 24)
    - "Choosing HP-UX fbackup/frecover utilities" (page 25)
- "Selecting your HP-UX console for Itanium-based systems" (page 25)
  - "Determining if the conconfig command exists on your system" (page 25)
  - "Using the conconfig command to select the primary HP-UX console " (page 26)
  - "Using the EFI Boot Manager to select the primary HP-UX console " (page 27)
- "Mounting and unmounting the DVD" (page 27)
- "Creating a network depot (optional)" (page 28)
- "Messages: errors, warnings, and notes" (page 28)
- "Special considerations" (page 29)
  - "Reducing downtime using Dynamic Root Disk" (page 29)
  - "Securing your system when installing and updating" (page 29)
    - "Choosing security levels" (page 29)
  - "Installing VxFS and VxVM" (page 30)
  - "System tuning for VxFS" (page 30)
  - "Next generation mass storage stack" (page 30)
    - "Mass storage stack for HP-UX 11i v3" (page 30)
    - "HP-UX 11i v3 device special files (DSF)" (page 31)
  - "HP Insight Remote Support Software" (page 31)

Reviewing known problems

Before beginning any cold-install or update process, you should review the descriptions of harmless messages and known problems provided for you in Appendix A: "Harmless messages and known problems" (page 72).

These known problems notes include, but are not limited to, issues with cold-installing and/or updating to HP-UX 11i v3. You can also find other late-breaking news of issues at the HP Support Center (http://hp.com/go/hpsc).

Locating source media and codewords

Before you can cold-install or update, you must locate the source media needed for the process. The DVDs available in the media kit are described in "HP-UX 11i v3 media kit" (page 8).

You can obtain a codeword for a purchased product by contacting one of the HP licensing services listed in Table 6.

NOTE: For the real-time delivery of software passwords/keys and related licensing information, go to the Software License Manager website: http://licensing.hp.com.

Table 6 HP licensing services

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

Reviewing the software bundle install types

The structure HP-UX 11i v3 Operating Environments has been broken down into categories and install types to make installing and updating easier and more flexible. For more information about this structure, see "HP-UX 11i v3 Operating Environment install/update structure" (page 84). You should familiarize yourself with the install types (*required*, *recommended*, and *optional*) before you start the cold-install or update process.

Backing up your system

Any data on the client disks that are used for installation, including the operating system, are removed entirely as part of the installation process. Make a recovery image of your system so you can easily restore it to its original state if a problem occurs. Back up your system before *and* after performing a cold-installation or update.

Backing up your system consists of two parts:

- Part I: Creating an operating system recovery image
- Part II: Backing up your data files

Part I: Creating an operating system recovery image

To protect your system data, create an operating system (OS) recovery image:

- The Ignite-UX server has two commands you can use to create an OS recovery image:
  - `make_net_recovery`
    - Create an OS recovery image and store it on an Ignite-UX server on the network.
    - Works on any system that has Ignite-UX installed.
    - See "Choosing make_net_recovery" (page 23).
  - `make_tape_recovery`
    - Create an OS recovery image on a bootable recovery tape.
    - Works on any system that has a local tape drive and Ignite-UX installed.
    - Also works on any system without an Ignite-UX server.
    - See "Choosing make_tape_recovery" (page 23).

NOTE: To include the entire contents of the root volume group instead of just a minimal OS, HP recommends using the `-A` option to both `make_net_recovery` and `make_tape_recovery`.

- The Dynamic Root Disk (DRD) toolset can also be used to create a clone of the current root volume group. In the event of a failed upgrade or issues after cold-installing, you can boot from the clone to quickly recover the system:
  - `drd clone`
    - Create an OS image on a free local or SAN disk.
    - Works on any system that has the DRD toolset installed.
    - See "Choosing drd clone" (page 24).

IMPORTANT: The Ignite-UX recovery tools and DRD toolset are intended to be used in conjunction with data recovery applications to create a means of total system recovery. HP recommends against using Ignite-UX or DRD as backup solutions. They should only be used as part of a recovery or availability strategy.

Choosing make_net_recovery

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

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

For more information on using `make_net_recovery`, see the *make_net_recovery*(1M) manpage or the *Ignite-UX Administration Guide* (http://www.hp.com/go/ignite-ux-docs).

Choosing make_tape_recovery

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

You can run `make_tape_recovery` locally on the system from which you are trying to make an OS recovery tape. Data that is not in the root volume group must be backed up and recovered using normal backup utilities.

For more information on using `make_tape_recovery`, see the *make_tape_recovery*(1M) manpage on an Ignite-UX server or the *Ignite-UX Administration Guide* (http://www.hp.com/go/ignite-ux-docs).

Choosing drd clone

The `drd clone` command allows you to create an OS recovery image, referred to as an inactive clone, on a free internal or SAN disk. For recovery purposes, all you need to run is

```
drd clone -t target_dsf
```

where *target_dsf* is the device special file of the spare disk.

In the event that the update on the active system does not go as planned, you can boot the pre-updated clone by entering:

```
drd activate -x reboot=true
```

If you do boot the pre-update clone, and subsequently decide to re-activate the updated image, you can use the same `drd activate` command noted above, as the use of this command will always set the primary boot path to the inactive image.

NOTE: If you have updated from 11i v2 to 11i v3 on the active system image, you can go back and forth between the inactive 11i v2 image and the updated 11i v3 image by ensuring the following:

- When an HP-UX 11i v2 system is booted and HP-UX 11i v3 is installed on the inactive image, you should not use any `sw*` commands with `drd runcmd`. Use of this operation would invoke 11i v3 libraries and executables, which can make system calls not supported on the 11i v2 kernel.
- When an HP-UX 11i v3 system is booted and HP-UX 11i v2 is installed on the inactive image, you can run `drd runcmd swlist` or `drd runcmd swverify`; however, you cannot run any other `sw*` commands.

The `drd` clone contains the entire contents of the root volume group, and thus has all the components that are essential to bringing up a functional system.

In addition to system recovery, DRD has other uses, all of which can reduce downtime. These include system maintenance, patching, testing, and provisioning. See "Reducing downtime using Dynamic Root Disk" (page 29) for more information, including links to documentation and a website.

Part II: Backing up your data files

Depending on your system backup needs and your configuration, there are a number of different backup methods from which to choose. Two possible backup methods are as follows:

- HP Data Protector
- HP-UX `fbackup/frecover` utilities

Choosing HP Data Protector for backup

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

Using HP Data Protector involves setting up a database server and running software that directs and records the backup process for clients. For more information, see the HP Data Protector website (http://hp.com/go/dataprotector).

Choosing HP-UX fbackup/frecover utilities

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

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

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

Selecting your HP-UX console for Itanium-based systems

You can skip this section if you are cold-installing on a PA-RISC system (it applies only to Itanium-based systems) or you are already on the system console.

If you are cold-installing HP-UX or changing your system configuration, you will need to select the correct console. If you have more than one possible console device (such as a graphics adapter and a console serial device) and you have not configured your system console correctly, your installation session might appear to hang as you might be looking for output from the wrong device. Even if you have ordered a machine with HP-UX pre-installed, you will want to choose your console, despite the factory defaults.

Depending on the firmware level of your Integrity server, you can select your primary HP-UX console using one the following methods:

- The EFI `conconfig` command (if present)
- The EFI Boot Manager

NOTE: If you select either a system or an MP/iLO serial port, HP recommends you choose a VT100-capable terminal device.

Serial port, MP/iLO and VGA device paths can vary between each Itanium-based system. See the appropriate platform documentation for your product for information on determining the device paths.

You can find more information on the EFI Paths used for console selection in the Intel® Extensible Firmware Interface (EFI) documents available from the Intel website.

Determining if the conconfig command exists on your system

To decide which method to use, first determine if the `conconfig` command exists on your system.

1. At the EFI prompt, enter the following command:

   ```
   Shell> conconfig
   ```

   - If the command exists, the system might return output similar to the following:

     ```
     CONSOLE CONFIGURATION
     Index  Primary  Type     Device Path
     1      P        Serial   Acpi(HWP0002,PNP0A03,0)/Pci(1|2)
     2      S        VGA      Acpi(HWP0002,PNP0A03,0)/Pci(4|0)
     ```

The above is an example of factory defaults. As you will see later in these steps, one of these devices will have to be configured as “primary” (**P**); the other will have to be configured with a status of “Not Configured” (**NC**).

- If the command does not exist, the system will return the error message:

  `conconfig not found.`

2. Depending on whether the `conconfig` command is available at the EFI shell, use either the `conconfig` command or the EFI Boot Manager to select your primary HP-UX console.

Using the conconfig command to select the primary HP-UX console

If you have the `conconfig` command on your system, then you can take the following steps to select the primary HP-UX console. (For more information on the `conconfig` command, enter `help conconfig` at the EFI prompt.)

IMPORTANT: Do not select more than one console device. HP-UX 11i v3 recognizes only one device at a time. Choosing more than one device can result in the appearance of a system hang. A warning message might also be issued.

1. Enter `conconfig` at the command line. You might see output similar to the following:

```
CONSOLE CONFIGURATION
Index  Primary  Type     Device Path
1      P        Serial   Acpi(HWP0002,PNP0A03,0)/Pci(1|2)
2      NC       VGA      Acpi(HWP0002,PNP0A03,0)/Pci(4|0)
```

2. Decide which console you want to use.

   Depending on your system configuration, HP-UX can use one of the following devices as your system console:

   - System Serial Port (if present)
   - iLO (MP) Serial Port
   - VGA device (MP/iLO)

3. Use the `conconfig` command to select your primary console. For example, to select “system serial port” as your primary console, enter the following at the command line:

```
Shell> conconfig 1 primary
```

4. Next, use the `conconfig` to deselect all other consoles so that only one console is marked **P** and all others are marked **NC**. For example, if your `conconfig` output looks like the following:

```
CONSOLE CONFIGURATION
Index  Primary  Type     Device Path
1      P        Serial   Acpi(HWP0002,PNP0A03,0)/Pci(1|2)
2      S        VGA      Acpi(HWP0002,PNP0A03,0)/Pci(4|0)
```

   Enter:

```
Shell> conconfig 2 off
```

   Now your `conconfig` output should look like this:

```
CONSOLE CONFIGURATION
Index  Primary  Type     Device Path
1      P        Serial   Acpi(HWP0002,PNP0A03,0)/Pci(1|2)
2      NC       VGA      Acpi(HWP0002,PNP0A03,0)/Pci(4|0)
```

   Note that the unwanted VGA device in line 2 has the status of **NC** and the primary console in line 1 has the status of **P**.

5. Enter:

```
Shell> reset
```

Using the EFI Boot Manager to select the primary HP-UX console

To use the EFI Boot Manager to select the primary HP-UX console, proceed with the following steps.

1. Decide what console you want to use.

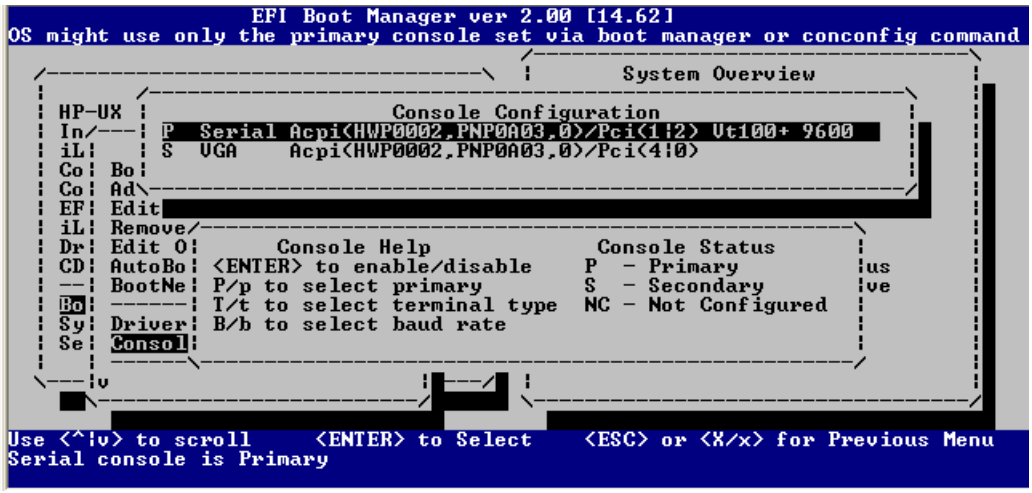
   Depending on your system configuration, HP-UX can use one of the following devices as your system console:

   - System Serial Port (if present)
   - iLO (MP) Serial Port
   - VGA device (MP/iLO)

2. Using the EFI menu, do the following:
   a. Open the EFI Boot Manager.
   b. Under **Boot Menu**, select **Boot Configuration**.
   c. On the **Boot Configuration** screen, select **Console Configuration**.
   d. On the **Console Configuration** screen, select *one* device as your system console. The device you have selected should have a status of **P**; all others should have a status of **NC**.

   NOTE: The following figure shows consoles with a primary (**P**) status and secondary (**S**) status. This would not be correct for your configuration. You should select only *one* device for a **P** status. The rest should be given an **NC** status.

   Only one active console should be configured; otherwise, HP-UX might either fail to boot or boot with output directed to the wrong location.



   e. Press **Esc** to return to the boot option maintenance menu.
   f. Select **Cold Reset** to reset your system.

Mounting and unmounting the DVD

Mounting the DVD

For some tasks, you might need to mount the DVD as a file system. To do so, take the following steps:

1. Insert the DVD into the DVD drive.
2. Find the DVD-ROM device file name:

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

   A typical device name is `/dev/dsk/c1t2d0`

3. Create a directory under root (/). For example:

   ```
   mkdir /dvdrom
   ```

4. Mount the DVD onto the new directory as a file system. For example:

   ```
   mount /dev/dsk/c1t2d0 /dvdrom
   ```

Unmounting the DVD

You must unmount the DVD before you can eject it from the DVD drive. For example:

```
umount /dvdrom
```

Note the DVD is automatically unmounted whenever the server reboots. For more information about mounting and unmounting, see the *mount*(1M) and *umount*(1M) manpages.

Creating a network depot (optional)

You can create a network depot if you intend to cold-install or update HP-UX 11i v3 on other systems on the network. A network depot allows you to cold-install or update all systems on the network without having to move media from system to system. You can also create a network depot if you want to avoid manually swapping media in a single system.

IMPORTANT: Also see the important information in "Standard HP-UX patch bundles" (page 62).

As root, follow this procedure to create a network depot and copy all products from the HP-UX 11i v3 multiple DVD set to it:

1. Verify that you have at least 10 GB of free space to create the network depot on another system in your network. If this space is not available, use `smh` either to create a new volume group or to extend an existing volume group. For help, see the `SMH` help or the *HP-UX System Administrator's Guide* (http://www.hp.com/go/hpux-core-docs-11iv3).
2. The HP-UX 11i v3 OE comes as a multiple DVD set. Mount the first (or next) DVD. (For instructions, see "Mounting and unmounting the DVD" (page 27).)
3. Create the directory that will contain the network depot you want to create. For example:

   ```
   mkdir /var/11iv3
   ```

4. Copy all products on the mounted DVD to the target depot. For example, to copy the products to the target depot called update-depot, enter the following command:

   ```
   swcopy -s /dvdrom \* @ /var/11iv3/update-depot
   ```

   NOTE: Make sure you copy all products from every HP-UX 11i v3 DVD to your target depot.

5. Unmount the DVD. (For instructions, see "Mounting and unmounting the DVD" (page 27).)
6. For each additional DVD in the OE media set, replace the media in the DVD drive with the next DVD. Then repeat steps 2 and 4.

Messages: errors, warnings, and notes

While the HP-UX 11i v3 install or update progresses, you will see progress messages that are being entered into the log file. These messages usually refer to normal behavior. The `ERROR`, `WARNING`, and `NOTE` messages, however, have the following significance:

`ERROR` Indicates a serious problem, usually requiring action from you so that the installation can proceed.

`WARNING` Indicates something out of the ordinary, but *not* fatal. The warning *might* require action from you.

`NOTE` Indicates useful information you should take note of, but *not* fatal. The note does not require action from you.

NOTE: For information about harmless messages currently known to appear, see "Messages you can ignore" (page 73).

Special considerations

In this section, you will find several situations and scenarios that you should give careful consideration before cold-installing or updating to HP-UX 11i v3. These situations might affect the decisions you make during the next steps in the cold-install and update process.

Reducing downtime using Dynamic Root Disk

With the HP-UX system administration toolset, Dynamic Root Disk (DRD), you can clone an HP-UX system image to an inactive disk. Then you can:

- perform system maintenance on the clone while your HP-UX 11i system is online
- update **from** an older version of HP-UX 11i v3 **to** HP-UX 11i v3 March 2009 (Update 4) or later
- quickly re-boot during off hours once the desired changes have been made
- utilize the clone for system recovery, if needed
- provision a new system by moving a clone of an LVM-managed root on which `drd rehost` has been run
- automatically synchronize the active image and the clone, eliminating the need to manually update files on the clone

NOTE: Rehosting capabilities for HP-UX 11i v2 are different than for those of HP-UX 11i v3. For information, see the *Dynamic Root Disk A.3.* Administrator's Guide* (http://www.hp.com/go/drd-docs).

DRD supports both HP Logical Volume Manager (LVM) and Veritas (VxVM) root volumes, except where specifically noted above, and runs on both HP-UX 11i v2 and v3.

For information about using a `drd` clone for creating an OS recovery image, see "Choosing drd clone" (page 24).

The HP-UX Dynamic Root Disk website at http://www.hp.com/go/drd provides a product overview, download links, documentation links, and installation instructions.

Securing your system when installing and updating

When installing and updating, you can harden your system by choosing from a variety of security levels to ensure that your system is in a secured state.

HP-UX Bastille provides customized lockdown on a system-by-system basis by encoding functionality similar to Bastion Host and other hardening and lock-down checklists. HP-UX Bastille (`HPUXBastille`) is included as *recommended* (default-installed) software on the OE DVD.

Choosing security levels

The Install-Time Security (ITS) options include the HP-UX Bastille security lock-down engine. The interactive GUI helps you select the configuration that meets your operational needs.

You can choose from four preconfigured levels of security, each with an incrementally higher level:

`Sec00Tools` Installs the security infrastructure. Does not implement any security changes during installation or updating, but ensures the required software is installed. The higher security levels are dependent on `Sec00Tools`. *Recommended* (default-installed).

`Sec10Host`	Installs a host-based lock-down system. Most network services are disabled, but they can be reinstated by running the *bastille*(1M) command. *Optional* (customer-selectable).
`Sec20MngDMZ`	Installs a managed lock-down system that blocks most incoming traffic with an HP-UX IPFilter firewall. *Optional*.
`Sec30DMZ`	Installs a DMZ full host-based and IPFilter network lock down. HP-UX IPFilter blocks most incoming connections, except HP-UX Secure Shell. *Optional*.

You can change these security settings after installing or updating your system. For more information about HP-UX Bastille, including security levels, see the *HP-UX Bastille User Guide* (http://www.hp.com/go/hpux-security-docs).

IMPORTANT:
Due to increased system hardening requirements, some locked-down services and protocols might be used by other applications and have adverse effects on the behavior or functionality of these applications. For more information about configuring HP Serviceguard with HP-UX Bastille and IPFilter, see the *HP-UX Bastille User Guide*.

Installing VxFS and VxVM

Starting with the HP-UX 11i v3 March 2012 OEUR, VxFS 5.0.1 is a *required* (always-installed) product, and the default selection for all systems is VxFS 5.0.1 plus LVM. (In the September 2011 OEUR, VxFS 5.0.1 replaced VxFS 5.0 as the *recommended* [default-installed] selection, and VxVM 5.0.1 replaced VxVM 5.0.) This has important implications for several install scenarios. For information about how this might impact you, consult Appendix B: “Installing the Symantec products VxFS, OnlineJFS, LVM, and VxVM” (page 81).

System tuning for VxFS

If your system has the minimum amount of memory, you might need to manually set VxFS tunables for optimal performance after cold-installing or updating to HP-UX 11i v3. Two VxFS tunables, `vx_ninode` and `vxfs_bc_bufhwm`, have an effect on system memory consumption. For guidelines on setting the tunables for machines with relatively low RAM, see the *Veritas File System 5.0.1 Administrator's Guide* at http://hp.com/go/hpux-core-docs.

Next generation mass storage stack

Mass storage stack for HP-UX 11i v3

HP-UX 11i v3 introduces a new representation of mass storage devices, known as the agile view. In the agile view, disk devices and tape drives are identified by the actual object, not by a hardware path to the object. In addition, paths to the device can change dynamically and multiple paths to a single device can be transparently treated as a single virtualized path, with I/O being distributed across those multiple paths.

In HP-UX 11i v3, there are three different types of paths to a device: legacy hardware path, lunpath hardware path, and LUN hardware path. All three are numeric strings of hardware components, with each number typically representing the location of a hardware component on the path to the device.

The new agile view increases the reliability, adaptability, performance, and scalability of the mass storage stack, all without the need for operator intervention. For more information, see the white papers “The Next Generation Mass Storage Stack: HP-UX 11i v3” and “HP-UX 11i v3 Persistent DSF Migration Guide” (http://hp.com/go/hpux-core-docs).

HP-UX 11i v3 device special files (DSF)

In a similar way to hardware paths, there are two types of Device Special Files (DSFs) for mass storage: legacy DSFs and persistent DSFs. Both can be used to access a given mass storage device independently, and can coexist on a given system.

DSFs: installing and updating

If you cold-install HP-UX 11i v3, both legacy and persistent DSFs are automatically created. By default, the installation process will configure system devices like the boot, root, swap, and dump devices to use persistent DSFs. This means that configuration files such as`/etc/fstab`, `/etc/lvmtab`, and others will contain references to persistent DSFs.

When you update from HP-UX 11i v2 to 11i v3, existing legacy DSFs are retained and persistent DSFs will be created. Configuration files are not updated to use agile DSFs. HP-UX will continue to use the existing legacy DSFs referenced in configuration files.

Legacy DSFs are completely backward compatible, and will not be affected by any persistent DSFs on the same server. A device can be simultaneously accessed via legacy and persistent DSFs.

For more information, including definitions of *legacy* and *persistent*, see "The Next Generation Mass Storage Stack: HP-UX 11i v3" and "HP-UX 11i v3 Persistent DSF Migration Guide" (http://hp.com/go/hpux-core-docs).

HP Insight Remote Support Software

HP strongly recommends that you install HP Insight Remote Support software to complete the installation or upgrade of your product and to enable enhanced delivery of your HP Warranty, HP Care Pack Service or HP contractual support agreement. HP Insight Remote Support supplements your monitoring, 24x7 to ensure maximum system availability by providing intelligent event diagnosis, and automatic, secure submission of hardware event notifications to HP, which will initiate a fast and accurate resolution, based on your product's service level. Notifications may be sent to your authorized HP Channel Partner for on-site service, if configured and available in your country. The software is available in two variants:

- HP Insight Remote Support Standard: This software supports server and storage devices and is optimized for environments with 1-50 servers. Ideal for customers who can benefit from proactive notification, but do not need proactive service delivery and integration with a management platform.
- HP Insight Remote Support Advanced: This software provides comprehensive remote monitoring and proactive service support for nearly all HP servers, storage, network, and SAN environments, plus selected non-HP servers that have a support obligation with HP. It is integrated with HP Systems Insight Manager. A dedicated server is recommended to host both HP Systems Insight Manager and HP Insight Remote Support Advanced.

Details for both versions are available at

http://www.hp.com/go/insightremotesupport

To download the software, go to Software Depot:

http://software.hp.com

Select **Insight Remote Support** from the menu on the right.

5 Cold-installing HP-UX 11i v3 from local media

This chapter describes cold-installing HP-UX 11i v3 from local OE media.

Chapter checklist

- “Preparing to cold-install” (page 33)
  - “Completing the preliminary tasks” (page 33)
  - “Reviewing the cold-install process” (page 33)
  - “Installing the latest Ignite-UX” (page 34)
  - “Backing up your configuration files” (page 34)
  - “Collecting information about your system” (page 34)
    - “Miscellaneous data collection table” (page 35)
    - “Network data collection table” (page 36)
  - “Creating a network depot (optional)” (page 36)
- “Proceeding with the installation” (page 36)
  - “Booting from the Operating Environment media” (page 36)
    - “Booting Your Itanium-based system” (page 37)
    - “Booting your PA-RISC system” (page 37)
  - “Customizing your installation” (page 38)
  - “Configuring your installation” (page 39)
  - “Finishing your installation” (page 41)
- “Completing the cold-install process” (page 42)
  - “Retrieving configuration files after cold-installing” (page 42)
    - “Creating a new root home directory” (page 42)
    - “Recovering customized and personal files” (page 42)
    - “Restoring /home” (page 43)
    - “Restoring other files” (page 43)

NOTE: If you have ordered a new system with the Instant Ignition option (also known as factory integrated), the cold-installation process described here has already been performed. You may skip this chapter.

If your system is on HP Mission Critical Support, discuss the proper installation method with your HP Account Support Manager or Remote Support Account Advocate before preceding.

Preparing to cold-install

The following sections describe the initial steps you should take before proceeding with your installation. Also included is a graphic overview of the cold-install process.

△ **CAUTION:** The cold-install process overwrites everything on all disks selected to participate in the installation. Make sure you have reviewed and completed the steps in "Backing up your system" (page 22).

Completing the preliminary tasks

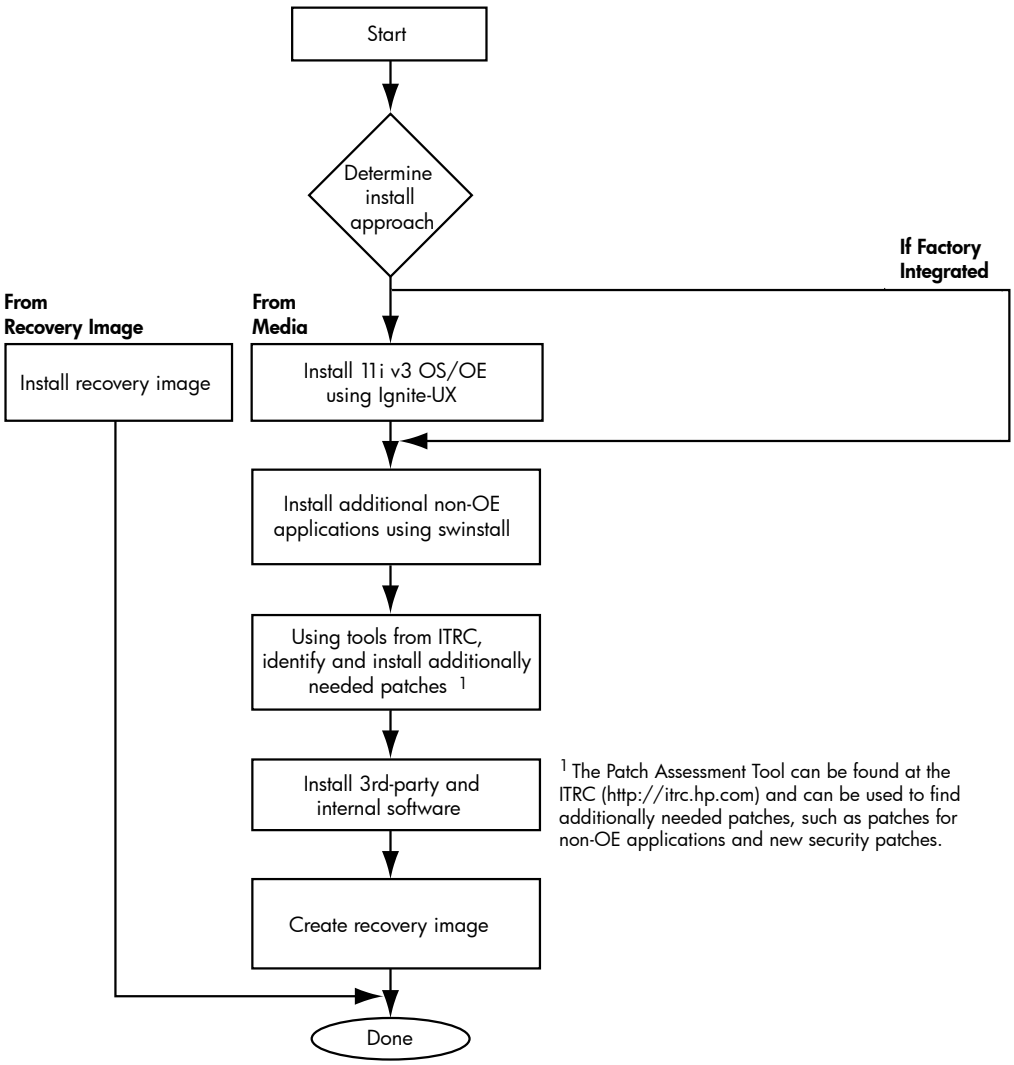
Before you cold-install HP-UX 11i v3, make sure that:

- You have assessed the current state of your system and have met all the requirements described in Chapter 2: "Assessing your system and meeting system requirements" (page 9).
- You have chosen the most appropriate installation methods and sources described in Chapter 3: "Choosing your installation methods" (page 16)
- You have completed the steps (especially backing up your system) and have reviewed the special situations described in Chapter 4: "Before you begin" (page 21).

Reviewing the cold-install process

Figure 1 (page 34) shows the overall process of cold-installing HP-UX 11i v3 from local media. You can also cold-install HP-UX 11i v3 from network depots and from golden images. For more information on these alternative methods of cold-installing, see "Choosing an installation source" (page 19).

Figure 1 Cold-Installing HP-UX 11i v3



Installing the latest Ignite-UX

You should use the latest version of Ignite-UX (version C.7.3 or later) to cold-install HP-UX 11i v3. Get the latest Ignite-UX version from the Ignite-UX website (http://www.hp.com/go/ignite-ux).

Backing up your configuration files

If you plan to cold-install HP-UX 11i v3 on a system that already has HP-UX installed, and you want to have that system serve the same role as it did before, then you will want to preserve your configuration files. Such files include the following:

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

Collecting information about your system

Before you cold-install HP-UX 11i v3, you should collect information about your existing system. Then, when you are installing HP-UX 11i v3, you will have the information available when needed. This section contains tables where you can record the information.

Use the collection tables in the following situations:

- When you choose the Advanced Installation (the default Ignite-UX option starting with version C.7.5), 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 is 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.

  Contact your site network administrator for the details to include in these tables.

NOTE:
During an installation, Ignite-UX configures the root, dump, and swap devices with the new HP-UX 11i v3 mass storage stack agile addressing representation. This means that, after installing, the commands that display the boot, dump, and swap devices will show them using the agile form. During a cold-install of HP-UX 11i v3, both legacy and persistent DSFs are automatically created. By default, the installation process will configure system devices like the boot, root, swap, and dump devices to use persistent DSFs. For more information on the new mass storage stack, see the white paper "The Next Generation Mass Storage Stack: HP-UX 11i v3" (http://hp.com/go/hpux-core-docs).

Miscellaneous data collection table

Table 7 might contain some items that are not familiar to you, but you will be prompted for this information during the install. However, the install process describes all options in detail, so you can defer making decisions about items that are unfamiliar to you until you reach that point in the install.

Table 7 Miscellaneous data

Type of data	Your specific data
Root Disk Path **NOTE:** Your root disk will typically display a legacy style Path name. However, HP-UX 11i v3 contains a new naming scheme for Root Disks. See the white paper "The Next Generation Mass Storage Stack: HP-UX 11i v3" for information on how to identify your legacy root disk device name in the agile HP-UX 11i v3 naming scheme. You can display the legacy hardware path using the **More Info** screen to show details on a specific lunpath hardware path.	
Root Swap Space	
File System Type LVM with VxFS (4.1 or 5.0.1), VxVM 5.0.1 with VxFS 5.0.1, or Whole disk with VxFS (4.1 or 5.0.1)	
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 or mirrored.)	
Physical Location for SAS (Physical Location is the enclosure and bay. WWID can also be used if known.)	
WWID for Fibre Channel (FC) (The storage administrator should provide WWID details for storage presented to the system. Knowing the WWPN of the adapters might also be useful.)	
WWID for Fibre Channel (FC) Virtual Connect (VC)	

Table 7 Miscellaneous data *(continued)*

Type of data	Your specific data
(WWID might have been presented to the WWPN in the VC profile that to be used with the Blade. The profile must be assigned to the Blade prior to HP-UX install.)	
Select additional software	
Pre-Installed Disk Information (Is overwritten during the install disk; see Root Disk Path)	

Network data collection table

In addition to areas to record network data, Table 8 provides HP-UX commands that you can use after the installation to confirm the information.

Table 8 Network data

Type of data	Your specific data	HP-UX command to confirm data after system is up and running
Host Name		`uname -n/hostname`
Host IP Address		`nslookup hostname`
Subnet Mask		`grep SUBNET_MASK /etc/rc.config.d/netconf`
Default Gateway IP Address		`grep ROUTE_GATEWAY /etc/rc.config.d/netconf`
Domain Name		`cat /etc/resolv.conf`
DNS IP Address		`cat /etc/resolv.conf`
NIS Domain Name		`grep NIS_DOMAIN /etc/rc.config.d/namesvrs`

Creating a network depot (optional)

You can create a network depot if you intend to cold-install HP-UX 11i v3 on other systems on the network. A network depot allows you to cold-install all systems on the network without having to move media from system to system. You can also create a network depot if you want to avoid manually swapping media in a single system. For instructions on creating a network depot, see "Creating a network depot (optional)" (page 28).

Proceeding with the installation

The following sections describe the stages in cold-installing from the Operating Environment (OE) DVDs.

Booting from the Operating Environment media

To begin, boot your system from the OE DVD. For specific instructions, choose one of the following subsections appropriate for your system:

- "Booting Your Itanium-based system" (page 37)
- "Booting your PA-RISC system" (page 37)

After booting your system, proceed to "Customizing your installation" (page 38).

NOTE: The cold-install process might involve multiple media swaps. To avoid manually swapping media, use a network depot. For information, see "Network depot" (page 19).

Booting Your Itanium-based system

1. Make sure any external devices that need to be configured at cold-install are connected to the target system and are turned on and operational.
2. Insert the HP-UX 11i v3 DVD (Disk 1) into the drive.
3. Turn the system on, reboot, or cycle power.

   If the system boots automatically, the kernel scans the system for I/O devices.

   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. At the EFI shell prompt, specify the device name (for example, fs1:) for the DVD-ROM and then enter the EFI `install` command, as in the following example.

   NOTE: Your DVD device might not always be fs1. Make sure you verify the ID appropriate to your DVD device.

   If the device is not automatically selected, select the device name for the DVD-ROM and then execute `install`. For example, from the EFI shell prompt, you might see something similar to the following:

   ```
   Shell> fs1:
   fs1:\> install
   ```

   If you do not see the DVD-ROM device, use the `map` command to list all device names from the EFI shell prompt. If you change the DVD in the drive after going to the EFI shell, you must run the command `map -r` to allow EFI to locate the bootable DVD in the drive

   The list of devices is displayed automatically, and the install process selects the device for you.

After the kernel has booted, it scans the system for I/O devices.

Booting your PA-RISC system

1. Make sure any external devices that need to be configured at cold-install are connected to the target system and are turned on and operational.
2. Insert the HP-UX 11i v3 DVD (Disk 1) into the drive.
3. Stop the autoboot by pressing any key.

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

4. Ensure that Fast Boot is enabled.

   a. Select the **Configuration Menu**: **CO**

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

   FB ON

   The full memory check that is run when Fast Boot is OFF might take several hours on a large system. (Remember to switch Fast Boot back OFF after installing HP-UX 11i.)

   c. Return to the **Main Menu**: **MA**

5. Search for bootable devices, using the choices displayed (for example, enter **`search`** or **`sea`**).

NOTE: The **search** or **sea** command will only display legacy hardware paths and will not display agile hardware paths. You will see the agile hardware path after booting your system. Note that both forms of hardware paths are supported (legacy and agile) and you can specify either hardware path in the `Boot` command. However, only the legacy hardware path can be displayed from the `Search` command.

For more information on agile hardware paths, see the white paper "The Next Generation Mass Storage Stack: HP-UX 11i v3" (http://hp.com/go/hpux-core-docs).

Output similar to this is displayed:

```
Main Menu: Enter command or menu > sea all

Searching for potential boot device(s)
This may take several minutes.

To discontinue search, press any key (termination may not be immediate).


                                                                          IODC
   Path#  Device Path (dec)                      Device Type              Rev
   -----  -----------------                      -----------              ----
   P1     0/0/0/2/1.2                            Random access media       4
   P2     1/0/0/2/0.6                            Random access media       4
   P3     1/0/0/2/1.3                            Sequential access media   4
```

NOTE: On partitionable systems only the core cell is searched by default. If you want to search all cells, you can use the `all` option to the `sea` command or provide a cell number to search. Using the `all` option might take a significant amount of time if a large number of I/O devices are connected to the system. The valid options to the `sea` command for the system you are using will be shown when you interrupt the boot process to gain access to the BCH prompt.

6. For a legacy hardware path, boot from the DVD drive using the listed path number.

   Note that if you know the agile hardware path, you may enter it as well. However, it requires a specific format compatible with the BCH interface limited to 32-bit elements. Use the command `ioscan -e` to display the boot path format to be used here to enter a lunpath hardware path in the `BOOT` command.

   For an agile hardware path, boot from the DVD drive using the full agile hardware path name:

   `BOOT` *`full_hardware_path`*

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

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

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

Customizing your installation

Once the system is booted, it displays the **Ignite-UX Welcome** screen for the HP-UX installation process.

Navigation tips

The following tips will help you navigate the installation interface:

- Use the **Tab** key to navigate between fields and the arrow keys to navigate within fields.
- Pressing **Enter** or the spacebar opens a menu list.
- Use the **Enter** key to select an item.

- For Help, use **Ctrl-K** for navigation-key help and **Ctrl-F** (or **F1**) for context-sensitive help.
- You can enter the underlined letter of an item (such as `I` for `install HP-UX`) to navigate more quickly.

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

1. If the installation detects that you have a PS2 or USB keyboard, the system displays the **Language Mapping** screen. Select the number of the language you want to use (such as **26** for US English) and then press **Enter** to confirm your choice.
2. From the **Ignite-UX Welcome** screen, select **Install HP-UX** to begin interacting with the Ignite-UX (cold-install) program and then press **Enter**. The system displays the **User Interface and Media Options** window.
3. From the **User Interface and Media Options** window, choose the degree of customizing needed to configure the installation. Mark your choices and select **OK**.
   a. Select from one of the three choices shown in **Source Location Options**:
      - **Media only installation** is the default setting for installing from a DVD. (This document only provides the procedures for cold-installing from media.)
      - **Media with network enabled** is recommended when you want basic networking enabled during installation so you can load software from a network depot (when an Ignite-UX server is not available).
      - **Ignite-UX server based installation** is recommended if you have an Ignite-UX server configured on your network and you want to supply custom configurations during the installation.

   b. Select from one of the choices shown in **User Interface Options**:
      - **Advanced Installation** enables you to accept all the default installation parameters or fully customize your system such as configuring multiple disks and adjusting file system sizes. HP recommends choosing the **Advanced Installation** option to configure your installation.
      - **No User Interface** is recommended if you want to accept all the default installation parameters and you do not need to verify the configuration using the user interface.

   The remaining sections take you through the **Media only installation** option and the **Advanced Installation** option. For more help on using the **Advanced Installation** screens, see the *Ignite-UX Administration Guide* (http://www.hp.com/go/ignite-ux-docs).

Configuring your installation

At this point, the system displays the **Basic** tab of the Ignite-UX itool Terminal User Interface (TUI) for the HP-UX Advanced Installation process. The **Basic** tab shows all the basic information for setting up the file system and for loading the Operating Environment. It also allows you to configure languages, locale, and keyboard requirements.

1. In the **Configurations** field, select an overall system configuration that you want to use for this installation.
2. In the **Environments** field, select the type of Operating Environment you want to install on your system. Press **Enter** to view the choices.
3. In the **Root Disk** field, select the disk to store your root file system. Press **Enter** to view the choices. If you are unsure of what to choose, keep the default selection that has been determined by Ignite-UX.

   HP-UX 11i v3 contains a new naming scheme for Root Disks. Note that the **Root Disk** screen displays the lunpath hardware path instead of the legacy hardware path. You can select **More Info** to view the legacy hardware path for the root disk selected.

For further information, including disk requirements, supported peripherals, and preparing the client for installation, see the *Ignite-UX Administration Guide* (http://www.hp.com/go/ignite-ux-docs).

NOTE: The lunpath hardware path selected is used only to identify the Root Disk itself, and any available path to that disk may then be used as boot path. Therefore, it is normal to see a different lunpath hardware path to the disk used as boot path.

---

4. In the **File System** field, select the type of volume manager and file system you want to use for your root disk. Press **Enter** to view the choices.
5. In the **Languages** field, press **Enter** to browse the available languages, marking the desired selections. You can make any of the selections your system default language. This will become the system default language after it is installed. Make sure **HPUXLocales** is marked **Yes**.

   The locale settings that were previously in HP-UX 11i v2 and located in the Common Desktop Environment (CDE) language bundle are now located in the `HPUXLocales` bundle. The `HPUXLocales` bundle contains internationalization support for many languages. This support includes date and time formats, currency, sorting methods, and so on.

   NOTE:
   CDE is an optional product in HP-UX 11i v3. If you require it, you must explicitly select the CDE bundle (`CDE-xxx`). This applies if you need `dtterm`, which is located in CDE. For some localization situations, `dtterm` is required; therefore CDE must be selected.

   ---

6. Use the **Software** tab to change the software that will be installed on your system, if desired. If you choose the **No User Interface** option, then you cannot deselect the *recommended* (default-installed) software bundles.

   To select or deselect the software bundles:

   a. Navigate to the **Software** tab.

   b. Select any *optional* software that you want loaded onto your system and deselect any *recommended* (default-installed) software that you do not want. Browse the list, marking your selections. Use the arrow keys to select a bundle and the spacebar to change the option.

   The bundles and associated product names are listed in Appendix C: "HP-UX 11i v3 Operating Environment software bundles" (page 84). For information about new and changed products and features, see the *HP-UX 11i Version 3 Release Notes* appropriate for the release you are cold-installing. The document is available on the Instant Information DVD and at http://www.hp.com/go/hpux-core-docs-11iv3.

   △ **CAUTION:**
   HP recommends that you do **not** deselect *recommended* (default-installed) software bundles or remove them from your system unless you know for certain that the software contained in these bundles is not required for your operating environment. Software might have unstated dependencies. Deselecting software might prevent products with dependencies on the software you deselected from functioning correctly.

   Installing HP-UX 11i v3 installs a minimum set of default networking and mass storage drivers that apply to the system. You might need to select or specify other available networking and mass storage drivers to enable other cards on your system.

7. Use the **System** tab to configure system parameters such as security levels, host name, IP address, root password, and the time zone. You must set the appropriate security setting for your system at this time. You can choose to set the other system parameters now or at the first boot of your system, using *set_parms*(1M).

   To set the appropriate security settings for your system, do the following.

   IMPORTANT: You should become familiar with the security levels before you set them. For more information about setting appropriate security levels, see "Securing your system when installing and updating" (page 29).

   a. Navigate to the **System** tab and select **Security Choices**.

      The four security levels appear. By default, **Sec00Tools** is selected.

   b. Select the appropriate security setting for your system.
   c. Select **OK**.

8. Use the **File System** tab to perform a variety of file system and disk-configuration tasks: for example, resizing file systems, and adding and removing disks. You can also reconfigure the volume structure and associated file system mount points. The **File System** tab will differ in appearance, depending on whether you previously selected LVM or whole disk on the **Basic** tab.

   Note that renaming or changing any disk file system structure on which Ignite-UX installs file system content causes the old file system on that disk to be lost. For more information on using the **File System** tab, see the *Ignite-UX Administration Guide* (http://www.hp.com/go/ignite-ux-docs).

9. Use the **Show Summary** button to view a summary of how your system will be configured. If you see any problems, or want to change any of your selections, back up to the appropriate step, and make the needed changes. Otherwise, select **Go!** (at the bottom of the screen) to initiate the installation.

   Ignite-UX executes a pre-installation consistency check to identify any errors that must be corrected before the installation can proceed.

10. The system typically displays the **Confirmation Dialog** box that lists errors, warnings, and notes for the configuration settings. (For information on these messages, see "Messages: errors, warnings, and notes" (page 28).) Review any errors, warnings, or notes displayed in the **Confirmation Dialog** box. If there are any errors, they will need to be resolved before the installation can continue.

    Warning messages will list which disks (ones that currently contain a recognized file system) 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. If the settings are correct, continue on to the next step.

11. After you have reviewed all of the information on the **Confirmation Dialog** box and resolved any errors, select **Go!** (at the bottom of the screen) to initiate the installation.

    As the installation proceeds, you will see a log detailing output from the software installation. After the software is installed, the system will reboot prior to configuring the software and once again after installation is complete.

    If your system was factory integrated, or if you chose to set the system parameters at the first boot of your system, the system will power down after the installation and ask for these system parameters at the next boot of your system.

Finishing your installation

Reboot your system. The **Welcome to HP-UX** screen is displayed and you will be prompted through a series of screens.

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

1. To use a keyboard on this interface, you must specify a language mapping to be used by X Windows and the Internal Terminal Emulator (ITE). Choose the appropriate language. For English, select number `26`.
2. You are prompted to answer a few questions before you can use the system. The first is whether or not you plan to use the system on a network. If you completed the pre-install data collection tables (see "Collecting information about your system" (page 34)), you have all the information you need for set_parms, so answer **Y** for yes.
3. Enter the basic network information that you collected in Table 7: "Miscellaneous data" on the screens that are displayed.
4. Confirm your choices. You are now finished with the install procedures and presented with a login screen. Log in to the system as root.

Completing the cold-install process

The following section describes a task you might need to take to complete your cold-install process. Upon completing this task (if necessary), proceed to the next chapters:

- (optional) Chapter 7: "Installing applications and patches" (page 59)
- Chapter 8: "Post-install/update tasks and troubleshooting" (page 64)

TIP: After completing the installation, store the HP-UX DVDs in a safe place. You might need them later to install additional drivers or other software.

Retrieving configuration files after cold-installing

If you previously saved your configuration files on another system (see "Backing up your configuration files" (page 34)), you can now retrieve them.

Creating a new root home directory

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

1. Log in as root.
2. Except on trusted systems, edit `/etc/passwd` to change the home directory from root to `/homeroot` and save it.
3. Create the `/homeroot` directory:

   ```
   mkdir /homeroot
   ```

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

   ```
   mv /.[!.]* /homeroot
   ```

5. Exit and log in again as root.

Recovering customized and personal 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.

Restoring /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
  ```

Restoring 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 the *HP-UX System Administrator's Guide: Logical Volume Management* (http://www.hp.com/go/hpux-core-docs-11iv3).

6 Updating to HP-UX 11i v3

This chapter describes updating to HP-UX 11i v3 using `update-ux` to selectively overwrite the operating system and application software from a DVD or network source depot.

Chapter checklist

- "Preparing to update" (page 45)
  - "Completing the preliminary tasks" (page 45)
  - "Reviewing the update process " (page 45)
  - "Saving a list of software on the system" (page 46)
  - "Rebuilding the kernel " (page 46)
  - "Renaming your log files" (page 47)
  - "Creating a network depot (optional)" (page 47)
  - "Installing the latest Update-UX" (page 47)
  - "Updating tips" (page 48)
- "Proceeding with updating" (page 49)
  - "Updating to HP-UX 11i v3 using the terminal user interface" (page 49)
  - "Updating to HP-UX 11i v3 using the command line interface" (page 56)
    - "update-ux command" (page 56)
    - "Updating to an Operating Environment from the command line" (page 57)
    - "Updating optional software from the command line" (page 58)
- "Completing the update" (page 58)

NOTE: If your system is on HP Mission Critical Support, discuss the proper installation method with your HP Account Support Manager or Remote Support Account Advocate before preceding.

IMPORTANT: Make sure you adhere to a supported update path. See "Supported update paths" (page 18).

Preparing to update

The following sections describe the initial steps you should take before proceeding with your update. Also included is a graphic overview of the update process.

Completing the preliminary tasks

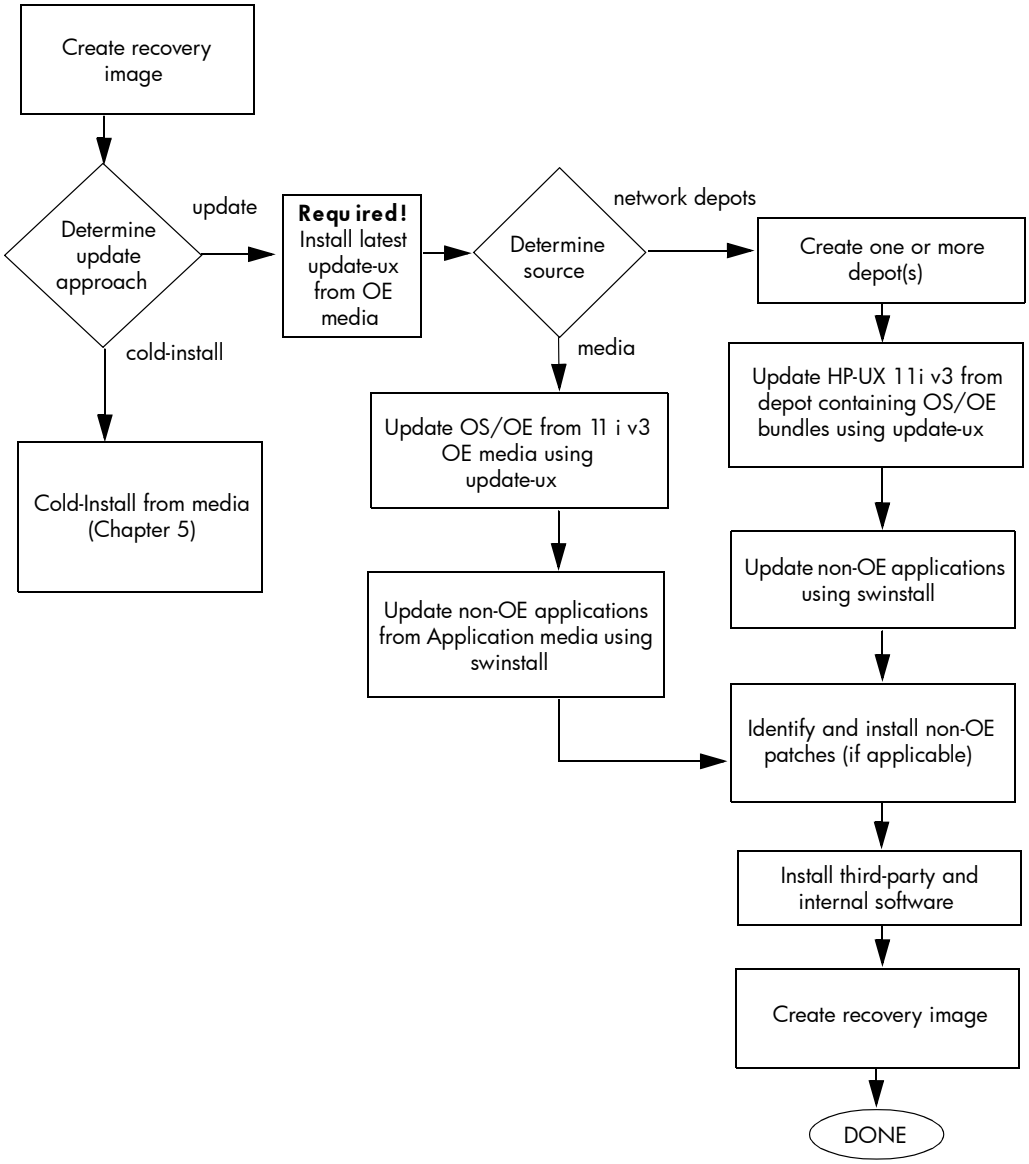
Before you update to HP-UX 11i v3, make sure that:

- You have assessed the current state of your system and have met all the requirements described in Chapter 2: “Assessing your system and meeting system requirements” (page 9).
- You have chosen the most appropriate update methods and sources described in Chapter 3: “Choosing your installation methods” (page 16)
- You have completed the steps (especially backing up your system) and have reviewed the special situations described in Chapter 4: “Before you begin” (page 21).

Reviewing the update process

Figure 2 (page 46) shows the overall update process. You can update your system from a network depot or from local media. Both methods are described in this chapter.

Figure 2 Updating to HP-UX 11i v3



Saving a list of software on the system

Before you start the update process, it might be helpful to save a list of software on the system:

1. List the bundles and products installed on your system. Make sure to save the output of the swlist command so you can reference it later.

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

2. After updating to HP-UX 11i v3, run the `swlist` command again and compare the output to the output you saved from step 1 to determine what software products and bundles still need to be updated.

Rebuilding the kernel

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

1. As root, enter:

   `/usr/sbin/mk_kernel -o /stand/vmunix`
2. Fix any problems listed in the `mk_kernel` output.
3. Reboot your system to ensure that your new kernel boots.

Renaming your log files

You should also rename your log files to make it easier to find problems encountered during an update.

1. Enter:

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

   `mv swagent.log swagent_old.log`
3. Enter:

   `cd /var/opt/swm`
4. Enter:

   `mv swm.log swm_old.log`

Creating a network depot (optional)

You can create a network depot if you intend to update other systems on the network. A network depot allows you to update all systems on the network without having to move media from system to system. You can also create a network depot if you want to avoid manually swapping media in a single system. For instructions on creating a network depot, see "Creating a network depot (optional)" (page 28).

Installing the latest Update-UX

If you are updating from HP-UX 11i v2 to HP-UX 11i v3, HP recommends that you manually install the latest HP-UX 11i v3 version of Update-UX before performing your update. This new version of Update-UX provides defect fixes and enhancements not found on the HP-UX 11i v2 version of Update-UX. For example, the HP-UX 11i v3 version of Update-UX allows you to use the preview (`-p`) option (new for HP-UX 11i v3), and it provides the latest manpage for the `update-ux` command.

You should install the `Update-UX` product (which includes the `update-ux` command) that is included on the Operating Environment DVDs that came with your HP-UX 11i v3 release.

From the DVD media

To install the `Update-UX` product from the Operating Environment DVDs:

1. Mount the DVD. (For instructions, see "Mounting and unmounting the DVD" (page 27).)
2. Using `swinstall`, install the latest version of the `Update-UX` product on the target system:

   `swinstall -s /dvdrom Update-UX`

   NOTE: Make sure you use the correct case to install the `Update-UX` product (in title case). This product contains the `update-ux` command (lowercase).

From a depot

The depot example uses the following syntax: *`depot_server`*`:`*`depot_path`*. For example:

`swinstall -s depot_server:/var/11iv3/update-depot Update-UX`

Updating tips

Table 9 provides tips, recommendations, and cautionary information for the update process.

Table 9 Updating tips

Topic	Tip
Multiple media swaps might be required	The update process might involve multiple media swaps. To avoid manually swapping media, use a network depot. For information, see "Creating a network depot (optional)" (page 28).
Running other commands	During the update process, be careful when running other commands; doing so might cause the commands to function improperly.
All software does not get updated and some products might be removed	Update-UX updates the HP-UX OS and any software specified in additional software bundles available on the source media or depot. Update-UX might not automatically update software that is not contained in an Operating Environment. In addition, Update-UX might not automatically update optional software bundles that have changed names since the last release. If you have added extra software to your existing OE, check to see if it is available in the new OE. If not, you will need to reinstall this software separately after the update is complete. In addition, software products that are no longer supported on HP-UX 11i v3 either might be automatically removed during the update, or the system might generate messages that warns users that these unsupported software products must be removed before beginning the update process. For further information about obsoleted products, see the *HP-UX 11i v3 Release Notes* (http://www.hp.com/go/hpux-core-docs-11iv3)
Persistent DSFs will be created	During an update from HP-UX 11i v2 to 11i v3, existing legacy DSFs are retained and persistent DSFs will be created. Configuration files will not be modified, so system devices will continue to use the existing legacy DSFs. See "Next generation mass storage stack" (page 30).
Secure Path not supported on HP-UX 11i v3	Secure Path is no longer supported on HP-UX 11i v3. The new mass storage stack in HP-UX 11i v3 provides integrated Native Multipathing capability. For more information on migrating from Secure Path to Native Multipathing in HP-UX 11i v3, see the "Migrating from HP StorageWorks Secure Path for Active-Active Disk Arrays to Native Multipathing in HP-UX 11i v3" (http://hp.com/go/hpux-core-docs).
HP Servicecontrol Manager (SCM) not supported on HP-UX 11i v3	HP Servicecontrol Manager (HP SCM) is not supported on HP-UX 11i v3. If your system is running SCM, you must migrate to HP System Insight Manager (HP SIM) version 4.2 BEFORE updating to HP-UX 11i v3; otherwise the update might fail. **What to do** Remove HP SCM before updating to HP-UX 11i v3. If you are updating your system to HP-UX 11i v3 and HP SCM is installed on your current system and you do not want to run it in the future, you must remove the HP SCM product before you update to HP-UX 11i v3. Uninstall HP Servicecontrol Manager using the following command: `swremove -x enforce_dependencies=false ID` where ID is the product or bundle ID as shown in the following example syntax: `swremove -x enforce_dependencies=false B8339BA` Remove the old product sub-directories by executing the following command: `rm -fr /opt/mx /etc/opt/mx` You can also remove the database for Servicecontrol Manager, `mysql`, by executing the following command: `swremove mysql` You might also choose to migrate HP SCM version 3.0 to HP SIM version 4.2 before updating to HP-UX 11i v3. You must be running HP SCM version 3.0 to perform this update. If you are running an earlier version you will need to update HP SCM to version 3.0 before updating to HP SIM version 4.2. For more information on migrating from HP SCM to HP SIM version 4.2 see the *HP Systems Insight Manager 5.1 Installation and User Guide* (http://hp.com/go/hpsim-manuals).
NIS+ not supported on HP-UX 11i v3	The NIS+ product is not supported on HP-UX 11i v3. If a system is running NIS+, you must migrate to LDAP BEFORE updating to HP-UX 11i v3; otherwise the update might fail. The NIS+ to LDAP-UX migration tool uses NIS+ commands and utilities for migration. Since the

Table 9 Updating tips *(continued)*

Topic	Tip
	NIS+ commands and utilities are not available on HP-UX 11i v3, the migration tools will not run on a system that has been updated to HP-UX 11i v3. **What to do** Migrate NIS+ servers and clients to LDAP before updating to HP-UX 11i v3.
ISEE users might need to switch diagnostics mode	Starting with the HP-UX 11i v3 March 2008 release, Online Diagnostics are no longer started by default. Traditionally, HP Instant Support Enterprise Edition (ISEE) depends on Online Diagnostics (EMS listener) for event detection; however, if it is not started and you notice anomalies in ISEE operation, especially with regard to which events are submitted, you must consult the *ISEE Installation and Configuration Guide*. **What to do** To check which version of diagnostics is running, run the following command: `sfmconfig -w -e` The preceding command switches the diagnostics mode to "EMS". In this mode, EMS Hardware Monitors are enabled and `SysFaultMgmt` does not monitor any devices. If the results show that only System Fault Manager is running without Online Diagnostics (EMS listener) on your HP-UX device, and anomalies exist in ISEE operation, especially with regard to which events are submitted, consult the *ISEE Installation and Configuration Guide* for additional information and instructions at www.hp.com/learn/isee Note: As of the HP-UX 11i v3 September 2008 OEUR, ISEE is no longer included in the OEs. See the *HP-UX 11i Version 3 September 2008 Release Notes* for further information.

In case of trouble	The `update-ux` command returns an error value when it is not successful:
	`1 - Error during execution; update aborted.`
	`2 - Update aborted via user action (keyboard press)`
	Messages are recorded in `/var/opt/swm/swm.log` and `/var/adm/sw/update-ux.log`.
	If you encounter a problem during the update process, review Appendix A: "Harmless messages and known problems" (page 72) for possible solutions.

Proceeding with updating

After you have completed all necessary preparations and have familiarized yourself with any special issues, you can update your target system. You can update to HP-UX 11i v3 using one of the following methods:

- `update-ux` terminal user interface. See "Updating to HP-UX 11i v3 using the terminal user interface" (page 49).
- `update-ux` command line interface. See "Updating to HP-UX 11i v3 using the command line interface" (page 56).

Updating to HP-UX 11i v3 using the terminal user interface

This section describes how to update your system using the `update-ux` Terminal User Interface (TUI).

There are seven steps in the TUI `update-ux` process:

Step 1: Start-up	Start the `update-ux` TUI.
Step 2: Select source	Provide the location of the software depot from which the software will be installed.
Step 3: Select OE	Select the OE to which you want to update.

Step 4: Select software	Choose the software in the OE you want to include in your update.
Step 5: Analysis (preview)	Analyze (preview) your update selections to determine if they can be updated successfully.
Step 6: Update	Perform the actual software update.
Step 7: Verify update	Verify that the software update was successful.

TIP: With this TUI, you use the **Arrow**, **Tab**, **Space**, and **Return** keys to navigate.

Step 1: Start-up

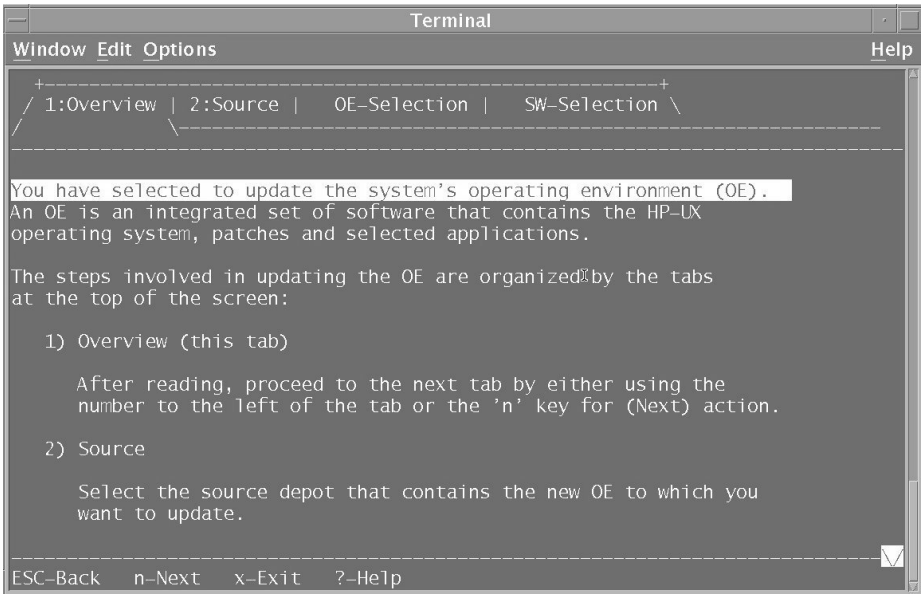
a. To start the TUI for an update session, enter:

```
update-ux -i -s /dvdrom
```

The TUI is automatically invoked and the **Update-UX Overview** tab appears. If any screen other than the **Overview** tab appears, press **1** to display the **Overview** tab. This tab provides an overview of the update process. Follow the numbered tabs to update the OE.

Use the navigation legend at the bottom of each screen to navigate and select options on this TUI.

Figure 3 Overview Screen

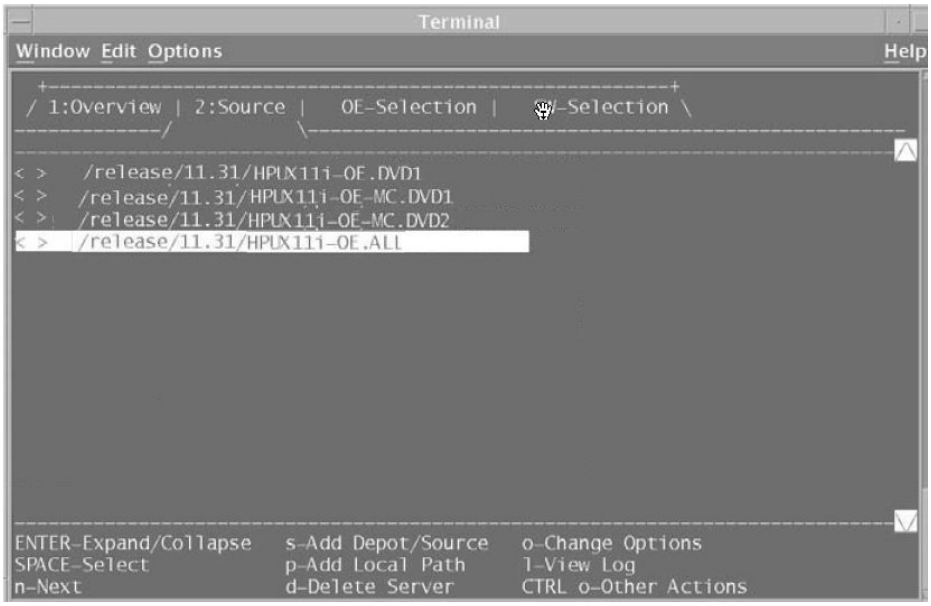


b. After reviewing the information on the **Update-UX Overview** tab, enter `n` (next) to proceed to the **Source Selection** tab.

Step 2: Select source

The **Source** tab appears. The **Source** tab displays a list of registered source depots on the local host system.

Figure 4 Select Source Tab



a. Specify the source depot that contains the new OE that you want to use to update your target system. The system automatically selects the local host and default depot path.

You can expand any entry that is preceded by the **+** sign. This allows you to view the available depots on the server.

b. If the depot containing the software you want to install does not appear in the list, you can do one of the following:

- Add another host system to the list of registered source depots by entering **`s`** (**`Add Server/Depot`**) and then entering the name of the new source host; or
- You can also remove a host system from the list of registered source depots by entering **`d`** (**`Delete Server`**).

c. Press **Enter**. The system retrieves all the depots available for the host name specified and displays a list of registered depots on the source host.

d. Use the spacebar to select the depot containing the software you want to install.

NOTE: You cannot select content within the OE at this point. Software selection within the selected OE is in the next screen.

---

e. Enter **`n`** (next) to confirm your selection and proceed to the **OE-Selection** tab. (The system displays the message `Reading Data from Source` before displaying the next tab.)

Step 3: Select OE

The **OE-Selection** tab appears.

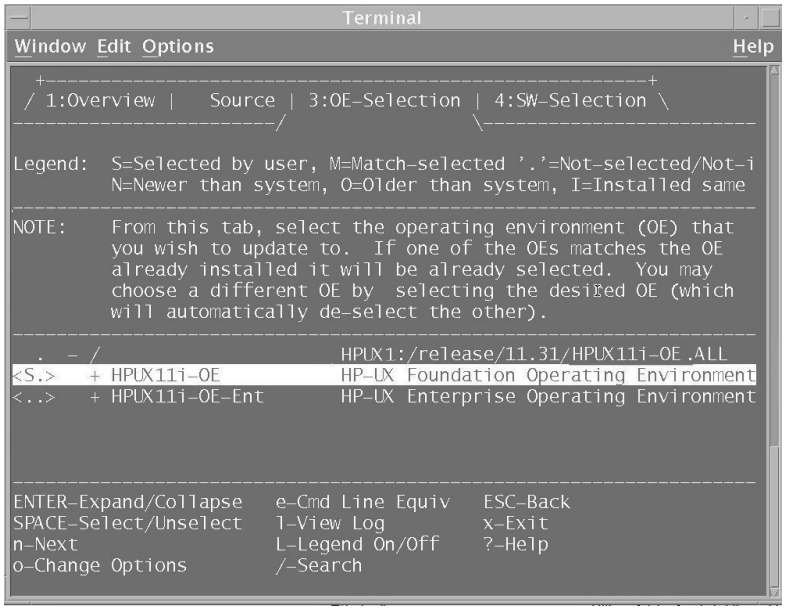
The **OE-Selection** tab displays the list of OEs to which you can update. The OE that best matches the one currently installed on your system is automatically selected:

- If your system already has an HP-UX 11i v3 BOE, HA-OE, VSE-OE, or DC-OE, the same OE will be automatically selected.
- If you are updating from HP-UX 11i v2, or if your system has one of the “old” HP-UX 11i v3 OEs (FOE, EOE, MCOE, or TCOE), Update-UX will select the “new” OE that best matches the “old” OE.

You may choose a different OE by selecting it (which will automatically deselect the other).

IMPORTANT: If you choose to select an OE other than the one that was automatically selected, you must adhere to an supported update path. See "Supported update paths" (page 18).

Figure 5 OE Selection Tab



With this screen, you can accomplish two tasks: 1) review the contents of an OE you are considering for update, and 2) make the actual OE selection. With the next screen (in Step 4), you will be able to select the individual software bundles.

a. The OE software is divided into three install types: *required*, *recommended*, and *optional*. If you are not familiar with the special meanings of these terms, see their definitions in "HP-UX 11i v3 Operating Environment install/update structure" (page 84). In addition, the software is separated into several product categories. Again, see "HP-UX 11i v3 Operating Environment install/update structure" (page 84) for more information.

On this tab you can review the software contents included within the OE:

Highlight the category you would like to review and press **Enter** to expand and view its contents.

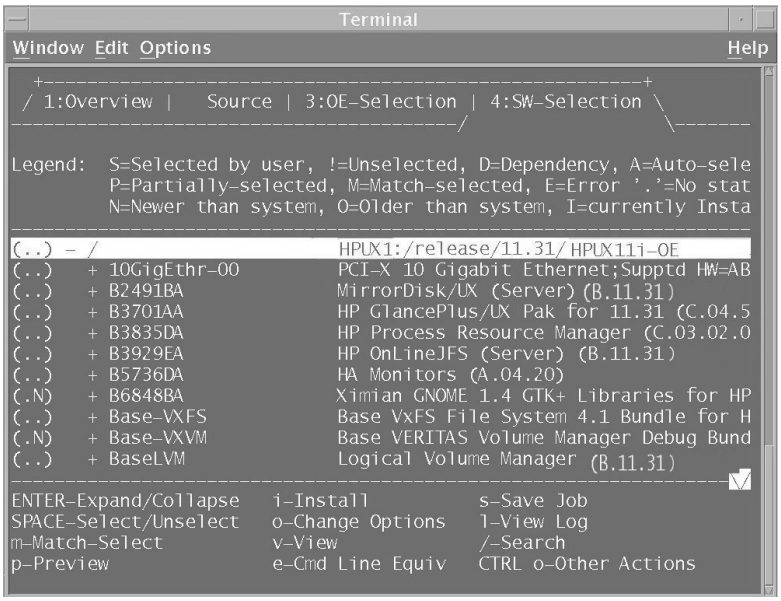
b. When you are ready to select the OE to which you want to update, navigate to the OE listing and press the spacebar to select it. Then enter `n` (next) to confirm your selection and proceed to the **SW-Selection** tab.

The system displays the message: `Working...Loading *temporary* update tools that do not affect the running system and will be removed when the OE update is finished.`

Step 4: Select software

The **SW-Selection** tab appears. The **SW-Selection** tab displays the software contents of the OE you selected on the **OE-Selection** tab. On the **SW-Selection** tab you can choose the software contents you want to include within the OE.

Figure 6 Software Selection Tab



Use the spacebar to select or deselect software from the list.

NOTE: You might observe a few seconds of delay each time you select or deselect a software item on this screen.

Select any *optional* software that you want and deselect any *recommended* (default-installed) software that you do not want. Browse the list, marking your selections.

The bundles and associated product names are listed in Appendix C: "HP-UX 11i v3 Operating Environment software bundles" (page 84). For information about new and changed products and features, see the *HP-UX 11i Version 3 Release Notes* appropriate for the release to which you are updating. The document is available on the Instant Information DVD and at http://www.hp.com/go/hpux-core-docs-11iv3.

△ **CAUTION:**
HP recommends that you do **not** deselect recommended software bundles or remove them from your system unless you know for certain that the software contained in these bundles is not required for your OE.

If you deselect recommended software during the update, the old version of the software you deselected will remain on your system. The old version might not be compatible with the newly updated HP-UX 11i v3 OE. In addition, software might have unstated dependencies. Deselecting software might prevent some products from functioning correctly because they have dependencies on the software you deselected.

The flag `M` (Match) appears when software has been matched to software currently installed on your system. The flag `P` (Partial) might appear if you select only a component of a software object or if such components are automatically selected due to dependencies.

The software products in each category have an associated flag that is displayed in the left-hand column and are described below:

- `S` is selected by the user.
- `!` is deselected by the user.
- `D` is a dependency.
- `A` is automatically selected.
- `P` is partially selected.

- `M` is selected because it matches software installed on your system.
- `E` means an error has occurred when selecting this item.
- `.` has no status (is not selected or installed).
- `N` is newer than the software on the system.
- `O` is older than the software on the system.
- `I` is currently installed on the system.

Step 5: Analysis (preview)

a. After selecting the software you wish to update, enter **`p`** (preview) to preview, without modifying the system, the actions that will occur for the update.

The output window appears and begins displaying messages beginning with: `Analyzing software to be installed`.

In this step, the `update-ux` TUI analyzes the software you have selected.

The Analysis window displays status information about the analysis process. If the preview shows problems, these will be displayed in the Analysis window.

Figure 7 Analysis Dialog

b. The preview stops after the analysis. Press **Enter** to return to the **SW-Selection** tab.

c. After returning to the **SW-Selection** tab, enter **`l`** (log) to view the log file, which presents a view of detailed install information.

d. Review any errors, warnings, or notes. Warnings and notes are simply informational. If there are any errors, they will need to be resolved before the update can continue.

Step 6: Update

In this step, the system proceeds with the actual update. At the **SW-Selection** tab, enter **`i`** (install) to start the update process. After the update has started, the system will typically execute a reboot.

After your system has completed its reboot, you will be prompted to change DVDs if and when needed.

Step 7: Verify update

Use the following steps to verify that the update has completed successfully:

a. To verify that no errors were encountered before the update began, view the contents of the log file: `/var/adm/sw/update-ux.log`. You should see output similar to the following:

```
          Command entered: update-ux -s
          depot_server:/var/11iv3/update_depot SWM HPUX11i-OE
NOTE:     Output is logged to '/var/adm/sw/update-ux.log'
        * Obtaining some information from the source depot.
          cp /usr/lbin/swagent /var/adm/sw/tmp/update-ux
          compress /var/adm/sw/tmp/update-ux/swagent
          uncompress /var/adm/sw/tmp/update-ux/swagent.Z
          chmod +x /var/adm/sw/tmp/update-ux/swagent
        * Copying an SD agent from the source depot
          /usr/sbin/swagentd -k
          /usr/sbin/swagentd -r
          /usr/sbin/swcopy -s depot_server:/var/11iv3/update_depot
          -x logfile=/var/adm/sw/tmp/update-ux/swcopy.log
          -x autoselect_dependencies=false -x enforce_dependencies=false
          -x mount_all_file systems=false -x register_new_depot=false
          -x uncompress_files=true -x reinstall=true SW-DIST.SD-AGENT @
          /var/adm/sw/tmp/update-ux/SWDIST.depot
          /usr/sbin/swagentd -k
          /usr/sbin/swagentd -r
          rm -f /var/adm/sw/tmp/update-ux/orig_swagent.log
          rm -f /var/adm/sw/tmp/update-ux/tmp_swagent.log
          /usr/sbin/swagentd -k.
```

b. To verify that all appropriate software was updated successfully, view the contents of the logfile: `/var/opt/swm/swm.log`.

You may view the contents of the `swm.log` interactively by typing the following command:

```
swm job -i
```

The system displays a log screen that displays contents of the log file `/var/opt/swm/swm.log`.

Figure 8 Log Screen

This log screen provides multiple ways of viewing the information recorded in the log file. You can filter out the messages by verbosity levels, using the action keys at the bottom of the screen.

Table 10 (page 56) lists the log files that are generated during an update:

Table 10 Log files generated during update

Log file	Description
`/var/opt/swm/swm.log`	This log file contains the output from the software selection, analysis and installation phases of the software update. In addition, this log file includes output from all control scripts that run during the update. The `swm.log` file is the primary log file that you should reference for the results of the update process.
`/var/adm/sw/update-ux.log`	This log file contains the output from the `update-ux` script. The `update-ux` script ensures that the right tools are installed before performing the update.
`/var/adm/sw/swagent.log`	This log file contains the detailed output from the software installation, including control scripts that run during the update. Note that the `swm.log` file is a superset of the information found in the `swagent.log` file.

`/var/adm/sw/swagentd.log`
`/var/adm/sw/swconfig.log`
`/var/adm/sw/swinstall.log`
`/var/adm/sw/swmodify.log`
`/var/adm/sw/swreg.log`
`/var/adm/sw/swremove.log`
`/var/adm/sw/swverify.log`
	These are log files for individual commands that run during the update. Success or failure and output from these commands is recorded in the `swm.log`. Unless directed by a message in another log file, there is no need to refer to these log files.

Updating to HP-UX 11i v3 using the command line interface

This section describes ways to use the `update-ux` command to update your system from the Command Line Interface (CLI).

update-ux command

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

`update-ux -s` *`source_location`* `-?-i-p-v-f` *`selection_file`*`-x` *`option=valuesw_spec ...`*

Table 11 update-ux command options

update-ux command options	Description
`-s` *`source_location`*	Specifies the source containing the new software depot. Possible locations are a local directory, a mounted DVD containing a depot, or a remote system-and-depot combination. All paths used in the *`source_location`* must be absolute paths. If *`source_location`* is a remote system and depot combination, specify the remote system first, followed by the absolute path to the remote depot, separated by a colon with no spaces. For example: `swperf:/var/spool/sw`
`-?`	Prints the usage statement.
`-p`	Previews an update task by running the session through the analysis phase only.
`-v`	Turns on verbose output to `stdout`.
`-f` *`selection_file`*	Reads the list of software selections from *`selection_file`* instead of (or in addition to) the command line. This option enables you to select and update optional software or to deselect recommended (default-installed) software.

Table 11 update-ux command options *(continued)*

update-ux command options	Description
`-x option=value`	Specifies `-x` options to be applied during the update. For a typical update, no `-x` options are required. For information on `-x` options, see the `swm` (1M) manpage or the *Software Distributor Administration Guide*.

sw_spec	Software selections support the same syntax as the `swinstall` command plus the syntax described in the selection syntax section below. The following syntax is supported for *sw_spec*:
	bundle[,*version*]
	product[.*subproduct*][.*fileset*][,*version*]
	!*selection*
	[*bundle*]/[%match]
	pattern-matching-expression
	where *version* can be:
	`[,r op revision][,a op arch][,v op vendor]`
	`[,c op category] [,q=qualifier][,l=location]`
	`[,fr op revision][,fa op arch]`
	where *op* can be:
	`=, ==, >=, <=, <, >, or !=`
	The = (equals) relational operator lets you specify selections with the shell wildcard and pattern-matching-expressions:
	`[ ], *, ?`
	The syntax `!selection` causes that selection to be deselected even if it was listed on the command line as part of other selections.

Updating to an Operating Environment from the command line

The `update-ux` command will automatically choose the OE that best matches the OE currently on your system.

- If your system already has an HP-UX 11i v3 BOE, HA-OE, VSE-OE, or DC-OE, the same OE will be automatically chosen.
- If you are updating from HP-UX 11i v2, or if your system has one of the "old" HP-UX 11i v3 OEs (FOE, EOE, MCOE, or TCOE), `update-ux` will choose the "new" OE that best matches the "old" OE.

IMPORTANT: If you choose to select an OE other than the one that was automatically chosen, you must adhere to an supported update path. See "Supported update paths" (page 18).

To update to a different HP-UX 11i v3 OE, you need to specify the OE name in the `update-ux` command. Insert the HP-UX 11i v3 DVD in the local drive mounted at /dvdrom. As root, enter:

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

The OE identifiers are as follows:

Table 12 OE identifiers

OE identifier	Operating Environment
`HPUX11i-BOE`	Base OE
`HPUX11i-VSE-OE`	Virtual Server OE
`HPUX11i-HA-OE`	High Availability OE
`HPUX11i-DC-OE`	Data Center OE

IMPORTANT: Make sure you install all *new* optional software included in the OE collection that you want at the same time that you do your update. See the next section.

Updating optional software from the command line

To update to HP-UX 11i v3 and specify additional optional software bundles on the command line, enter the name of the OE followed by the names of the optional software bundles. The following example assumes the desired OE is the Base OE:

```
/usr/sbin/update-ux -s /dvdrom HPUX11i-BOE optional_software_bundle_name
```

Completing the update

Upon completing your update, proceed to the next chapters:

- (optional) Chapter 7: “Installing applications and patches” (page 59)
- Chapter 8: “Post-install/update tasks and troubleshooting” (page 64)

TIP: After completing the update, store the HP-UX DVDs in a safe place. You might need them later to install additional drivers or other software.

7 Installing applications and patches

Chapter checklist

- “Installing HP-UX applications” (page 60)
  - “Tips for installing or updating HP applications” (page 60)
  - “Installing HP-UX applications from the DVDs” (page 60)
- “Third-party software and hardware” (page 60)
  - “Third-party (non-HP) storage compatibility with HP-UX 11i v3” (page 61)
  - “Third-party product installation scripts” (page 61)
- “HP-UX patching and patch management” (page 61)
  - “Standard HP-UX patch bundles” (page 61)
  - “Individual HP-UX patches” (page 63)
  - “HP-UX Software Assistant” (page 63)

IMPORTANT: Make sure you review the Appendix A: “Harmless messages and known problems” (page 72) for issues not discussed here that might apply to your system.

Also review the *HP-UX 11i v3 Release Notes* appropriate for your release (http://www.hp.com/go/hpux-core-docs-11iv3).

NOTE:
For historical reasons, the HP-UX 11i v3 Application Software DVDs are also known as the “Application Release” or “AR” DVDs.

TIP: With Dynamic Root Disk (DRD), you can reduce system downtime by:

- Provisioning new HP-UX systems with the DRD rehosting feature
- Performing updates from an older version of HP-UX 11i v3 to HP-UX 11i v3 March 2009 or later

For more information, see “Reducing downtime using Dynamic Root Disk” (page 29).

Installing HP-UX applications

Your HP-UX 11i v3 media kit might contain a set of HP-UX Application Software DVDs that provide a wide variety of HP-UX software products. You can install them new or use them to update existing software on your system.

To install applications from the HP-UX Application Software DVDs, you must have an HP-UX 11i v3 OE on your system. If you choose to install or update to a new OE, be sure you have completed the process before you install applications from the HP-UX Application Software DVDs.

△ **CAUTION:** For the majority of products included on the HP-UX Application Software DVDs, all dependencies are provided on the same set of DVDs. There might be exceptions, however. Consult the product's documentation for information about any additional installation requirements.

Tips for installing or updating HP applications

- The HP-UX Application Software DVDs have an ASCII file called `DVD_TABLE_OF_CONTENTS` that lists all software products delivered with the DVDs. You can view this ASCII file with `vi`, `emacs`, or any other text editor.

  You can also find the complete list of applications included in the HP-UX 11i v3 release on the HP Software Releases & Media site:

  http://www.hp.com/softwarereleases/releases-media2/index.html (Navigate to **Current HP-UX update releases** or **Prior HP-UX update releases**, then navigate to **HP-UX New/Updated product list** for the appropriate release date.)

- To minimize the number of required reboots for installation of applications and patches, you can create a network depot, copy all the products and patches into it, and use the same `swinstall` session. For information, see "Creating a network depot (optional)" (page 28).
- For HP applications, documentation exists that explains how to install and use an application. The documents might include release notes, readme files, CD and DVD booklets, white papers, and guides. Refer to the Instant Information DVD or search for the product at http://hp.com/go/bizsupport. (For information about this website, see Chapter 9 (page 68).

Installing HP-UX applications from the DVDs

1. Boot HP-UX 11i v3.
2. To determine which products and versions are on your system, use the `swlist` command:

   `/usr/sbin/swlist -l product`
3. Mount the first (or next) HP-UX Application Software DVD. (For instructions, see "Mounting and unmounting the DVD" (page 27).)
4. To install software from the Application Software DVD, use the `swinstall` command. The following example assumes the DVD is mounted at `/dvdrom`:

   `swinstall -i -s /dvdrom`

   For more information, see the *swinstall*(1M) manpage. The `swinstall` program presents an interface for selecting and installing software from the DVD.
5. Unmount and eject the Application Software DVD. (For instructions, see "Mounting and unmounting the DVD" (page 27).)
6. Repeat steps 3, 4, and 5 for each DVD.

Third-party software and hardware

This section provides miscellaneous tips and warnings about installing third-party (non-HP) software and using third-party hardware. The information in this section does not include any third-party

vendor or product-specific information. See the documentation supplied by the vendor for this type of information.

For information specifically concerning third-party hardware, see the **Third-party connectivity solutions** website:

http://www.hp.com/products1/serverconnectivity/third_party/

Third-party (non-HP) storage compatibility with HP-UX 11i v3

For an up-to-date list of third-party storage devices which have completed interoperability validation under the guidance of HP and have been qualified as interoperable with HP-UX 11i v3, see the website **Third Party Mass Storage Devices**:

http://www.hp.com/products1/serverconnectivity/mass_storage_devices.html

WARNING! If third-party (non-HP) storage will be connected to your HP-UX 11i v3 system, HP recommends that you contact your third-party storage vendor to determine the compatibility of the storage with HP-UX 11i v3. Check with your third-party storage vendor for information about any prerequisites and limitations with the storage on HP-UX 11i v3.

Third-party product installation scripts

For some third-party product installation scripts, `dtksh` is required for scripts to launch license-acceptance dialogs for Firefox.

What to do

Either install CDE to enable the script to run as expected, or execute `/opt/firefox/firefox` and manually accept the Firefox license.

HP-UX patching and patch management

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

NOTE: When you install or update HP-UX 11i v3, the latest critical patches that shipped with the media are installed on your system. However, other recommended critical or required patches might have become available after the initial release of the media. To manage patches and security bulletins most easily, you can use the HP-UX Software Assistant. For information, see "HP-UX Software Assistant" (page 63).

Standard HP-UX patch bundles

The standard HP-UX patch bundles update the HP-UX Core OS and applications on the HP-UX OE media. Standard patch bundles are collections of patches that have been thoroughly tested together. These patches enable new hardware, fix known defects, and enable new features. All patch bundle software is cumulative and completely replaces any previous bundle release for the same operating system (OS) release.

The following standard patch bundles are provided on the OE DVDs:

- Hardware Enablement Patch Bundle for HP-UX 11i v3 (`HWEnable11i`)

  Provides patches required for new systems and for add-on hardware supported on HP-UX 11i v3, including I/O adapters and devices.

- Feature Enablement Patch Bundle (`FEATURE11i`)

  Consists of required core patch files that meet dependencies for new or updated software products. Included patches might also enable new products/features or provide product enhancements. (Also provided on the Application Software DVDs.)

- Quality Pack Patch Bundles
  - Base Quality Pack Bundle (`QPKBASE`)

    Includes all stable, defect-fix patches for the Core OS, graphics, and key networking drivers.

  - Applications Quality Pack Bundle (`QPKAPPS`)

    Includes all stable, defect-fix patches for HP-UX Operating Environment (OE) applications.

In addition to being delivered on the OE DVDs, the standard HP-UX 11i v3 patch bundles are available at the HP Support Center (http://hp.com/go/hpsc).

NOTE: The HP IT Resources Center (http://itrc.hp.com) portal (formally the location for patches and patch bundles) has been retired and was migrated to the HP Support Center (http://hp.com/go/hpsc) in June 2011. To access the HP Support Center, you will require an HP Passport Login. See the FAQs at http://h20195.www2.hp.com/V2/GetPDF.aspx/c02761338.pdf. Once you have used your HP Passport to sign in at http://hp.com/go/hpsc, navigate to **Patch management** under "Download options" to access patch notes and downloads.

IMPORTANT:

You must use the updated Ignite-UX and Update-UX tools from September 2007 OE Update release (or later) to correctly install patches and HP-UX 11i v3 patch bundles. HP supports the following cold-install or update cases with a network depot that includes HP-UX patches or patch bundles.

To cold-install HP-UX 11i v3 using a network depot, use any release of HP-UX 11i v3 to create the network depot, and then copy the desired patch bundles into that depot. Use Ignite-UX version C.7.3 (or later) to cold-install HP-UX 11i v3. Get the latest Ignite-UX version from the IUX website: http://www.hp.com/go/ignite-ux

To update to the latest release of HP-UX 11i v3, start with the desired HP-UX 11i v3 OE bundles from the September 2007 release (or later) to create the depot, and then copy the desired patch bundles into the depot.

Updates to a network depot with the HP-UX 11i v3 OE bundles from February 2007 and 11i v3 patch bundles from September 2007 release or later cannot be supported, due to known problems with the initial release of 11.31 HP-UX software management tools (that get installed with OE bundles from February 2007).

Documentation

- HP strongly advises you review the "readme" document file that is delivered with each patch bundle. The document files can be found in the `OEDocs` directory on the OE DVDs and HP Support Center (http://hp.com/go/hpsc).
- The *Patch Management User Guide for HP-UX 11.x Systems* provides information and procedures for acquiring and installing standard HP-UX patch bundles. You can find the document at http://www.hp.com/go/patchmgmt-docs.
- For descriptions of changes to the standard HP-UX patch bundles, see the *HP-UX 11i Version 3 Release Notes* (http://www.hp.com/go/hpux-core-docs-11iv3) appropriate to your release.

Individual HP-UX patches

Individual patches can address known problems and security issues, as well as deliver additional software functionality. Individual patches can be downloaded at the HP Support Center (HPSC). Once you have used your HP Passport to sign in at http://hp.com/go/hpsc, navigate to **Patch management** under "Download options" to access patch notes and downloads.

Patches might be released between OEURs. HP recommends you register your product with Subscriber's Choice at http://www.hp.com/country/us/en/contact_us.html. (Under "Self Help," select **Subscription services**.) After registering, you will receive email notification with driver, support, and security alerts, plus software updates customized to your HP products.

HP-UX Software Assistant

HP-UX Software Assistant (SWA) is a tool that consolidates and simplifies patch management and security bulletin management on HP-UX systems.

SWA can perform a number of checks including applicable security bulletins and installed patches with critical warnings. Once an analysis has been performed, you can use SWA to download any recommended patches or patch bundles and create a depot ready for installation.

SWA requires an active HP support agreement (that includes Software Updates) linked to your HPSC profile. HP recommends you use SWA version C.02.90 or later.

Documentation

The following SWA documents are available at http://www.hp.com/go/swa-docs:

- The *HP-UX Software Assistant Release Notes* provides the features and functionality of the latest release, and known problems.
- The *HP-UX Software Assistant System Administration Guide* provides an introduction to the tool, how to use it, how to use the reporting, and troubleshooting.

8 Post-install/update tasks and troubleshooting

This chapter provides steps to verify that your system is ready and back in production. It also includes additional tasks you might need to perform, as well as instructions for uninstalling an HP-UX 11i v3 OE and removing applications and patches.

Chapter checklist

- “Verifying the HP-UX cold-install or update” (page 65)
- “Configuring Operating Environment applications” (page 65)
- “Migrating to the agile mass storage stack” (page 65)
- “System tuning for VxFS 4.1” (page 66)
- “Backing up the system” (page 66)
- “Uninstalling HP-UX 11i v3” (page 66)
  - “Removing applications and patches” (page 66)
- “Diagnostics” (page 66)
  - “Online diagnostics” (page 67)
  - “Offline diagnostics” (page 67)

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

Verifying the HP-UX cold-install or update

To verify that HP-UX 11i v3 was installed or updated successfully, use the Software Distributor commands `swlist` and `swverify`, as described in this section. For an update, you can also view the results of the update in the log file `/var/opt/swm/swm.log`. See Step 7 in "Updating to HP-UX 11i v3 using the terminal user interface" (page 49) for more information.

Before you begin, make sure you have already completed cold-installing or updating to HP-UX 11i v3.

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 DVD or at http://www.hp.com/go/sd-docs.

Part I: Listing all software installed on your system

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

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

2. Check the list to see that it contains the bundles and products you wish to have installed on your system.
3. For a cold-install, you might want to compare the output of the `swlist` command above with the contents of the HP-UX 11i v3 Operating Environment DVDs and the Application Software DVDs. To see the contents of a DVD, issue the following command:

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

Part II: Verifying the installed software

You can verify that all software was successfully installed on your system by entering the following command:

`/usr/sbin/swverify \*`

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

Configuring Operating Environment applications

After installing or updating to an HP-UX 11i v3 OEUR, some OE products need post-installation configuration to make them functional. This need might be indicated by a message logged in `/var/opt/swm/swm.log`.

See each product's installation instructions for details. The locations of documents for many OE products are listed in the *HP-UX 11i v3 Release Notes*, available on the Instant Information DVD and at http://www.hp.com/go/hpux-core-docs-11iv3. You can also search for product documentation at the Business Support Center (http://hp.com/go/bizsupport).

NOTE:
Prior to running the HP-UX vPars and Integrity VM v6.1 product, newly added to the VSE-OE and DC-OE in the March 2012 OEUR, be sure to review the *HP-UX vPars and Integrity VM V6.1 Release Notes* for additional information, including patches required for running the product.

Migrating to the agile mass storage stack

The new mass storage stack for HP-UX 11i v3 is intended to supersede the existing mass storage stack. However, in HP-UX 11i v3 both legacy and persistent DSFs can exist in parallel. Existing legacy DSFs will continue to work as before; they are completely backward compatible, and will

not be affected by any persistent DSFs on the same server. (The agile mass storage stack, as well as legacy and persistent DSFs, are discussed in "Next generation mass storage stack" (page 30).)

You may choose to migrate to the new agile mass storage stack or you can continue to use the legacy mass storage stack. However, if you want to use the new features of the agile mass storage stack and are not affected by existing limitations, you should consider migrating to the new mass storage stack.

For more information on the new mass storage stack and to migrate from the legacy view to the agile view, see the white papers "The Next Generation Mass Storage Stack: HP-UX 11i v3" and "HP-UX 11i v3 Persistent DSF Migration Guide" (http://hp.com/go/hpux-core-docs).

System tuning for VxFS 4.1

If your system has the minimum amount of memory, you might need to manually set VxFS tunables for optimal performance after cold-installing or updating to HP-UX 11i v3. Two VxFS tunables, `vx_ninode` and `vxfs_bc_bufhwm`, have an effect on system memory consumption. For guidelines on setting them for machines with relatively low RAM, see the *Veritas File System 4.1 Administrator's Guide* at http://hp.com/go/hpux-core-docs.

Backing up the system

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

For more information, see "Backing up your system" (page 22).

Uninstalling HP-UX 11i v3

If you cannot resolve problems after installing HP-UX 11i v3, then you might want to uninstall it. The process depends upon the install process you followed:

- If you previously created an operating system recovery image with either `make_net_recovery` or `make_tape_recovery` using Ignite-UX, boot the system from that media to return the OS and any archived applications to the previous release. See the *Ignite-UX Administration Guide* available on the Instant Information DVD and at http://www.hp.com/go/ignite-ux-docs.
- If you used a `drd` clone to create your system recovery image, use the `drd activate` command to boot the unmodified image. See "Choosing drd clone" (page 24).
- If you do not use Ignite-UX or DRD, or do not have a current operating system recovery image:
  - If your applications and data are on a separate disk from the OS, cold-install the previous OS. Doing this ensures a clean OS installation, removing all previous upgrade and patch information.
  - If applications, data, or both are on the same volume with the OS, boot from the previously-saved system recovery tape to return to a previous OS. These expert recovery processes are in the *Ignite-UX Administration Guide*.

Removing applications and patches

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`. For details, see the *Software Distributor Administration Guide* (http://www.hp.com/go/sd-docs).

Diagnostics

Now that you have installed or updated HP-UX, you can use it to keep your system running. The diagnostics software for HP servers helps you troubleshoot and fix problems when a hardware failure occurs.

Online diagnostics

The online diagnostics software, which is always-installed with HP-UX 11i v3, consists of two product bundles:

- `OnlineDiag` (Online Diagnostics)
- `SysFaultMgmt` (System Fault Management [SFM])

These bundles include many tools to help verify, troubleshoot, and monitor PA-RISC and Itanium-based system hardware such as processors, memory, power supplies, fans, interface cards, and mass storage devices. For more information about these products, see the documentation at at http://hp.com/go/hpux-diagnostics-online-docs.

Offline diagnostics

The Offline Diagnostic Environment (ODE) includes a set of offline support tools that enables you to troubleshoot a system that is running without an operating system. The ODE tools are provided on CDs for HP Integrity systems and HP 9000 systems. You can order the CDs at no charge or you can download the CD image and burn your own CD.

For instructions on how to order the ODE CD (or download the CD image), see the *Administrator's and User's Guide for Offline Diagnostics* (http://hp.com/go/hpux-diagnostics-offline-docs). Other ODE documentation, including release notes, is available at this site as well.

HP highly recommends that you get the latest CD and update the ODE for improved functionality. Note that the CD-ROMs are OS independent and ordered separately from each other and of any operating system media.

9 Support and other resources

Contacting HP

Before you contact HP

Be sure to have the following information available before you call contact HP:

- Technical support registration number (if applicable)
- Product serial number
- Product model name and number
- Product identification number
- Applicable error message
- Add-on boards or hardware
- Third-party hardware or software
- Operating system type and revision level

HP contact information

For the name of the nearest HP authorized reseller:

- See the Contact HP worldwide (in English) webpage (http://www.hp.com/country/us/en/wwcontact.html).

For HP technical support:

- In the United States, for contact options see the Contact HP United States webpage (http://welcome.hp.com/country/us/en/contact_us.html). To contact HP by phone:
  - Call 1-800-HP-INVENT (1-800-474-6836). This service is available 24 hours a day, 7 days a week. For continuous quality improvement, calls might be recorded or monitored.
  - If you have purchased a Care Pack (service upgrade), call 1-800-633-3600. For more information about Care Packs, refer to the HP website (http://www.hp.com/hps).
- In other locations, see the Contact HP worldwide (in English) webpage (http://www.hp.com/country/us/en/wwcontact.html).

Subscription service

HP recommends you register your product with Subscriber's Choice at http://www.hp.com/country/us/en/contact_us.html. (Under "Self Help," select **Subscription services**.) After registering, you will receive email notification with driver, support, and security alerts, plus software updates customized to your HP products.

Related documents

NOTE: Beginning in August 2011, the web is the primary source of technical documentation for the HP-UX Operating Environments and HP-UX Application Software. Web delivery supports HP's Green Business Technology Initiative to reduce packaging and also supports HP's goal to keep HP-UX technical documentation up-to-date and easily accessible.

The documentation can be viewed, downloaded, and printed from the web. For pointers to HP-UX documentation, see *A Guide to HP-UX Document Collections* at http://www.hp.com/go/hpux-core-docs-11iv3.

Websites for HP-UX 11i v3 information

- HP-UX 11i v3 Core Documentation
  http://hp.com/go/hpux-core-docs
- HP-UX Software Deployment Documentation
  http://www.hp.com/go/sw-deployment-docs
- QuickSpecs: HP-UX 11i v3
  http://h18004.www1.hp.com/products/quickspecs/12079_div/12079_div.PDF
- HP-UX Server Support Matrix
  http://www.hp.com/go/hpuxservermatrix
- HP_UX_Docs Twitter account
  http://www.twitter.com/HP_UX_Docs

Other sources for HP-UX 11i v3 information

The following sources provide detailed information about HP-UX 11i v3:

- HP-UX 11i v3 Instant Information DVD

  The documentation on the Instant Information DVD enables you to view various HP-UX documents before you install the software. The Instant Information DVD provides improved online presentation, print quality, and search capabilities.

- Manual Pages

  For the HP-UX 11i v3 release, the manual pages (manpages) are available on the HP-UX Welcome Page of your system, on the Instant Information DVD under the title "HP-UX Reference," through the use of the `man` command, and at http://hp.com/go/hpux-core-docs).

- Release Notes

  The *HP-UX 11i v3 Release Notes* documents describe what is new, has changed, and has been deprecated or obsoleted in the current release compared to the previous HP-UX 11i v3 release. You can find the *Release Notes* on the HP-UX Instant Information DVD and at http://www.hp.com/go/hpux-core-docs-11iv3.

- Getting Started Documents: README, Read Before Installing, Read This First

  The *Read Before Installing or Updating* media booklet (included with the media kit or electronic delivery) contains information about the installation/update process that might not appear in the *HP-UX 11i Version 3 Installation and Update Guide*. Additionally, any product contained in the release might have a Getting Started document, so several of them might be included in your kit or be available online.

- White Papers

  You can locate white papers on various HP-UX 11i v3 topics at http://hp.com/go/hpux-core-docs.

Other HP web resources

- HP Servers
  - HP BladeSystem: http://www.hp.com/go/blades
  - HP Integrity Server Family: http://www.hp.com/go/integrity
  - HP 9000 Server Family: http://www.hp.com/go/hp9000
- HP Workstations
  http://hp.com/go/workstations
- HP Software Depot
  http://www.hp.com/go/softwaredepot
- HP Support Center
  http://hp.com/go/hpsc
  The HP IT Resources Center (http://itrc.hp.com) portal has been retired and was migrated to the HP Support Center (http://hp.com/go/hpsc) in June 2011. You can find the latest patch status information on the HP Support Center website. To access the HP Support Center, you will require an HP Passport Login. See the FAQs at http://h20195.www2.hp.com/V2/GetPDF.aspx/c02761338.pdf.
- HP Software Releases and Media
  http://www.hp.com/softwarereleases/releases-media2/index.html
- Developer & Solution Partner Program (DSPP)
  http://www.hp.com/dspp
- Ignite-UX
  http://www.hp.com/go/ignite-ux
- Software Distributor
  http://www.hp.com/go/sd
- HP-UX Software Assistant
  https://www.hp.com/go/swa
- Dynamic Root Disk
  http://www.hp.com/go/drd

Typographic conventions

The following conventions are used in this document:

Table 13 Typographic conventions

Typeface	Usage	Examples
audit(5)	An HP-UX manpage. *audit* is the name and *5* is the section in the *HP-UX Reference*. From the HP-UX command line, enter "`man audit`" or "`man 5 audit`" to view the manpage. See *man*(1).	*audit*(5) *agent_config*(1M) *utild*(1M)
Italics	New terms, book titles, emphasis, or variables to be replaced by a name or value.	*Ignite-UX Reference* bootsys -R *`release`*
Key	The name of a keyboard key. Note that **Return** and **Enter** both refer to the same key.	**Esc**

Table 13 Typographic conventions *(continued)*

Typeface	Usage	Examples
Bold	The defined use of an important word or phrase.	**golden image**
`Computer`	Computer output, file contents, files, directories, software elements such as command options, function names, and parameters.	The DVD drive is connected at `/dev/dsk/c0t0d0`. `ignite`
`UserInput`	Commands and other text that you type.	**`bootsys -r`**
[ ]	The contents are command options. If the contents are a list separated by |, choose one of the items.	ls [-a] `mount [suid | nosuid ]`
. . .	The scrolling content is replaced to indicate extensive computer output or an excerpt.	. . . `cfg "Golden System" {`
WARNING	An alert that calls attention to important information that if not understood or followed can result in personal injury.	
CAUTION	An alert that calls attention to important information that if not understood or followed can result in data loss, data corruption, or damage to hardware or software.	
IMPORTANT	An alert that calls attention to essential information.	
NOTE	An alert that contains additional or supplementary information.	

A Harmless messages and known problems

This appendix provides information on harmless messages and problems you might encounter while installing or updating.

Appendix Checklist

- "Messages you can ignore" (page 73)
- "Known install and update problems" (page 75)

IMPORTANT: Be sure to review the latest version of this document. It can be found online at http://www.hp.com/go/hpux-core-docs-11iv3 and might include additional harmless messages and known problems.

Messages you can ignore

Table 14 describes harmless messages currently known to appear while installing or updating to HP-UX 11i v3.

Table 14 Messages you can ignore

When/where seen	Message/action
After upgrading from HP-UX 11i v2 to HP-UX 11i v3 March 2012, you might see the following messages in `swagent.log` during the configure phase of VRTSob:	`cat: Cannot open /opt/VRTSob/install/install.log: No such file or directory` `cat: Cannot open /opt/VRTSob/install/install.log: No such file or directory` `cat: Cannot open /opt/VRTSob/install/install.log: No such file or directory` `cat: Cannot open /opt/VRTSob/install/install.log: No such file or directory` `cat: Cannot open /opt/VRTSob/install/install.log: No such file or directory` **What to do** You can safely ignore these messages.
After upgrading from HP-UX 11i v2 to HP-UX 11i v3 March 2012, you might see the following message in `swagent.log` during the configure phase of VRTSobc33:	`vxregctl: queryvalue failed: Open failed on HKEY_LOCAL_MACHINE/Software/VERITAS/VRTSobc/pal33: Not found` **What to do** You can safely ignore this message.
After cold-installing HP-UX 11i v3 March 2012, the following WARNING message might appear on the console when a VxVM rooted system boots up:	`WARNING: VxVM vxdmp V-5-3-0 APM for array type ALUA is not available` **What to do** You can safely ignore this message.
For every WBEM event generated by SFM during installation or update, the following message will appear in `console.log` and `syslog.log`:	`smbios_get_table failed with status=3` **What to do** You can safely ignore this message.
When installing Network Interfaces Configuration and Network Services Configuration (`NetworkConf`), you might see a message about patch `PHNE_41971`:	`The filesets of NetworkConf is dependent on the patch PHNE_41971.` **What to do** You can safely ignore the message and proceed with the installation. The filesets `NETMG2-RUN` and `LANCRA-SHLIB` of the patch `PHNE_41971` or later are corequisites for the filesets of `NetworkConf` version B.11.31.12 or later. If a later version of patch `PHNE_41971` is installed, you might see the above message during installation of `NetworkConf`:

When updating a system from HP-UX 11i v2 to HP-UX 11i v3 March 2010 (or later), you might see unbundle messages for JPI 1.4.2 when running `swlist`:	`# Product(s) not contained in a Bundle:`
	`#`
	`Jpi14 1.4.2.xx.xx  Java2 1.4 Netscape Plugin`
	What to do
	You can safely ignore unbundle messages like the one above. Starting with March 2010, Java 1.4 (SDK, JRE, and JPI) is no longer delivered as part of the OEs and will no longer be updated on the OE media. However, the current Java 1.4 version on your system will remain when you update to HP-UX 11i v3 March 2010 (or later) from HP-UX 11i v2 or an earlier version of HP-UX 11i v3.

During cold-install of HP-UX 11i v3 March 2010 (or later), the following message is logged to the `console.log`, `swagent.log`, and `swm.log`:	`NOTE: Adding VM provider to Veritas Enterprise Administrator Service registry file...`
	`Error during initialization of XML Parser: /etc/vx/isis/objecttypes.xml`
	What to do

Table 14 Messages you can ignore *(continued)*

When/where seen	Message/action
	You can safely ignore this message.
Updating from HP-UX 11i v2 to HP-UX 11i v3 might cause the following error to appear in `swagent.log`:	`cp: cannot access /.secure/etc/*: No such file or directory` **What to do** You can safely ignore this message.

Known install and update problems

Table 15 (page 75) describes problems currently known to occur while installing and/or updating to HP-UX 11i v3.

Table 15 Known install and update problems

Problem	Description/action
System might hang if `/usr/lbin/utild` is running during installation or update of `SATADVD-00` driver	When using `swinstall` to install or update the `SATADVD-00` driver, the system might hang if the `/usr/lbin/utild` daemon is active. This issue is known to occur only on rx2800 i2 systems, but might also occur elsewhere. **What to do** Before updating the `SATADVD-00` driver with `swinstall`, stop `/usr/lbin/utild`, then restart it after installing or updating the driver. For further information, including instructions for halting `utild`, see *SATADVD-00 (satadvd) B.11.31.1203 Mass Storage Driver Release Notes* at http://www.hp.com/go/general-io-docs.

Upgrade of RAIDSA-PROVIDER, FC-PROVIDER, SAS-PROVIDER, and WBEMP-Storage might fail	If your system is running low on memory and you have a huge number of database record entries, then upgrade of RAIDSA-PROVIDER, FC-PROVIDER, SAS-PROVIDER, and WBEMP-Storage might fail. You will see a version of the following error in `swagent.log`. (The example below is for FC-PROVIDER.)
	`NOTE: Adding FC Provider monitoring job.`
	`NOTE: Creating the FC log database`
	`ERROR: FC log database setup failed. Aborting install.`
	`ERROR: The "configure" script for "WBEMP-FCP.FCP-NIP-RUN" failed(exit code "1"). The script location was`
	`"/var/tmp/BAA015943/catalog/WBEMP-FCP/FCP-NIP-RUN/configure".`
	`* This script had errors and the execution of this fileset cannot proceed until the problem is fixed. Check the above output from the script for further details.`
	What to do
	For information on a fix for this problem, see QXCR1001188297 at the HP Support Center (http://hp.com/go/hpsc). Click **Search support knowledge**, then select **Search by document ID** for your search mode. Enter "ttr_na-SSB_1001188297" in the box.

User and group IDs of HP SMH conflicts with user and group IDs of LDAP and other network services	When HP SMH is installed, the user `hpsmh` and group `hpsmh` are automatically added to the `/etc/passwd` file. If you are using LDAP or any other network service for managing user and group accounts, there is a possibility that the user ID (UID) and the group ID (GID) of `hpsmh` are already in use by LDAP-users. The duplication of user and group IDs results in changes in file ownership. This problem occurs in HP-UX 11i v3 on Integrity systems.
	What to do
	As a workaround, before installing HP SMH, you must manually add a local `hpsmh` user and group using unique UID and GID. First, determine the available reserved IDs for the group (say, 130) and the user (say, 125). Ensure these IDs are not in use by LDAP or other network services. Then add the group using the following command:
	`/usr/sbin/groupadd -g 130 hpsmh`
	After adding the group, add the user using the following command:
	`/usr/sbin/useradd -u 125 -g hpsmh -d \`
	`/var/opt/hpsmh -c "System Management Homepage" hpsmh`
	Note: If you do not manually add the group and user before installing HP SMH, during installation HP SMH creates the group and user using locally available IDs, which may already be in use on the network.

User and group IDs of HP WBEM Services conflict with user and	During installation, HP WBEM Services creates a user `cimsrvr` and a group `cimsrvr`. If you are using Network Information Services (NIS), Lightweight Directory

Table 15 Known install and update problems *(continued)*

Problem	Description/action

group IDs of NIS, LDAP, and other network services	Access Protocol (LDAP), or any other network service for managing user and group accounts, there is a possibility that the user ID (UID) and the group ID (GID) created for HP WBEM Services are already in use by other users. The duplication of user and group IDs results in a change in file ownership and can stop applications working correctly.
	This issue is only applicable for HP WBEM Services A.02.07 and later versions.
	What to do
	For systems using LDAP or other network services, before installing HP WBEM Services, you must manually add a local `cimsrvr` user and group using a unique UID and GID. You must first determine the available reserved IDs for the group (for example, 130) and for the user (for example, 125) ensuring that these IDs are not in use by LDAP or other network services. Run the following command to add the group:
	`/usr/sbin/groupadd -g 130 cimsrvr`
	After creating the group, run the following command to add the user:
	`/usr/sbin/useradd -u 125 -g cimsrvr -d \`
	`/var/opt/wbem -c "WBEMServices" cimsrvr`
	Note: If you do not manually add the group and the user before installing HP WBEM Services, the installation scripts add a group and user using locally available IDs, returned by *useradd*(1M) and *groupadd*(1M), which may already be in use on the network.
	For systems using NIS, the problem is encountered when HP WBEM Services is installed as part of a custom bundle that requires a system reboot or if NIS is stopped for any other reason while the HP WBEM Services installation is performed. In the former case, this is because the HP WBEM Services configure phase (when the user and group are created) is run before NIS is up and running after a system reboot. To avoid this problem on systems that have NIS configured, install the HP WBEM Services upgrade on its own or as part of a custom bundle that does not contain updates that require a system reboot.
	This problem does not affect new installations where the `cimsrvr` user and group are present before NIS, LDAP, or other network services are configured; or minor upgrades of HP WBEM Services where the `cimsrvr` user and group are present from an installation of HP WBEM versions earlier than version A.02.07.

HP-UX Security Containment Extensions version B.11.31.01 might produce unexpected behaviors and `swverify` errors	If you have installed HP-UX Security Containment Extensions (`ContainmentExt` bundle) version B.11.31.01 (which includes the `CompartmentLogin` and `ContainmentWiz` products) from the HP-UX 11i v3 March 2009, September 2009, or March 2010 OE media, you might experience unexpected behaviors while using HP-UX Compartment Login and HP-UX Containment Wizard. In addition, when you update the OE with `ContainmentExt` B.11.31.01 to a newer OE version, you might find `swverify` errors that indicate `ContainmentExt`, `CompartmentLogin`, and/or `ContainmentWiz` are not found on the system. **What to do** Update the product bundle to version B.11.31.01.01 or later, which can be obtained from http://software.hp.com, or from the HP-UX 11i v3 September 2010 OE media. Then you can install or update to your target HP-UX 11i v3 OE media.
Issues with HP Smart Array P700m RAID controllers	New installation of a P700m controller is not recommended on HP-UX 11i v3 releases prior to March 2010. HP-UX 11i v3 Releases prior to March 2010 might not guarantee that P700m Device Special Files (DSFs) are persistent between releases. This can cause data on arrays to become unavailable after you upgrade to the March 2010 (or later) release of HP-UX 11i v3. **What to do**

Table 15 Known install and update problems *(continued)*

Problem	Description/action
	If you have an HP Smart Array P700m already configured on any of the following releases, you must contact HP Support before you upgrade to the March 2010 release: • HP-UX 11i v3 March 2009 Release • HP-UX 11i v3 June 2009 WEB release • HP-UX 11i v3 September 2009 Release • HP-UX 11i v3 September 2009 WEB Release If you are considering a new installation of an HP Smart Array P700m Controller, HP recommends that you configure it on HP-UX 11i v3 March 2010 release or later. If you have a Smart Array P700m controller configured on any HP-UX 11i v3 release prior to March 2010, you must contact HP Support before upgrading to a newer release. For further information on contacting HP support, see Chapter 9: "Support and other resources" (page 68).

`drd runcmd update-ux` fails with local source depots	When executing `drd runcmd update-ux` using a directory depot (or mounted media) that resides on the active system image, the command fails with this error:
	`ERROR: The expected depot does not exist at "<depot_name>"`
	What to do
	In order to use a directory depot on the active system image, you will need to install March 2010 (or later) Dynamic Root Disk (DRD), Software Manager (SWM), and Software Distributor (SW-DIST) products from an OE depot. This must be done before the clone is created, so the new DRD, SWM, and SW-DIST are on the active system and on the clone.
	The following assumes the OE depot is at `/var/depots/1003-DCOE`. This must be executed as root:
	`swinstall -x autoselect_dependencies=false \`
	`-s /var/depots/1003-DCOE \`
	`DRD SWM SW-DIST PHCO_36525`

DRD updates directly from September 2010 OE (or later) media require the September 2010 OE (or later) versions of DRD, SWM, and SW-DIST	DRD updates directly from media will fail unless you install the September 2010 OE (or later) versions of DRD, SWM, and SW-DIST.
	What to do
	In order to use a media depot to do a DRD update, you will need to first install September 2010 (or later) versions of DRD, SWM, and SW-DIST products from the media. This must be done before the clone is created, so the new DRD, SWM, and SW-DIST are on the active system and on the clone.
	To install these products execute a command like the following. (This assumes that the first DVD of the September 2010 or later release is mounted to `/SD_CDROM`.)
	`swinstall -x autoselect_dependencies=false -s /SD_CDROM \`
	`DRD SWM SW-DIST PHCO_36525`
	Now you can create the clone, then perform an OE update from media on the clone.

Certain `nsswitch.conf` entries not supported by `drd runcmd`	DRD `runcmd` does not support the following `nsswitch.conf` entries on the clone while managing software through `drd runcmd`. If the file contains them, the `runcmd` will fail.
	`passwd: compat`
	`group: compat`
	`hosts: nis [NOTFOUND=return] files`
	You might see these errors during the execution of `drd runcmd` if your `nsswitch.conf` file contains the "hosts: nis" entry:
	`ERROR: Could not contact host "myserver". Make sure the hostname is correct and`

Table 15 Known install and update problems *(continued)*

Problem	Description/action

	an absolute pathname is specified
	(beginning with "/").
	You might see these errors during the execution of `drd runcmd` if your `nsswitch.conf` file contains the "passwd compat" or "group: compat" entries:
	`ERROR: Permission is denied for the current operation. There is no entry for user id 0 in the user database. Check /etc/passwd and/or the NIS user database.`
	What to do
	Since DRD does not need NIS to be running during `swinstall`, `swremove` or update, you may move the `nsswitch.conf` file on the clone to a temporary location. After you are done modifying the clone, you may move it back.
	`# drd mount`
	`# bdf`
	`# mv /var/opt/drd/mnts/sysimage_001/ \`
	`etc/nsswitch.conf/ \`
	`var/opt/drd/mnts/sysimage_001/etc/nsswitch.conf.orig`
	`# drd runcmd`
	`# mv /var/opt/drd/mnts/sysimage_001/ \`
	`etc/nsswitch.conf.orig? \`
	`var/opt/drd/mnts/sysimage_001/etc/nsswitch.conf`
	Alternatively, you may remove the "passwd" and "group" entries that contain "compat" from the clone's `/var/opt/drd/mnts/sysimage_001/etc/nsswitch.conf` file and replace the "hosts" entry with:
	hosts: dns [NOTFOUND=return] nis [NOTFOUND=return] files

During update to the September 2009 11i v3 OE, patches might be partially installed	During an update from an earlier HP-UX 11i v3 OE to the September 2009 HP-UX 11i v3 OE, one or more patches might be partially installed. You might see the following warning after running `swverify` on the system updated with the September 2009 OE:
	`WARNING: The patch "PHCO_37128,l=/,r=1.0" contains some filesets which are superseded and some filesets which are not superseded. The superseding patch may be incorrect or may need to be reapplied.`
	What to do
	Run `/usr/contrib/bin/check_patches` and follow the instructions under "Missing Patch Filesets" in the `check_patches` report. It will instruct you to `swinstall` the appropriate patches as follows:
	`WARNING: HP-UX 11.X patches consist of one or more filesets which are installed only if the corresponding product fileset is present. If a product fileset is installed or reinstalled after a patch, the patch fileset will not be present.`
	`Based on the product filesets that are currently installed, the following active patches appear to be missing some applicable patch filesets:`
	`PHCO_38806 is missing patch fileset INET-ENG-A-MAN`
	`PHCO_39297 is missing patch fileset INET-JPN-E-MAN`
	`PHCO_39297 is missing patch fileset INET-JPN-S-MAN`
	`To insure proper operation of these patches, they should be installed again. It is not necessary to use the swinstall(1M) reinstall option, as only the missing patch filesets need to be installed. The swinstall(1M) process will automatically install only the applicable patch filesets that are missing.`

Update using HP-UX 11i v3 March 2009 from OE media might fail	On an HP Integrity system, update from HP-UX 11i v3 September 2008 to HP-UX 11i v3 March 2009 (or later) using OE media might fail when the kernel base

Table 15 Known install and update problems *(continued)*

Problem	Description/action
when the base page size is not 4K or 8K	page size (BPS) is set to greater than the 8K value. The update failures were seen on systems with the HP Integrity Virtual Machines (Integrity VM or HPVM) product (`VMKernelSW` bundle versions B.04.00 and later) that automatically sets BPS to 64K. The failures might also occur on HP Integrity systems that have BPS set to 16K or 64K values. The Tunable Base Page Size feature (introduced in September 2008 OE Update) enables these changes (see the *base_pagesize*(5) manpage). The update from OE media might fail in one of two ways on systems with BPS > 8K: **1.** A read error while reading filesets from the OE media, with a "Bad Address (14)" wording in the error message. Installing `PHKL_39114` will fix the read error. **2.** The update might hang while installing the filesets from the March 2009 OE (or later) media. Installing `PHKL_39114` will not fix this critical problem. **What to do** Before performing an update using the March 2009 OE (or later) media, install patches `PHKL_39509` and `PHKL_39594` on HP Integrity systems (which fixes the defect with the FS buffer cache on systems with the 64K base page size). The patches can be installed from the HP-UX 11i v3 September 2009 (or later) media. The system will reboot after installing these patches. After the system boots, you can proceed with the update. OR If your kernel base page size (BPS) is set to larger than 8K, then set the BPS to 4K before performing the update. After you have updated your system, return the BPS to its former value. For detailed notes on work-arounds and recovery steps, see QXCR1000907205 and QXCR1000868519 at the HP Support Center (http://hp.com/go/hpsc). Click **Search support knowledge**, then select **Search by document ID** for your search mode. Enter "ttr_na-SSB_1000907205" and "ttr_na-SSB_1000868519" in the box.

Install or update of an older OE with certain patches in a combined depot might result in errors	If you ignite or update a system to an Operating Environment (OE) older than March 2009 using a **combined depot** that also contains certain patches, the session might result in the following error messages in `swagent.log`:
	`* Installing fileset "PHKL_`*nnnnn*`.C-INC,r=1.0" (`*nnn*` of `*nnn*`).`
	`ERROR: Cannot read from the file "/var/adm/sw/products/ProgSupport/C-INC/INFO": No such file or directory (2).`
	`ERROR: Rebuilding the Installed Products Database has failed.`
	`You may need to retry this operation.`
	The problem is due to tools in pre-March 2009 OEs incorrectly handling certain patch dependency and ancestor relationships. Patches `PHKL_38623`, `PHKL_38733`, `PHKL_38715`, `PHKL_38762`, and possibly other patches can trigger this problem. These patches are contained in the March 2009 (or later) `FEATURE11i` bundle, and possibly other March 2009 (or later) patch bundles.
	Due to header files missing from the `ProgSupport.C-INC` fileset, a compile of C source code will fail. Many of the header files in the `/usr/include` directory tree or in `/usr/old/usr/include` will be missing. A `swverify` check will not detect the missing files.
	What to do
	To avoid this problem, Ignite or update to the older OE first. Then install the desired patches from the March 2009 (or later) `FEATURE11i` bundle. *Do not install or update an older OE with the `FEATURE11i` bundle (or referenced patches) in a combined depot.*
	To repair damage that might have resulted from this problem, follow the steps described in QXCR1000902981. Go to the HP Support Center (http://hp.com/go/hpsc). Click **Search support knowledge**, then select **Search by document ID** for your search mode. Enter "ttr_na-SSB_1000902981" in the box.

Table 15 Known install and update problems *(continued)*

Problem	Description/action
HFS file system block size must be greater than or equal to system base page size	The HP-UX 11i v3 September 2008 release includes the option to tune the system base page size to values larger than its 4 KB default. Integrity Virtual Machines always uses this feature to tune the system base page size in the host to 64 KB. HFS file systems will fail to mount when the file system block size is less than the system base page size. **What to do** If you are performing an update, and plan to use a non-default base page size, replace each HFS file system with a VxFS file system. For each existing HFS file system, create a new VxFS file system and copy the contents of the HFS file system to the VxFS file system. HP does not recommend using HFS file systems on systems where the base page size will be tuned to a non-default value. While HFS file systems can be configured to work in this environment, VxFS administration is much simpler than HFS administration with non-default base page sizes. During a cold-install, configure all physical file systems as VxFS file systems. For information about the new tunable that controls the size of a system base page, see "Tunable Base Page Size" in the *HP-UX 11i Version 3 September 2008 Release Notes* (http://www.hp.com/go/hpux-core-docs-11iv3).

NFS*MAN filesets produce `swverify` errors during install/update or removal	After an HP-UX 11i v3 install/update, the `swverify` command might report that one or more of the following `ONCplus.NFS` manpage files is missing:
	`/usr/share/man/man1m.Z/portmap.1m`
	`/usr/share/man/man1m.Z/umount_nfs.1`
	`/usr/share/man/ja_JP.eucJP/man1m.Z/umount_nfs.1m`
	`/usr/share/man/ja_JP.SJIS/man1m.Z/umount_nfs.1m`
	The hard links to the affected manpages were incorrectly removed by the install/update process.
	What to do
	As superuser, recreate the missing links by executing the following commands, as needed:
	`# cd /usr/share/man/man1m.Z`
	`# ln rpcbind.1m portmap.1m`
	`# ln mount_nfs.1m umount_nfs.1m`
	`# cd /usr/share/man/ja_JP.eucJP/man1m.Z`
	`# ln mount_nfs.1m umount_nfs.1m`
	`# cd /usr/share/man/ja_JP.eucJP`
	`# ln mount_nfs.1m umount_nfs.1m`

Warning message when performing `swcopy`, `swlist`, or `swverify`	If you are on an HP-UX 11i v1 system and perform `swcopy`, `swlist`, or `swverify` on a depot containing HP-UX 11i v2 or HP-UX 11i v3 software, you might encounter the following warning message: `WARNING: Ignoring duplicate information for the keyword "dynamic_module" at line.` **What to do** For `swlist` or `swverify` on HP–UX 11i v1, you can safely ignore this message. For `swcopy` on HP–UX 11i v1, install patch `PHCO_28848` (or a superseding patch) on the HP–UX 11i v1 system, then re-run the `swcopy` command with `"-x reinstall=true"`.

B Installing the Symantec products VxFS, OnlineJFS, LVM, and VxVM

Starting with the HP-UX 11i v3 March 2012 Operating Environment Update Release (OEUR), VxFS 5.0.1 is a *required* (always-installed) product. The default configuration for all systems in March 2012 is VxFS 5.0.1 plus Logical Volume Manager (LVM).

VxFS 4.1 and OnlineJFS 4.1 are still available in HP-UX 11i v3, and you still have the ability to use those previous versions in a supported environment for the lifecycle of HP-UX 11i v3. However, HP highly recommends you move to VxFS 5.0.1 and OnlineJFS 5.0.1 as soon as possible to ensure you receive the most comprehensive support ecosystem as well as enhanced scalability, manageability, high-availability, and performance.

The HP-UX 11i v3 March 2012 OEUR includes the following Symantec software:

- **VxFS 4.1** (`Base-VXFS` bundle) — required (always-installed) in all OEs
- **OnlineJFS 4.1** (`B3929EA` bundle) — optional in DC-OE, VSE-OE, and HA-OE
- **VxFS 5.0.1** (`Base-VxFS-501` bundle) — required (always-installed) in all OEs
- **OnlineJFS 5.0.1** (`B3929GB` bundle) — recommended (default-installed) in DC-OE, VSE-OE and HA-OE
- **Logical Volume Manager** (`BaseLVM` bundle) – required (always-installed) in all OEs
- **VxVM 5.0.1** (`Base-VxVM-501` and `Base-VxTools-501` bundles) — optional in all OEs

If you want to remain on configurations that include versions 4.1, 5.0, or 5.1SP1 (available separately) of VxFS, OnlineJFS, or VxVM, see "Other supported configurations" (page 83). For information on what happens if you attempt an unsupported configuration, see "Unsupported system configurations" (page 83) .

NOTE: VxFS 4.1 and VxVM 4.1 are not supported on Intel Itanium 9300 series processors or later.

What's new for delivery of the Symantec products

VxFS 5.0.1 now required (always-installed)

With the September 2008 OEUR, VxFS 4.1 and 5.0 were included in the OEUR and AR media, and VxFS 4.1 was installed by default. With the September 2009 OEUR, VxFS 4.1 and 5.0 were still included in the release, but VxFS 5.0 was installed by default.

With the September 2011 OEUR, VxFS 4.1 and 5.0.1 were included in the OEUR and AR media. VxFS 5.0.1 replaced 5.0 and was a recommended (default-installed) product. Although VxFS 4.1 was a required (always-installed) product, installation defaulted to VxFS 5.0.1. If you preferred to stay on VxFS 4.1, you could explicitly deselect VxFS 5.0.1.

Starting with the March 2012 release, VxFS 4.1 and 5.0.1 are still included in the OEUR and AR media. However, VxFS 5.0.1 is now a *required* (always-installed) product. That means you can no longer deselect VxFS 5.0.1 (`Base-VxFS-501`) in the Ignite-UX tool. If you want a configuration that does not include VxFS 5.0.1, see "Other supported configurations" (page 83).

VxVM 5.0 replaced by VxVM 5.0.1

Starting with the September 2011 release, VxVM 5.0 has been replaced by VxVM 5.0.1, and VxVM 5.0 is no longer included on the OEUR and AR media. Note that VxVM 5.0.1 is optional, and LVM is installed by default. To install VxVM 5.0.1, you must select it in Ignite-UX.

Supported 5.0.1 configurations

During cold-install or update, **supported** VxFS 5.0.1 and VxVM 5.0.1 installations are achievable with the proper selections in the Ignite-UX tool.

VxFS and VxVM installation through cold-install

VxFS 5.0.1 with LVM configuration

A default cold-install will result in an LVM system with VxFS 5.0.1 and OnlineJFS 5.0.1 installed. (OnlineJFS is only available on the DC-OE, VSE-OE and HA-OE, so it will not be installed with the BOE.) No additional selections in Ignite-UX user are needed to cold-install this configuration.

VxFS 5.0.1 with VxVM 5.0.1 configuration

To cold-install VxFS 5.0.1 with VxVM 5.0.1, manually select **VxVM with VxFS environment** (in the Ignite-UX **Basic** tab) *and* manually select VxVM 5.0.1 (`Base-VxVM-501` and `Base-VxTools-501`) in the **Software** tab for install. You must do both (explicitly select the VxVM "environment" and the VxVM 5.0.1 bundles [`Base-VxVM-501` and `Base-VxTools-501`]) or Ignite-UX will fail with this error:

```
ERROR: The system has VxVM configured, but the VERITAS Volume Manager software was not selected for loading.
You are required to load it in order for the installation to succeed.
Use the software selection screen to mark the appropriate VxVM software for loading.
```

VxVM and VxFS installation with update-ux

All of the configurations described in "VxFS and VxVM installation through cold-install" (page 82) can also be achieved when updating your system with `update-ux`.

IMPORTANT: If you have created any VxFS file system with disk layout version 2 or version 3, these file systems cannot be mounted under VxFS 5.0.1 on HP-UX 11i v3.

What to do

Use the `vxfsconvert` or `vxupgrade` command to upgrade the disk layout to version 4 before upgrading to VxFS 5.0.1 on HP-UX 11i v3. For more information, see the *Veritas 5.0.1 Installation Guide* at http://hp.com/go/hpux-core-docs.

VxFS 5.0.1 with LVM configuration

As with cold-install, the update process will default to VxFS 5.0.1 with LVM.

VxFS 5.0.1 with VxVM 5.0.1 configuration

As with cold-install, updates to September 2011 OEUR and beyond will not install VxVM by default. To update to the VxFS 5.0.1 with VxVM 5.0.1 configuration, you must explicitly select VxVM 5.0.1 in the `update-ux` command line:

```
# update-ux -s depot_path Base-VxFS-501 Base-VxVM-501 Base-VxTools-501
```

NOTE: If VxVM is not selected for installation during update and VxVM is currently not in use, update scripts built into the September 2011 OEUR and beyond will automatically remove any unused older versions of VxVM from your system.

Updating from HP-UX 11i v2 with OnlineJFS 4.1 to HP-UX 11i v3 with OnlineJFS 5.0.1

To update HP-UX 11i v2 systems that are installed with HP-UX 11i v2 OnlineJFS 4.1 and that you want to update to HP-UX 11i v3 with OnlineJFS 5.0.1 (`B3929GB`), you must deselect HP-UX 11i v3 OnLineJFS 4.1 (B3929EA) during the update. This can be done in the `update-ux` command line as follows:

```
# update-ux -s source_location !B3929EA B3929GB
```

The `!B3929EA` entry on the command line ensures that 11i v3 OnLineJFS 4.1 is not installed from the depot during the update.

IMPORTANT: When OnlineJFS 5.0.1 (B3929GB) is selected in the preceding scenario, the following warning from update-ux might be seen during selection time:

```
WARNING: The following was found while selecting software:
- There are new revisions of SW available in the source that would update SW already installed on the system.
The newer revisions are not selected for installation. This could leave the incompatible old revision of SW on
 the system. The affected SW is:
- OnlineJFS.VXFS41-AD-RN,r=B.11.31 replaces
   OnlineJFS01.VXFS41-AD-RN,r=4.1.004
```

What to do

This warning can be safely ignored. The update will complete successfully despite this warning. This harmless message is also listed in Appendix A: "Harmless messages and known problems" (page 72)

Other supported configurations

If you want to remain on VxFS and VxVM versions 4.1, 5.0, or 5.1SP1 (available separately), see the white paper "Installation of non-default VxFS and VxVM software version on HP-UX 11i v3 March 2012 Operating Environment Update Release" at http://hp.com/go/hpux-core-docs. The paper includes detailed instructions for the following supported configurations and other considerations:

- LVM with VxFS 4.1 Configuration
- VxVM 4.1 with VxFS 4.1 Configuration
- Updates from HP-UX 11i v2 with OnlineJFS 4.1 to HP-UX 11i v3 with OnlineJFS 4.1
- Updates to HP-UX 11i v3 with VxVM 4.1
- LVM with VxFS 5.0 Configuration
- VxVM 5.0 with VxFS 5.0 Configuration
- Updates from HP-UX 11i v2 with OnlineJFS 5.0 to HP-UX 11i v3 with OnlineJFS 5.0
- Updates to HP-UX 11i v3 with VxVM 5.0
- LVM with VxFS 5.1SP1 Configuration
- VxVM 5.1SP1 with VxFS 5.1SP1 Configuration
- Updates from HP-UX 11i v2 with OnlineJFS 5.0 to HP-UX 11i v3 with OnlineJFS 5.1SP1
- Updates to HP-UX 11i v3 with VxVM 5.1SP1

Unsupported system configurations

Many different configurations are selectable at update time, but not all of them will result in supported system configurations. For this reason, pre-update scripts built into the September 2011 OEUR and beyond will block certain updates before they start. This will prevent updates into unstable configurations. The scripts will print an error message, and the error can be resolved by restarting the update with different software selections.

For example, if your existing 11i v3 system has VxFS 4.1 and VxVM 4.1 configured, and you attempt to update to the September 2011 OEUR (and beyond) with only VxFS 5.0.1 selected, the OEUR scripts will block the update. This is done because this update would result in a system that has VxFS 5.0.1 and VxVM 4.1 installed—an unsupported combination of versions. To resolve this error, simply restart the update after selecting both VxFS 5.0.1 and VxVM 5.0.1 in update-ux, so that the update results in matching 11i v3 versions of VxFS and VxVM.

Other unsupported paths will also be blocked by the scripts of September 2011 OEUR (and beyond), and can be resolved in similar ways. (The other most common blocked update occurs when HP-UX 11i v2 VxVM is in use on a system but you have forgotten to select VxVM 5.0.1 at update time.)

C HP-UX 11i v3 Operating Environment software bundles

Starting with the March 2008 release, HP presents a set of new Operating Environments for HP-UX 11i v3. These new Operating Environments provide a richer set of products and improved choices over the original set of HP-UX 11i OEs. For more information on the new OEs, see "HP-UX 11i v3 Operating Environments" (page 7). For more information on transition, mapping, etc. from original OEs to new OEs, see http://h20338.www2.hp.com/hpux11i/us/en/products/hpux11iv3-oes-support-costs.html.

HP-UX 11i v3 Operating Environment install/update structure

HP-UX 11i v3 has an Operating Environment (OE) structure that provides more flexibility in managing the products you want to install and update on your system.

HP-UX 11i v3 software product categories

The OE structure for HP-UX 11i v3 separates software components into several product categories, making it easier and more reliable for you to incrementally update your system with OE software components.

Table 16 HP-UX 11i v3 software product categories

Software category	Description
CompilersDevelopment	Compilers and Development Tools
CoreOS	Core HP-UX Functionality
Desktop	Desktop Environments
Disksfile systems	File Systems and Volume Management
Drivers	I/O Drivers
HighAvailability	High Availability
InetServices	Internet Services
Internet	Internet Software Tools
Interoperability	Computing Interoperability Tools
Java	Java Tools and Utilities
Localization	Localization
Manuals	HP-UX Manual Pages (manpages)
Migration	Migration to HP-UX Tools
Networking	Networking Infrastructure
Obsolescence	Product Obsolescence
Performance	Performance Tools
Security	Security Tools
SecurityChoices	Security Level Choices
SupportTools	Diagnostic and Support Tools
SystemManagement	System Management Tools
Utilities	Miscellaneous Utilities
OE Optional	All optional (selectable) bundles in the OE

Table 16 HP-UX 11i v3 software product categories *(continued)*

Software category	Description
OE Recommended	All recommended (default-installed) bundles in the OE
OE Required	All required (always-installed) bundles in the OE

HP-UX 11i v3 software installation types

Each of the software product categories contain software bundles that are further separated into the following installation types:

Table 17 HP-UX 11i v3 software installation types

Installation Type	Description
Required (always-installed)	Software and administration tools needed to create a minimally bootable and maintainable system. Only the drivers for basic hardware are included in this category. You might need to install additional drivers to use all hardware components. Software in this category *cannot* be deselected. The following table lists the required software in all OEs: • Table 18: "HP-UX 11i v3 required software" (page 86)
Recommended (default-installed)	Software bundles that HP recommends you install because they fulfill software dependencies, if any exist. You can, however, manually deselect the bundles before you install or update your system. To install a minimal operating system configuration (base OS) you can deselect the recommended bundles. Only the minimal core OS will be installed on your system when you deselect the recommended bundles. **CAUTION:** HP recommends that you do **not** deselect recommended software bundles or remove them from your system unless you know for certain that the software contained in these bundles is not required for your operating environment. Software might have unstated dependencies. Deselecting software might prevent products with dependencies on the software you deselected from functioning correctly. The following tables list the recommended software in each OE: • Table 19: "HP-UX 11i v3 BOE recommended software" (page 87) • Table 21: "HP-UX 11i v3 VSE-OE recommended software" (page 92) • Table 23: "HP-UX 11i v3 HA-OE recommended software" (page 93) • Table 25: "HP-UX 11i v3 DC-OE recommended software" (page 94)
Optional (selectable)	Software bundles that are not installed or updated by default. You must manually select these bundles before you install or update your system. The following tables list the optional software in each OE: • Table 20: "HP-UX 11i v3 BOE optional software" (page 90) • Table 22: "HP-UX 11i v3 VSE-OE optional software" (page 93) • Table 24: "HP-UX 11i v3 HA-OE optional software" (page 94) • Table 26: "HP-UX 11i v3 DC-OE optional software" (page 95)

HP-UX 11i v3 Operating Environment contents

The following sections list the products and bundle names of each Operating Environment.

HP-UX 11i v3 Base Operating Environment

The HP-UX 11i v3 Base Operating Environment (BOE) is the standard OE from which the Virtual Server OE, High Availability OE, and Data Center OE have been derived by adding appropriate applications. The HP-UX 11i v3 BOE includes all the features of the original HP-UX 11i v3 Foundation OE.

Along with the 64-bit HP-UX operating system, the BOE contains the features listed in the following tables:

- Table 18: "HP-UX 11i v3 required software" (page 86)
- Table 19: "HP-UX 11i v3 BOE recommended software" (page 87)
- Table 20: "HP-UX 11i v3 BOE optional software" (page 90)

For an overview of the changes to these features and products, see the *HP-UX 11i Version 3 Release Notes* at http://www.hp.com/go/hpux-core-docs-11iv3.

For definitions of *required*, *recommended*, and *optional*, see "HP-UX 11i v3 software installation types" (page 85).

Table 18 HP-UX 11i v3 required software

Required software product	Bundle name
CommonIO	CommonIO
Drivers	
10GigEthr-02	10GigEthr-02
GigEther-00	GigEther-00
GigEther-01	GigEther-01
IEther-00	IEther-00
RAID-01	RAID-01
scsiU320-00	scsiU320-00
SerialSCSI-00	SerialSCSI-00
USB-00	USB-00
HP-UX 11i v3 Online Diagnostics	OnlineDiag
HPUX Mail Server (Sendmail)	HPUX-MailServer
HPUXMinRuntime HP-UX 11i v3 operating system software. This is a core bundle.	HPUXMinRuntime
HP-UX nPartition Configuration Commands	NParCmds
Logical Volume Manager	BaseLVM
Obsolescence Bundle **NOTE:** The Obsolescence product is required during an OE update to remove HP-UX products that are obsolete or unsupported in HP-UX 11i v3. It is automatically removed from the system at the end of the OE update process. It is not needed and not installed during a cold-install.	OBSOLESCENCE
ONCplus	ONCplus
PropPlus (HP-UX SMH Supplemental Functionality)	SysMgmtPlus
Provider Utils	ProviderSvcsBase
Standard HP-UX patch bundles	
Feature Enablement Patch Bundle	FEATURE11i
Hardware Enablement Patch Bundle	HWEnable11i
Quality Pack Patch Bundles (QPKAPPS)	QPKAPPS
Quality Pack Patch Bundles (QPKBASE)	QPKBASE

Table 18 HP-UX 11i v3 required software *(continued)*

Required software product	Bundle name
SysMgmtMin Contains user tools and utilities used for administering HP-UX, including: • Common System Management Enablers (SysMgmtBASE) • Disks and File Systems (file systems) • Event Monitor GUI (EMSWeb) • Event Monitoring Service (EventMonitoring) • HP Instant Capacity Manager (iCAPMgr) • HP WBEM Services for HP-UX (WBEMSvcs) • HP-UX Accounts for Users and Groups (UserGroups) • HP-UX Kernel Configuration (Casey) • HP-UX Peripheral Device Tool (PeriphDev) • HP-UX Printers and Plotters Tool (PrinterConfig) • HP-UX Security Attributes Configuration (SecConfig) • HP-UX Software Distributor (SW-DIST) • HP-UX Software Manager (SWM) • HP-UX Update-UX (UPDATE-UX) • Instant Capacity (iCAP) (B9073BA) • Judy Libraries (Judy) • Network Configuration (NetworkConf) • nPartition Provider (nParProvider) • OpenSSL (OpenSSL)	SysMgmtMin
System Fault Management	SysFaultMgmt
VxFS 4.1	Base-VXFS
VxFS 5.0.1	Base-VxFS-501

Table 19 HP-UX 11i v3 BOE recommended software

BOE recommended software product	Bundle name
Base Virtualization Software	VirtualBase
Distributed Systems Administration Utilities	DSAUtilities
Drivers	
10GigEthr-03	10GigEthr-03
10GigEthr-04 (Not currently supported. For future products only.)	10GigEthr-04
FibrChanl-00	FibrChanl-00
FibrChanl-01	FibrChanl-01
FibrChanl-02	FibrChanl-02
FibrChanl-03	FibrChanl-03
FibrChanl-04 (Not currently supported. For future products only.)	FibrChanl-04
SATADVD-00	SATADVD-00

Table 19 HP-UX 11i v3 BOE recommended software *(continued)*

BOE recommended software product	Bundle name
Dynamic nPartitions	DynamicNPars
Dynamic Root Disk	DynRootDisk
Firefox web browser	FIREFOX
Gnome GUI Runtime Toolkit	GTK
HP aCC_link bundle	HP-ACC-Link
HP Caliper	HP-Caliper-Perf
HP CIFS Client	CIFS-CLIENT
HP CIFS Server	CIFS-SERVER
HP FTP Server	HPUX-FTPServer
HP Portable Image	HPPortableImage
HP Process Resource Manager	B3835DA
HP System Management Homepage	SysMgmtWeb
HP WildeBeest Debugger	HP-WDB-DEBUGGER
HP-UX Auto Port Aggregation	J4240AA
HP-UX Bastille Security Tool	HPUXBastille
HP-UX DHCPv4 Server This is a core bundle.	HPUX-DHCPv4
HP-UX DHCPv6 Server This is a core bundle.	HPUX-DHCPv6
HPUXEssential Contains operating system software that is required by most HP-UX users. **NOTE**: Make sure you do not deselect this bundle or remove it from your system unless you know for certain that the software contained in this bundle is not required for your operating environment.	HPUXEssential
HP-UX Gated and Mrouted Server This is a core bundle.	HPUXGatedMrouted
HP-UX IPFilter	IPFilter
HP-UX IPv6 Routing Server This is a core bundle.	HPUX-RAMD
HP-UX Nameserver (BIND)	HPUX-NameServer
HP-UX reference pages (manpages) for English and Japanese	HPUXMan-Eng HPUXMan-Jpn
HP-UX NTP Server This is a core bundle.	HPUX-NTP
HP-UX TCP Wrapper daemon This is a core bundle.	HPUX-TCPWRAP
HP-UX Secure Shell	SecureShell

Table 19 HP-UX 11i v3 BOE recommended software *(continued)*

BOE recommended software product	Bundle name
HP-UX Software Assistant	SwAssistant
HP-UX Web Server Suite	
HP-UX Apache-based Web Server	hpuxws22Apache
HP-UX Tomcat-based Servlet Engine	hpuxws22Tomcat
HP-UX Webmin-based Admin	hpuxws22Webmin
HP-UX XML Web Server Tools	hpuxwsXml
Install-Time Security Infrastructure	Sec00Tools
Internationalization	
Contains internationalization support for many languages.	HPUXLocales
Contains language-specific input methods, printer and terminal support, fonts and utilities.	HPUXExtns-Jpn HPUXExtns-Kor HPUXExtns-SCh HPUXExtns-TCh
HP-UX message catalogs that contain localized language message catalogs for functionality in the HPUXMinRuntime and HPUXEssential bundles.	HPUXMsgs-Fre HPUXMsgs-Ger HPUXMsgs-Ita HPUXMsgs-Jpn HPUXMsgs-Kor HPUXMsgs-SCh HPUXMsgs-Spa HPUXMsgs-Swe HPUXMsgs-TCh
Java bundles	
Java Development Kit (v1.5/5.0)	Java15JDK
Java Development Kit (v1.6/6.0)	Java60JDK
Java Development Kit for HP-UX Add-On (v1.5/5.0)	Java15JDKadd
Java Development Kit for HP-UX Add-On (v1.6/6.0)	Java60JDKadd
Java Runtime Environment Add-On (v1.5/5.0)	Java15JREadd
Java Runtime Environment Add-On (v1.6/6.0)	Java60JREadd
Runtime Environment (v1.5/5.0) for Java	Java15JRE
Runtime Environment (v1.6/6.0) for Java	Java60JRE
LDAP-UX Integration	LDAPUX
Openview SNMP Agent	OVsnmpAgent
PAM Kerberos	PAMKerberos
Partition Manager	ParMgr
Perl Programming Language	perl

Table 19 HP-UX 11i v3 BOE recommended software *(continued)*

BOE recommended software product	Bundle name
Provider Default Tools • Application Discovery Agent (AppDiscAgent) • HP Global Workload Manager Agent (gWLMAgent) • HP-UX File System CIM Provider (WBEMP-FS) • HP-UX Kernel Providers (KERNEL-PROVIDERS) • HP-UX WBEM Direct Attached Storage Provider (DASProvider) • HP-UX WBEM LAN Provider for Ethernet Interfaces (WBEMP-LAN-00) • HP-UX WBEM SCSI Provider (SCSIProvider) • Serial SCSI provider (SAS-PROVIDER) • Smart Array Provider (RAIDSA-PROVIDER) • Online Provider (OLOSProvider) • Utilization Provider (utilProvider) • vPartition Provider (VParProvider) • WBEM Indication Provider for IOTree subsystem (WBEMP-IOTreeIP) • WBEM Provider for Fibre Channel HBAs (WBEMP-FCP)	ProviderDefault
PRM Kernel Software	PRMKernelSW
PRM Libraries	PRMLibraries
SCSI Persistent Reservation Utilities	SCSI-PR-Utilites
Thunderbird email client	TBIRD
Tune-N-Tools	Tune-N-Tools

Table 20 HP-UX 11i v3 BOE optional software

BOE optional software product	Bundle name
Base VxTools 5.0.1	Base-VxTools-501
Common Desktop Environment (CDE) bundle (xxx is language variable). **NOTE:** CDE is an optional product in HP-UX 11i v3. If you require it, you must explicitly select the CDE bundle (CDE-XXX). This applies if you need dtterm, which is located in CDE. For some localization situations, dtterm is required, therefore CDE must be selected.	CDE-xxx
Cpio Enhancement	CpioCmdEnh
Drivers	
10GigEthr-00	10GigEthr-00
10GigEthr-01	10GigEthr-01
HyprFabrc-00	HyprFabrc-00
IB4X-00 Driver for InfiniBand	IB4X-00
ISO Image Mount Enhancement	ISOIMAGE-ENH
PCIMUX-00	PCIMUX-00
TERMIO-00	TERMIO-00
Dynamic System V Semaphore Tunables	DynSysVSem

Table 20 HP-UX 11i v3 BOE optional software *(continued)*

BOE optional software product	Bundle name
EnergySaver	EnergySaver
FIFOENH	FifoEnh
FileSystem-SRP	FileSystem-SRP
getenv Performance Enhancement	GetenvEnh
HP 9000 Containers	HP9KContainers
HP Insight Control power management	HPIPM-HP-UX
HP Matrix Operating Environment for HP-UX (formerly HP Insight Dynamics – VSE for Integrity).	VSEMgmt
HP Process Resource Manager (PRM) Web GUI Systems Insight Manager (SIM) Integration Files	PRMSIMTools
HP Systems Insight Manager (HP SIM)	HPSIM-HP-UX
HP-UX Atomic Library	AtomicLib
HP-UX Auditing System Extensions	AuditExt
HP-UX Directory Server	HPDirSvr
HP-UX GUID Manager	GUIDMGR
HP-UX Host Intrusion Detection System	HPUX-HIDS
HP-UX IPsec	IPsec
HP-UX Internet Services	HPUX-SLP
HP-UX LongPassword for HP-UX 11i v3	LongPass11i3
HP-UX Mobile IPv4	HPUXMOBILEIPV4
HP-UX Mobile IPv6	HPUXMOBILEIP
HP-UX 3D Graphics Run Time Environment and Developer's Kit	Graphics
HP-UX Password Hash Infrastructure for HP-UX 11i v3	PHI11i3
HP-UX Role-based Access Control Extension	AccessControl
HP-UX Secure Resource Partitions	HP-UX-SRP
HP-UX Security Containment Extensions	ContainmentExt
HPUX-Streams-SRP	HPUX-Streams-SRP
HP-UX Swapoff (Command)	Swapoff
HPUX-Transport-SRP	HPUX-Transport-SRP
Ignite-UX	IGNITE
Insight managed system setup wizard	MgdSysSetupWzrd
IPv6 Upgrade for HP-UX 11i v3	IPv6Upgrade
Java Out-of-Box	JAVAOOB
Kerberos Client	KRB5CLIENT
Libc Enhancements	LibcEnhancement
MallocNextGen	MallocNextGen

Table 20 HP-UX 11i v3 BOE optional software *(continued)*

BOE optional software product	Bundle name
Media Streaming Protocol	Media—Streaming
MemFS	MemFS
Network Server Accelerator	NSAHTTP
Numeric User Group Name	NumericUsername
Pax Enhancement (PAX-ENH)	PAX-ENH
Pay per use	T2351AA
RCEnhancement	RCEnhancement
SAR-MEMFS-ENH	SAR-MEMFS-ENH
Security Level 10	Sec10Host
Security Level 20	Sec20MngDMZ
Security Level 30	Sec30DMZ
SoftRebootEnh	SoftRebootEnh
Software Package Builder	SwPkgBuilder
TRUFGREP	FGREPMULTPAT
UmountallEnh	UmountallEnh
Virtual Server Environment Configuration Assistant (Insight Dynamics - VSE Configuration Assistant)	VseAssist
VFS-LOCKF-ENH	VFS-LOCKF-ENH
VxVM 5.0.1	Base-VxVM-501

HP-UX 11i v3 Virtual Server Operating Environment

The HP-UX 11i v3 Virtual Server Operating Environment (VSE-OE) is designed for customers seeking higher resource utilization, a robust set of manageability tools, or embarking on consolidation projects that require virtualization. The entire set of products contained in the original HP-UX 11i v3 Enterprise OE can also be found in the VSE-OE.

In addition to the features described previously in the HP-UX 11i v3 Base OE (upon which it is built), the VSE-OE includes the features listed in the following tables:

- Table 18: “HP-UX 11i v3 required software” (page 86)
- Table 21: “HP-UX 11i v3 VSE-OE recommended software” (page 92)
- Table 22: “HP-UX 11i v3 VSE-OE optional software” (page 93)

For an overview of the changes to these features and products, see the *HP-UX 11i Version 3 Release Notes* at http://www.hp.com/go/hpux-core-docs-11iv3.

For definitions of *required*, *recommended*, and *optional*, see “HP-UX 11i v3 software installation types” (page 85).

Table 21 HP-UX 11i v3 VSE-OE recommended software

VSE-OE recommended software product	Bundle name
High Availability (HA) Monitors	B5736DA
HP Capacity Advisor LTU	T2784AC
HP Global Workload Manager Agent LTU	T2762AA

Table 21 HP-UX 11i v3 VSE-OE recommended software *(continued)*

VSE-OE recommended software product	Bundle name
HP Operations Agent	TC097AA
HP Serviceguard Toolkit for Integrity Virtual Servers	SG-IVS-Toolkit
HP Virtualization Manager LTU	T2782AC
HP VSE Suite LTU	T2786AC
HP-UX Workload Manager	B8843CA
HP-UX Workload Manager Toolkit	WLMToolkits
Mirrordisk/UX LT	B2491BA
OnlineJFS 5.0.1	B3929GB
Plus the list in Table 19: "HP-UX 11i v3 BOE recommended software" (page 87)	

Table 22 HP-UX 11i v3 VSE-OE optional software

VSE-OE optional software product	Bundle name
HP Integrity Virtual Server Manager (formerly HP Integrity Virtual Machines Manager)	VMMGR
HP-UX Virtual Partitions v5	T1335DC
HP-UX vPars and Integrity VM v6.*x*	BB068AA
OnlineJFS 4.1	B3929EA
Plus the list in Table 20: "HP-UX 11i v3 BOE optional software" (page 90)	

HP-UX 11i v3 High Availability Operating Environment

The HP-UX 11i v3 High Availability Operating Environment (HA-OE) provides an integrated environment tested and designed for mission critical applications. The entire set of products contained in the original HP-UX 11i v3 Enterprise OE can also be found in the HA-OE.

In addition to the features described previously in the HP-UX 11i v3 Base OE (upon which it is built), the HA-OE includes the features listed in the following tables:

- Table 18: "HP-UX 11i v3 required software" (page 86)
- Table 23: "HP-UX 11i v3 HA-OE recommended software" (page 93)
- Table 24: "HP-UX 11i v3 HA-OE optional software" (page 94)

For an overview of the changes to these features and products, see the *HP-UX 11i Version 3 Release Notes* at http://www.hp.com/go/hpux-core-docs-11iv3.

For definitions of *required*, *recommended*, and *optional*, see "HP-UX 11i v3 software installation types" (page 85).

Table 23 HP-UX 11i v3 HA-OE recommended software

HA-OE recommended software product	Bundle name
Enterprise Cluster Master (ECM) Toolkit	T1909BA
High Availability (HA) Monitors	B5736DA
HP Operations Agent	TC097AA
HP Serviceguard	T1905CA

Table 23 HP-UX 11i v3 HA-OE recommended software *(continued)*

HA-OE recommended software product	Bundle name
HP Serviceguard NFS Toolkit	B5140BA
HP Serviceguard Toolkit for Integrity Virtual Servers	SG-IVS-Toolkit
Mirrordisk/UX	B2491BA
OnlineJFS 5.0.1	B3929GB
Plus the list in Table 19: "HP-UX 11i v3 BOE recommended software" (page 87)	

Table 24 HP-UX 11i v3 HA-OE optional software

HA-OE optional software product	Bundle name
HP Serviceguard Extension for RAC	T1907BA
OnlineJFS 4.1	B3929EA
Plus the list in Table 20: "HP-UX 11i v3 BOE optional software" (page 90)	

HP-UX 11i v3 Data Center Operating Environment

The Data Center Operating Environment (DC-OE) is designed for customers who require both flexibility and high availability. Combining all the features of both the High Availability and Virtual Server OEs, the DC-OE provides robust mission critical virtualization in an integrated and tested bundle. The entire set of products contained in the original HP-UX 11i v3 Mission Critical OE can also be found in the DC-OE.

In addition to the features described previously in the HP-UX 11i v3 Base OE (upon which it is built), the DC-OE includes the features listed in the following tables:

- Table 18: "HP-UX 11i v3 required software" (page 86)
- Table 25: "HP-UX 11i v3 DC-OE recommended software" (page 94)
- Table 26: "HP-UX 11i v3 DC-OE optional software" (page 95)

For an overview of the changes to these features and products, see the *HP-UX 11i Version 3 Release Notes* at http://www.hp.com/go/hpux-core-docs-11iv3.

For definitions of *required*, *recommended*, and *optional*, see "HP-UX 11i v3 software installation types" (page 85).

Table 25 HP-UX 11i v3 DC-OE recommended software

DC-OE recommended software product	Bundle name
Enterprise Cluster Master (ECM) Toolkit	T1909BA
High Availability (HA) Monitors	B5736DA
HP Capacity Advisor LTU	T2784AC
HP Global Workload Manager Agent LTU	T2762AA
HP Operations Agent	TC097AA
HP Serviceguard	T1905CA
HP Serviceguard NFS Toolkit	B5140BA
HP Serviceguard Toolkit for Integrity Virtual Servers	SG-IVS-Toolkit
HP Virtualization Manager LTU	T2782AC
HP VSE Suite LTU	T2786AC

Table 25 HP-UX 11i v3 DC-OE recommended software *(continued)*

DC-OE recommended software product	Bundle name
HP-UX Workload Manager	B8843CA
HP-UX Workload Manager Toolkits	WLMToolkits
Mirrordisk/UX LT	B2491BA
OnlineJFS 5.0.1	B3929GB
Plus the list in Table 19: "HP-UX 11i v3 BOE recommended software" (page 87)	

Table 26 HP-UX 11i v3 DC-OE optional software

DC-OE optional software product	Bundle name
HP Integrity Virtual Server Manager (formerly HP Integrity Virtual Machines Manager)	VMMGR
HP Serviceguard Extension for RAC	T1907BA
HP-UX Virtual Partitions v5	T1335DC
HP-UX vPars and Integrity VM v6.*x*	BB068AA
OnlineJFS 4.1	B3929EA
Plus the list in Table 20: "HP-UX 11i v3 BOE optional software" (page 90)	

D Documentation feedback

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