HP-UX 11i Version 2 May 2005 Release Notes

HP 9000 Servers, HP Integrity Servers, and HP Workstations

Manufacturing Part Number: 5991-1101
May 2005

Legal Notices

Acknowledgements

This product includes software developed by the Apache Software Foundation. This documentation is based on information from the Apache Software Foundation (**`http://www.apache.org`**).

This product includes software developed by the OpenSSL Project for use in the OpenSSL Toolkit (**`http://www.openssl.org`**).

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

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

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

Publication History

This document is part of a series that describes what is new, changed, deprecated, or obsoleted in HP-UX 11i v2. Each document in this series pertains to the release date indicated in its title, and it describes the changes since the previous release of HP-UX 11i v2.[1]

For the latest document in this series, see the HP-UX 11i Version 2 documentation on the Web at **`http://www.docs.hp.com/hpux/os/11iV2`**. The documents in this series are also available on the Instant Information CD.

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

Current Document in This Series

- *HP-UX 11i Version 2 May 2005 Release Notes*

  May 2005, Edition 1, MPN 5991-1101

Previous Documents in This Series

- *HP-UX 11i Version 2 September 2004 Release Notes*

  September 2004, Edition1, MPN 5990-8153

- *HP-UX 11i Version 2 March 2004 Release Notes*

  March 2004, Edition 1, MPN 5990-6739

- *HP-UX 11i Version 2 Release Notes*

  October 2004, Edition 2, MPN 5990-6737

- *HP-UX 11i Version 2 Release Notes* (replaced by Edition 2)

  September 2003, Edition 1, MPN (retired)

HP Encourages Your Comments

Please direct comments regarding this guide to:

Hewlett-Packard Company
HP-UX Learning Products
3404 East Harmony Road
Fort Collins, Colorado 80528-9599

Or, use this Web form to send us feedback:

`http://www.docs.hp.com/assistance/feedback.html`

1. Note that the *HP-UX 11i Version 2 Release Notes* for the initial release (October 2003) of HP-UX 11i v2 does not have a date in its title. It describes how the initial release of HP-UX 11i v2 compares to HP-UX 11i v1.6.

Typographic Conventions

We use the following typographical conventions.

audit (5)	An HP-UX manpage. *audit* is the name and 5 is the section in the *HP-UX Reference*. On the Web and on the Instant Information CD, it may be a hot link to the manpage itself. From the HP-UX command line, enter "`man audit`" or "`man 5 audit`" to view the manpage. See *man* (1).
Book Title	The title of a book. On the Web and on the Instant Information CD, it may be a hot link to the book itself.
Emphasis	Text that is emphasized.
Emphasis	Text that is strongly emphasized.
`ComputerOut`	Text displayed by the computer.
`Command`	A command name or qualified command phrase.
`Computer`	`Computer font` indicates literal items displayed by the computer. For example: `file not found`
`Filename`	Text that shows a filename and/or filepath.
`UserInput`	Commands and other text that you type.
`Variable`	The name of a variable that you may replace in a command or function or information in a display that represents several possible values.
`[ ]`	The contents are optional in formats and command descriptions.
`{ }`	The contents are required in formats and command descriptions. If the contents are a list separated by `|`, you must choose one of the items
. . .	The preceding element may be repeated an arbitrary number of times.
|	Separates items in a list of choices.

Contents

Contents

1 Overview of the Release Notes

What is in This Chapter?

The purpose of this chapter is to help you use these release notes along with related HP-UX documentation effectively. The following topics are covered in this overview:

What is the Purpose of the HP-UX 11i Version 2 May 2005 Release Notes?

The *HP-UX 11i Version 2 May 2005 Release Notes* describes what is new, has changed, or has been deprecated or obsoleted in the current update, as compared to the HP-UX 11i v2 September 2004 Operating Environment update.

As with other HP-UX release notes, the *HP-UX 11i Version 2 May 2005 Release Notes* does not completely document all the features of this release. Instead, it contains high-level information and pointers to more detailed operating system and product-specific documentation. Where appropriate, it also notes changes in the support of products. These release notes generally apply only to features that are delivered on the HP-UX 11i v2 Operating Environments (OE) media and, where specified, the Software Pack (SPK) media.

For pointers to product-specific release notes, see the individual products documented elsewhere in this document. Additional product-specific release notes files are often located in the `/opt` directory, in sub-directories named *`[name]`*`/newconfig/RelNotes` (where *`name`* represents the name of the product).

NOTE The name of the initial HP-UX 11i v2 release was “HP-UX 11i Version 2.” Unlike its subsequent updates, it does not have a date in its name, although we may sometimes note parenthetically that it was released in October 2003.

Where Should I Begin?

This book is organized in such a way that you need only read Chapter 3, "What is New at a Glance," on page 35 for a quick overview of what is new, has changed, and has been deprecated or obsoleted in the current and previous releases of the HP-UX 11i v2 Operating Environments (OE) and Software Pack (SPK).

The section "What is New in the May 2005 Release?", in particular, will give you a general overview of how this release differs from the September 2004 release of HP-UX 11i v2 (B.11.23).

For further information about a particular item, you can go to the corresponding section in the remainder of the book or, if the item pertains to a previous release, to an earlier version of this document.

NOTE All features and products described in this document are delivered on the OE media, unless otherwise noted.

HP-UX system release notes can be found in the following locations:

- The HP-UX Instant Information media. See "HP-UX 11i v2 Instant Information Media" on page 14 for more information.
- At the Web site **`http://www.docs.hp.com/hpux/os/11iV2/`**.

Be sure to consult the version most appropriate to your release. If you are concerned with just the initial (October 2003) release of HP-UX 11i v2, consult the *HP-UX 11i Version 2 Release Notes*. If, on the other hand, you are concerned about an update of the initial release, then you should begin with the *Release Notes* version appropriate to that release. For instance, the *HP-UX 11i Version 2 September 2004 Release Notes* would be most appropriate to the September 2004 update release.

For details on performing an installation, be sure to review the appropriate *HP-UX 11i Version 2 Installation and Update Guide* at the above Web site.

For critical, late-breaking cold-install and update issues not in the *HP-UX 11i Version 2 Installation and Update Guide*, you should also review the media booklet, *Read Before Installing or Updating to HP-UX 11i Version 2*, which is also available at the above Web site.

NOTE The most current version of these documents, as well as most HP documentation, can always be found at **`http://www.docs.hp.com/`**.

Information about the HP-UX 11i v1.5 release is available on the Web at **`http://docs.hp.com/en/hpuxos11iv1.5.html`**. Information about HP-UX 11i v1.6 release is available at **`http://www.docs.hp.com/hpux/os/11iV1.6/`**.

Additionally, you may want to familiarize yourself with the HP-UX 11i v1 release. This information is available on the Web at **`http://www.docs.hp.com/hpux/os/11i/`**.

Locating Release Notes for Previous Versions of HP-UX

Release notes for previous versions of HP-UX are found in the following locations:

- HP-UX Instant Information DVD. See “HP-UX 11i v2 Instant Information Media” on page 14 for more information.
- The `/usr/share/doc/` directory of your HP-UX 11i v2 system. Please note, however, that the latest editions may not be contained in this directory and are instead located at **`http://www.docs.hp.com/`**.
- The HP Documentation Site at **`http://www.docs.hp.com/`**. Here you will find the release notes pertinent to all previous releases of HP-UX, as well as release notes for various individual products.

  See “HP Documentation Web Site” on page 14 for more information.

Other Sources of Information about This Release

In addition to these release notes, you have many other sources of information related to the HP-UX 11i v2 release available to you on the Web at

http://www.docs.hp.com/hpux/os/11iV2

The following documents, which are found at the above Web site, may be of particular interest:

Read Before Installing or Updating to HP-UX 11i Version 2

HP-UX 11i Version 2 Installation and Update Guide

HP-UX 11i Version 2 Reference

Ignite-UX Administrator's Guide

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

Software Distributor Administrator's Guide

Software Package Builder 2.0 Users Guide for HP-UX 11i v1 and 11i v2

HP-UX System Partitions Guide: Administration for nPartitions

Managing Systems and Workgroups: This document provides simple, reliable guidelines and recipes for managing and administrating multi-system workgroups, as well as covering the basics of single-system administration.

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

Of additional interest is the *HP-UX Networking Ports Reference Guide*, which can be found in the "Networking and Communications" section of **http://docs.hp.com**:

Additionally, the following Web sites may be of interest in obtaining a variety of information regarding the HP-UX 11i v2 release:

Application Availability Matrix: **http://hp.com/go/softwareinfo/MATRIX**

Enterprise Servers, Workstations, and Systems Hardware Documentation: **http://docs.hp.com/hpux/hw/**

HP Software Depot: **http://software.hp.com**

HP Software Releases and Media: **http://www.hp.com/softwarereleases/releases-media2/index.html**

HP Servers and Enterprise Systems: **http://hp.com/go/servers**

HP Workstations: **http://hp.com/go/workstations**

Software Transition Kit and Software Solutions: **http://hp.com/go/STK**

IT Resource Center (ITRC): **http://itrc.hp.com**

Developer & Solution Partner Program (DSPP): **http://www.hp.com/dspp**

Development Resource Central: **http://devresource.hp.com**

HP Documentation Web Site

HP provides a Web site where the latest HP-UX documentation and updates are available. This Web site is found at

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

HP-UX 11i v2 Instant Information Media

The Instant Information media provides HP-UX documentation on DVD. With this DVD, you can view documentation supporting the release before you install the software. The Instant Information DVD provides improved online presentation, print quality, and search capabilities.

HP-UX 11i Home Page

The HP-UX 11i Home page, "HP-UX 11i, the Proven Foundation for the Adaptive Enterprise," provides links to a wide variety of information about HP-UX 11i, including the HP-UX Information Library, the Software Depot, and the IT Resource Center, as well as information about hardware, operating environment services, and training courses. The page is found at

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

HP-UX Welcome Page

The HP-UX Welcome Page on your HP-UX 11i v2 system contains pointers to information that will help you use your HP-UX system.

Manual Pages

For the HP-UX 11i v2 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 on the Web at

http://docs.hp.com/hpux/os/man_pages.html

README Documents

README (or *Read Before Installing*) documents are media booklets that contain information about the installation process that may not appear in the *HP-UX 11i Version 2 Installation and Configuration Guide*. Any product contained in the release may have a README document, so several README documents may be included. The README document specific to HP-UX 11i v2 is included with your media kit.

White Papers on HP-UX

White papers associated with the HP-UX 11i v2 release are available at

http://www.docs.hp.com/hpux/os/11iV2

Other white papers, including an HP-UX 11i v2 overview, can be found at the HP-UX Information Library at

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

What is in the Remaining Chapters?

The remaining chapters of these release notes are as follows:

- Chapter 2, “Introduction to HP-UX 11i Version 2,” on page 17, provides an overview of the five Operating Environments, along with information about Software Pack and about compatibility issues.
- Chapter 3, “What is New at a Glance,” on page 35, furnishes a quick overview of what is new, has changed, or has been deprecated or obsoleted in this and previous releases of HP-UX 11i v2.
- Chapter 4, “Workstation- and Server-Specific Information,” on page 73, presents information regarding supported systems, networking and mass storage cards and drivers, as well as other information that is server- or workstation-specific.
- Chapter 5, “General System Administration,” on page 95, includes information of particular interest to system administrators.
- Chapter 6, “Disk and File Management,” on page 135, presents information regarding directory, file system, and disk management.
- Chapter 7, “Internet and Networking,” on page 141, covers changes to networking functionality and Internet services.
- Chapter 8, “Security,” on page 149, covers changes and enhancements to security services.
- Chapter 9, “Commands and System Calls,” on page 165, includes information about new and changed commands and system calls.
- Chapter 10, “Libraries and Programming,” on page 169, provides information of particular interest to programmers, including changes to compilers, editors, and libraries.
- Chapter 11, “Internationalization,” on page 181, presents information about text fonts and converters relating to various international languages.
- Chapter 12, “Other Functionality,” on page 183, includes additional applications or functionality in the Operating Environments.

2 Introduction to HP-UX 11i Version 2

What is in This Chapter?

This chapter provides an introduction to HP-UX 11i v2, along with an overview of the five Operating Environments and the features delivered on the Software Pack media. Also included is information about compatibility issues.

Welcome to HP-UX 11i v2 May 2005

The May 2005 release of HP-UX 11i v2 continues as a joint release of HP-UX 11i v2 supported on both the HP 9000 and HP Integrity server families. This enterprise release offers the full range of HP-UX Operating Environments and capabilities. Significant new capabilities include:

- HP-UX Virtual Partitions (vPars) for the HP Integrity server family
- HP-UX Virtual Partitions (vPars) for the HP 9000 server family

Itanium®-based systems offer significantly better price/performance and performance scalability than systems based on current architectures, and HP-UX 11i v2 provides the best way to preserve your investment through the transition from Precision Architecture Reduced Instruction Set Computing (PA-RISC) HP 9000 servers to Itanium®-based HP Integrity servers.

HP's enterprise computing business carefully planned the transition to Itanium®-based systems and places a premium on customer and partner investment protection. HP-UX 11i v2 maintains compatibility between HP 9000 and HP Integrity servers in the following ways:

- Common “look and feel” for HP-UX 11i on both server families
- Application Build Environment compatibility (source, makefile, and script compatibility)[1]
- Data compatibility (identical data formats)
- Binary compatibility (the Aries dynamic code translation technology, a standard integrated component of every copy of HP-UX 11i for HP Integrity, executes HP 9000 programs on HP Integrity without recompiling or relinking)

With this May 2005 update to the September 2004 release of HP-UX 11i v2 (for both the HP 9000 and HP Integrity server families), HP-UX 11i v2 continues as a transition bridge between the PA-RISC architecture and the Itanium®-based architecture, and continues to provide a smooth transition path for HP-UX customers and partners on to the next-generation Itanium®-based architecture.

NOTE Please note that your system must have an HP-UX 11i v2 Operating Environment (OE) from September 2004 (or later) before updating your system with any individual patches, patch bundles, or products released from September 2004 forward.

1. For more information about compatibility, see “HP-UX 11i v2 Compatibility” on page 29.

HP-UX 11i Release Names and Release Identifiers

Each HP-UX 11i release has an associated release name and release identifier. The following table shows the releases available for HP-UX 11i:

Table 2-1 HP-UX 11i Releases

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

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

The *uname* (1) command with the `-r` option returns the release identifier.

You can also 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-MCOE B.11.23.0505 HP-UX Mission Critical Operating Environment Component
```

The above revision string represents the following:

`B.11.23` = HP-UX 11i v2

`0505` = May 2005 Update Release

HP-UX 11i v2 Software and Driver Bundle Types

The HP-UX 11i v2 media contains all of the software and network driver bundles for your system to run the latest version of HP-UX 11i v2. Additional software and network driver bundles are included, which you may choose to either select or de-select prior to install or update. HP-UX 11i v2 contains three types of bundles:

- **Always-Installed**: Software and network driver bundles required by HP-UX 11i v2. Other always-installed bundles are also included as part of your operating environment. Examples include the core OS bundles, some software bundles, and some network and mass-storage drivers.
- **Default-Installed**: Software bundles that are installed by default. You can manually de-select the bundles before you install or update system. Examples include Mozilla Application Suite and the HP-UX Web Server Suite bundles.
- **Selectable**: Software bundles that are *not* installed or updated by default. You must manually select these bundles before you install or update your system. Examples include Ignite-UX and security.

For a detailed list of the always-installed, default-installed, and selectable bundles, see Appendix D of the *HP-UX 11i Version 2 Installation and Update Guide*, available at **`http://www.docs.hp.com`**.

In the following section, “HP-UX 11i v2 Operating Environments” on page 21, products are listed according to their bundle type.

HP-UX 11i v2 Operating Environments

Overview

Operating Environments (OEs) are tested and integrated application bundles designed to work with the operating system and provide the functionality needed for your system's purpose. The following lists the currently available HP-UX 11i v2 OEs:

- **HP-UX 11i v2 Foundation OE (FOE)** — Designed for the demands of Web servers, content servers and front-end servers, this OE includes applications such as HP-UX Web Server Suite, Java, and Mozilla Application Suite. This OE is bundled as `HPUX11i-OE`. For more details, see "HP-UX 11i v2 Foundation Operating Environment" on page 22.
- **HP-UX 11i v2 Enterprise OE (EOE)** — Designed for database application servers and logic servers, this OE contains the HP-UX 11i v2 Foundation OE bundles and additional applications such as GlancePlus Pak to enable an enterprise-level server. This OE is bundled as `HPUX11i-OE-ENT`. For more details, see "HP-UX 11i v2 Enterprise Operating Environment" on page 24.
- **HP-UX 11i v2 Mission Critical OE (MCOE)** — Designed for the large, powerful back-end application servers and database servers that access customer files and handle transaction processing, this OE contains the Enterprise OE bundles, plus applications such as HP Serviceguard and Workload Manager to enable a mission-critical server. This OE is bundled as `HPUX11i-OE-MC`. For more details, see "HP-UX 11i v2 Mission Critical Operating Environment" on page 24.
- **HP-UX 11i v2 Minimal Technical OE (MTOE)** — Designed for workstations running HP-UX 11i v2, this OE includes the Mozilla Application Suite, Perl, Technical System Configuration (TechSysConf), and VERITAS Volume Manager (VxVM). This OE is bundled as `HPUX11i-MTOE`. For more details, see "HP-UX 11i v2 Minimal Technical Operating Environment" on page 25.

IMPORTANT HP-UX 11i v2 May 2005 is last release that will include the MTOE. After May 2005, the MTOE will no longer be delivered. If you have questions, contact your HP sales representative.

- **HP-UX 11i v2 Technical Computing OE (TCOE)** — Designed for both compute-intensive workstation and server applications, this OE contains the MTOE bundles plus extensive graphics applications and Math Libraries. This OE is bundled as `HPUX11i-TCOE`. For more details, see "HP-UX 11i v2 Technical Computing Operating Environment" on page 26.

IMPORTANT The HP-UX 11i v2 May 2005 TCOE is the last release that will be supported on Itanium®-based workstations. It will continue to be updated for servers. If you have questions, contact your HP sales representative.

The following table details the supported OEs for HP Servers and Workstations:

Table 2-2 Supported Operating Environments for Servers and Workstations

	FOE	EOE	MCOE	MTOE	TCOE[a]
HP Commercial Servers	X	X	X		X
HP Workstations				X	X

a. Can be purposed as either a workstation or compute-intensive technical server.

HP-UX 11i v2 Foundation Operating Environment

The HP-UX 11i v2 Foundation Operating Environment is the standard OE from which the Enterprise OE and Mission Critical OE have been derived by adding appropriate applications. The HP-UX 11i v2 Foundation OE includes the base 64-bit HP-UX operating system, plus the following features. (For an overview of the features that are new or have changed in this release, see Chapter 3, “What is New at a Glance,” on page 35.)

Always-Installed Features[1]

- Event Monitoring Service
- FEATURE11i
- FDDI (PCI)
- FibreChannel (PCI)
- Gigabit Ethernet (PCI)
- Gigabit Ethernet Next Generation (PCI)
- HP CIFS Client
- HP CIFS Server
- HP Instant Capacity (iCAP, formerly iCOD)
- HP WBEM Services for HP-UX
- HP-UX Kernel Configuration
- HP-UX Peripheral Device Tool
- HP-UX Security Attributes Configuration
- HWEnable11i
- iEther (PCI)
- Logical Volume Manager (LVM)
- nPartition Provider
- Obsolescence Bundle
- ONC+
- Online Diagnostics
- OpenSSL
- PAM Kerberos
- PRM Libraries
- Quality Pack Patch Bundle
- RAID-01
- Runtime Plug-in (JPI) for Mozilla for the Java™ 2 Platform v1.3 and v1.4

1. For definitions of *always-installed*, *default-installed*, and *selectable*, see “HP-UX 11i v2 Software and Driver Bundle Types” on page 20.

- SAM-NNC
- scsiU320-00
- Software Distributor (SD)
- SWGETTOOLS
- System Administration Manager (SAM)
- Update-UX
- USB-00
- VERITAS File System (base VxFS/JFS)
- VERITAS Volume Manager (base VxVM)
- WBEM-LAN-00

Default-Installed Features

- GTK+ Libraries
- HP Global Workload Manager
- HP System Management Homepage
- HP-UX Bastille
- HP-UX IPFilter
- HP-UX Secure Shell
- HP-UX Software Development Kit and Runtime Environment for the Java 2 Platform Standard Edition
- HP-UX Web Server Suite (including HP-UX Apache-based Web Server, HP-UX Tomcat-based Servlet Engine, HP-UX Webmin-based Admin, and HP-UX XML Web Server Tools)
- Instant Support Enterprise Edition (ISEE) (Servers only)
- Java for HP-UX Add-On C++ Libraries for SDK and RTE (PA-RISC only)
- Judy Libraries
- Mozilla Application Suite
- Mozilla Source
- MySQL
- Partition Manager
- Perl
- Runtime Environment (RTE) for the Java™ 2 Platform v1.3 and v1.4
- Sec00Tools
- Security Patch Check
- vPar Provider

Selectable Features

- 10 Gigabit Ethernet
- ATM-00
- HP Pay per use
- HP Systems Insight Manager
- HP-UX Host Intrusion Detection System (HIDS) (servers only; not included in the MTOE or TCOE)
- HP-UX Install Utilities
- HP-UX iSCSI Software Initiator
- HyperFabric
- Ignite-UX
- Java (Out of Box) Tunable
- Mobile IPv6
- Netscape Directory Server
- PCI MUX
- RAID Utilities (ACUGUIUtils)

- Security Level 10
- Security Level 20
- Security Level 30
- Software Package Builder
- Token Ring

HP-UX 11i v2 Enterprise Operating Environment

The HP-UX 11i v2 Enterprise Operating Environment is targeted especially for database application servers and logic servers. In addition to the features found in the HP-UX 11i v2 Foundation OE (described on page 22), the Enterprise OE includes the following additional features. (For an overview of the features that are new or have changed in this release, see Chapter 3, “What is New at a Glance,” on page 35.)

Always-Installed Features[1]

- High Availability Monitors
- MirrorDisk/UX
- VERITAS File System (full VxFS/OnlineJFS)
- GlancePlus Pak
- HP Process Resource Manager

Default-Installed Features

- See “HP-UX 11i v2 Foundation Operating Environment” on page 22

Selectable Features

- See “HP-UX 11i v2 Foundation Operating Environment” on page 22

HP-UX 11i v2 Mission Critical Operating Environment

The HP-UX 11i v2 Mission Critical Operating Environment is a high-availability Operating Environment for HP servers. In addition to the features found in the Foundation and Enterprise OEs, the Mission Critical OE includes the following features. (For an overview of the features that are new or have changed in this release, see Chapter 3, “What is New at a Glance,” on page 35.)

Always-Installed Features[1]

- Enterprise Cluster Master Toolkit
- HP Serviceguard
- HP ServiceGuard NFS Toolkit
- Cluster Object Manager
- HP-UX Workload Manager
- HP-UX Workload Manager Toolkits

1. For definitions of *always-installed*, *default-installed*, and *selectable*, see “HP-UX 11i v2 Software and Driver Bundle Types” on page 20.

Default-Installed Features

- See “HP-UX 11i v2 Foundation Operating Environment” on page 22

Selectable Features

- See “HP-UX 11i v2 Foundation Operating Environment” on page 22

HP-UX 11i v2 Minimal Technical Operating Environment

IMPORTANT HP-UX 11i v2 May 2005 is last release that will include the Minimal Technical OE. After May 2005, the Minimal Technical OE will no longer be delivered. If you have questions, contact your HP sales representative.

The Minimal Technical Operating Environment is the smallest and most fundamental OE that is defined specifically for HP workstations. It exists to offer an HP-UX 11i v2 solution to the customer who is interested in a low-cost HP Workstation and a correspondingly basic Operating Environment. The Minimal Technical OE is directed to the Workstation OEM market and to those customers for whom the Technical Computing OE is not a suitable solution.

The Minimal Technical OE contains all the base functionality that is common to the other four OEs, including the base 64-bit HP-UX operating system, network drivers, and some of the other always-installed features. However, compared to the Technical Computing OE, the set of additional features is greatly reduced.

The HP-UX 11i v2 Minimal Technical OE includes the following features. (For an overview of the features that are new or have changed in this release, see Chapter 3, “What is New at a Glance,” on page 35.)

Always-Installed Features[1]

- Event Monitoring Service
- FEATURE11i
- FDDI (PCI)
- FibreChannel (PCI)
- Gigabit Ethernet (PCI)
- Gigabit Ethernet Next Generation (PCI)
- HP Instant Capacity (iCAP, formerly iCOD)
- HP WBEM Services for HP-UX
- HP-UX 3D Graphics Run Time Environment and Developer’s Kit (PA-RISC Workstations not supported)
- HP-UX Kernel Configuration
- HP-UX Peripheral Device Tool
- HP-UX Security Attributes Configuration
- HWEnable11i
- iEther (PCI)

1. For definitions of *always-installed*, *default-installed*, and *selectable*, see “HP-UX 11i v2 Software and Driver Bundle Types” on page 20.

- Logical Volume Manager (LVM)
- nPartition Provider
- Obsolescence Bundle
- ONC+
- Online Diagnostics
- OpenSSL
- Quality Pack Patch Bundle
- RAID-01
- scsiU320-00
- Technical System Configuration (TechSysConf)
- SAM-NNC
- Software Distributor (SD)
- SWGETTOOLS
- System Administration Manager (SAM)
- Update-UX
- USB-00
- VERITAS File System (base VxVS/JFS)
- VERITAS Volume Manager (base)
- WBEM-LAN-00

Default-Installed Features

- See “HP-UX 11i v2 Foundation Operating Environment” on page 22

Selectable Features

- See “HP-UX 11i v2 Foundation Operating Environment” on page 22

HP-UX 11i v2 Technical Computing Operating Environment

IMPORTANT The HP-UX 11i v2 May 2005 Technical Computing OE is the last release that will be supported on Itanium®-based workstations. It will continue to be updated for servers. If you have questions, contact your HP sales representative.

Like the Minimal Technical Operating Environment, the Technical Computing Operating Environment contains all the base functionality that is common to the other four OEs, including the base 64-bit HP-UX operating system, network drivers, and other always-installed functionality. While it is *not* a superset of the Foundation OE, it *is* a superset of the Minimal Technical OE. Unlike the Minimal Technical OE, however, the Technical Computing OE is available on both technical servers and workstations.

In addition to the features found in the Minimal Technical OE, the HP-UX 11i v2 Technical Computing OE includes the following features. (For an overview of the features that are new or have changed in this release, see Chapter 3, “What is New at a Glance,” on page 35.)

Always-Installed Features[1]

- HP CIFS Client
- HP CIFS Server

- PAM Kerberos
- Runtime Plug-in (JPI) for Mozilla for the Java™ 2 Platform v1.3 and v1.4
- HP 3D Technology for the Java 2 Standard Edition Platform (Itanium®-based systems only)
- HP MLIB
- HP Message Passing Interface (MPI)

Default-Installed Features

- See “HP-UX 11i v2 Foundation Operating Environment” on page 22

Selectable Features

- See “HP-UX 11i v2 Foundation Operating Environment” on page 22

1. For definitions of *always-installed*, *default-installed*, and *selectable*, see “HP-UX 11i v2 Software and Driver Bundle Types” on page 20.

Software Pack (Optional HP-UX 11i v2 Core Enhancements)

This is the first release of the HP-UX 11i v2 Software Pack (SPK) media, which contains optional core enhancements for HP-UX 11i v2.

The SPK media is included in the HP-UX 11i v2 media kit. You can also download SPK from HP's Software Depot:

- Go to **`http://software.hp.com`**.
- Search for "SWPACKv2."
- Click "HP-UX Software Pack (Optional HP-UX 11i v2 Core Enhancements)." At this site, you can read descriptions of specific products, as well as download them.

Product notes for individual features can also be found in the `DOCS` directory on the SPK media.

The May 2005 release of SPK delivers the following features. For more information, see the indicated pages:

- HP-UX Standard Mode Security Extensions (see page 159)
- Node and Host Name Expansion (see page 125)
- Portability Package (see page 176)

NOTE If you choose to load only the May 2005 versions of these SPK features, without doing a complete update to the May 2005 version of HP-UX 11i v2, you must first load the September 2004 version of HP-UX 11i v2.

HP-UX 11i v2 Compatibility

HP-UX Compatibility between HP-UX Releases, Across Architectures, and Across Hardware Platforms

Introduction

HP understands the need for investment protection better than any other computer vendor. HP provides complete compatibility for the most comprehensive investment protection in the industry. HP provides:

- Binary and source code compatibility across operating system releases
- Binary and source code compatibility across architectures
- Field upgradability across architectures (HP customers can upgrade their systems in place)
- Binary compatibility across hardware platforms including PA-8800 binary compatibility

Compatibility across Operating System Releases

HP provides forward binary compatibility between the versions of HP-UX 11i on the same architecture. This means that:

- HP-UX 11i v1.5 applications run unmodified on HP-UX 11i v1.6 and on HP-UX 11i v2.
- HP-UX 11i v1.6 applications run unmodified on HP-UX 11i v2.
- HP-UX 11i v2 September 2004 and later releases are engineered to provide application binary compatibility between HP-UX 11i v1 (B.11.11) and earlier releases of HP-UX 11i v2.

This binary compatibility does not apply to kernel-intrusive applications or applications that rely on proprietary data structures inside HP-UX.

NOTE

HP-UX 11i v2 returns `B.11.23` as the release identifier in the `uname` command.

HP C compilers for the HP 9000 (PA-RISC) systems support the C89 (ISO/IEC 9899:1989) standard. The C compilers for HP Integrity (Itanium®-based) systems support both the C89 and newer C99 (ISO/IEC 9899:1999) standards. This means that while C code developed on HP 9000 servers is forward compatible to HP Integrity servers, the reverse is not necessarily true.

HP-UX 11.0 applications that have been certified or proven to run well on HP-UX 11i v1 can also be considered to be compatible with HP-UX 11i v2. (HP-UX 11.0 application programs can run unmodified on HP-UX 11i v1 although binary compatibility is not guaranteed for applications that are kernel intrusive or depend on internal proprietary data structures of HP-UX 11i v1.) Compatibility details are fully documented in these Release Notes. Additionally, there is complete data compatibility between the architectures.

Compatibility between HP-UX 11i for HP 9000 (PA-RISC) systems and HP-UX 11i for HP Integrity (Itanium®-based) systems includes the following features:

- HP-UX 11i v2 for Itanium®-based systems can transparently execute PA-RISC binaries. This is possible through the Aries dynamic code translation technology which is a built-in, integrated part of every copy of HP-UX 11i for Itanium®-based systems. Performance in compatibility mode is likely to be less than native mode, but binary compatibility ensures that all PA-RISC applications can execute on the Itanium®-based architecture without recompilation.
- HP-UX 11i v2 for Itanium®-based systems and HP-UX 11i v2 for PA-RISC systems are built from the same source code. This means that HP-UX 11i v2 has the same look and feel and operates in a very similar fashion on both architectures.
- The system management, security, and high availability tools and products for HP-UX 11i v2 for HP Integrity systems are the same as for HP-UX 11i v2 for HP 9000 systems. This means that current HP-UX 11i system administrators can apply their skillsets directly to HP-UX 11i for HP Integrity systems.
- HP-UX 11i v2 features application source code compatibility between the HP 9000 and HP Integrity systems. Application programs from HP-UX 11i for HP 9000 systems can be made into native applications on HP Integrity systems with no source code modifications necessary. (HP-UX 11i for Itanium®-based systems supports both 32-bit and 64-bit applications even though Intel® Itanium® is a 64-bit architecture.) However, converting a 32-bit application into a 64-bit application may require some source code changes.
- HP-UX 11i for Itanium®-based systems has the same data formats as HP-UX 11i for PA-RISC systems. This means that there is complete data interoperability between the two architectures. This interoperability allows the seamless integration of HP-UX 11i v2 systems into an existing network of HP-UX systems.

Upgradability across Architectures

As of July of 2002 HP began to introduce HP-UX 11i servers that support both PA-RISC and Intel® Itanium® processors. For these servers, customers are be able to specify the architecture they desire when they order systems. Servers that are initially ordered as PA-RISC servers can be field-upgraded to Itanium®-based systems and will enjoy all of the compatibility advantages listed above.

Independent Software Vendor (ISV) Compatibility across Architectures

With the source, data, and binary compatibility that HP provides from the PA-RISC architecture to the Itanium®-based architecture, it is expected that the vast majority of independent software vendors (ISVs) that support applications on PA-RISC will transition these applications to HP-UX 11i for Itanium®-based systems. This means that not only will HP-UX 11i and its layered system management, security, and high availability products have a common “look and feel” on the two architectures, it also means that application products will have a common “look and feel” across the two architectures, thus eliminating the need to retrain users for new applications.

Exceptions to PA-RISC/Itanium®-based Binary Compatibility

In nearly all cases PA-RISC applications can execute under the Aries dynamic code translator which is included as an integrated component in every copy of HP-UX 11i for Itanium®-based systems. The following list documents the exceptions to binary compatibility. HP's Aries dynamic code translator does not support the following:

- Mixing binaries between PA-RISC and Intel® Itanium®. An application must be all PA-RISC, all 32-bits or all 64-bits.
- Applications compiled on HP-UX 8.*x* or earlier.
- PA-RISC privileged instructions.
- Applications that depend on kernel data structures.
- Timing-dependent applications.
- Signaling via floating point Not a Numbers (NaNs).
- Applications or debuggers that use `ptrace`, `ttrace`, and `profil` system calls.
- Core dumps for PA-RISC applications that abort.
- Automatic synchronization of data and instruction caches for applications that dynamically generate code such as Java.
- Applications that read the B-bit in the Process Status Word (PSW).
- Applications that use maximum virtual memory (because the dynamic translator itself consumes a small amount of the virtual memory of a process).
- Applications that rely on differences between `vfork` and `fork` system calls.
- The emulation of debugging tools that have architectural dependencies on the PA-RISC architecture.

Recompiling 32-Bit PA-RISC Applications for Native Execution on Itanium®-based systems

In nearly all cases, 32-bit PA-RISC applications can be recompiled for native execution on Itanium®-based systems without source code modifications. This is true because the HP compilers for Intel® Itanium® support both 32-bit and 64-bit data models.

In the case of a 32-bit PA-RISC application that is being recompiled for native execution on Itanium®-based systems, the compiler will emit instructions that cause the application to behave as though it is a 32-bit application executing on a 32-bit architecture even though the underlying architecture is 64 bits. This is transparent to the application; it has no awareness that it is actually executing on a 64-bit architecture.

It is this feature of the HP compilers that allows the vast majority of 32-bit PA-RISC applications to be recompiled without source code modification for native execution on the Intel® Itanium® architecture.

Help for Independent Software Vendors (ISVs) Moving to HP-UX 11i v2

Independent Software Vendors (ISVs) whose HP-UX 11i v1 application meets the criteria for binary compatibility (i.e., not kernel intrusive, etc.) and fails to function on HP-UX 11i v2 for HP 9000 as it functions on HP-UX v1, can contact HP through a special support line (for North America) at 1-800-249-3294 and use option 2, and then option 1. Help is also available alternatively by sending an e-mail to spp@cup.hp.com. When calling this number or sending an e-mail, identify the problem as a compatibility failure and the support staff will help you with the situation.

Binary Compatibility Across Hardware Platforms

HP maintains application binary compatibility across all hardware platforms of the same family which are supported by the same version of HP-UX. In other words, binary compatibility across the members of a hardware family (such as PA-RISC) is provided if the following conditions apply:

- The hardware platforms are members of the same family (that is, they are all PA-RISC-based or they are all Itanium®-based).
- The application software is run on the same or a later version of HP-UX. (Binaries are not necessarily backward-compatible; that is, a software application may not run properly on an earlier version of HP-UX.)
- The application software has used only externally documented and supported software interfaces (that is, it does not use undocumented interfaces).
- The application software has no dependencies on specific types of hardware (for example, specific mass storage devices or specific I/O or networking adapters).

HP has an excellent record of introducing new processors that provide complete software binary compatibility with previous processors, thus protecting customer and partner investments and allowing support for new processors with a minimum of risk and investment. HP has always recognized that software binary compatibility with new processors is an important partner and customer requirement.

PA-8800 Binary Compatibility

Applications and software developed for systems with the PA-8X00 processors will run correctly without modification on PA-8800 modules. These new processors differ from previous ones in the use of a dual-core module that replaces a single PA-8700 processor, thus doubling the number of processors that each server can support and improving price/performance. PA-8800 modules are seen by HP-UX as two separate processors and are supported by HP-UX 11i v2 September 2004 and later release.

Compatibility Issues or Exceptions in HP-UX 11i v2 May 2005

Compatibility issues or exceptions have been noted for the following products or features that have been updated in May 2005. For details, see the indicated pages.

For documentation of compatibility issues or exceptions in previous updates to HP-UX 11i v2, see the previous editions of the *HP-UX 11i v2 Release Notes*, available at **`http://docs.hp.com/en/oshpux11iv2.html`**. The *HP-UX 11i v2 September 2004 Release Notes*, in particular, lists compatibility exceptions from HP-UX 11i v1 to HP-UX 11i v2.

NOTE Please note that your system must have an HP-UX 11i v2 Operating Environment (OE) from September 2004 (or later) before updating your system with any individual patches, patch bundles, or products released from September 2004 forward.

Chapter 4: Workstation- and Server-Specific Information

- HP Instant Capacity (formerly Instant Capacity on Demand) (see page 91)
- USB-00 (Universal Serial Bus) (see page 86)

Chapter 5: General System Administration

- HP Process Resource Manager (see page 103)
- HP Serviceguard (see page 113)
- HP-UX Workload Manager (see page 106)
- Node and Host Name Expansion (see page 125)

Chapter 6: Disk and File Management

- No issues at this time.

Chapter 7: Internet and Networking

- No issues at this time.

Chapter 8: Security

- HP-UX Host Intrusion Detection System (see page 153)

Chapter 9: Commands and System Calls

- No issues at this time.

Chapter 10: Libraries and Programming

- Termcap and Curses Interfaces (see page 178)
- Perl (see page 175)

Chapter 11: Internationalization

- No issues at this time.

Chapter 12: Other Functionality

- No issues at this time.

Support of Products

For information about the support of products not listed in elsewhere in this document, refer to the product's individual documentation, which may be found at the following locations:

- HP Technical Documentation: **http://docs.hp.com**
- HP Software Depot: **http://software.hp.com**
- IT Resource Center: **http://itrc.hp.com**.

See also "Software Transition Kit" on page 178, for information about a collection of tools and documents to help transition applications from various operating systems, such as Tru64 UNIX or Sun Microsystems Solaris, or from earlier versions of HP-UX.

3 What is New at a Glance

What is in This Chapter?

This chapter provides a quick overview of what is new, has changed, and has been deprecated or obsoleted in each HP-UX 11i v2 release. For further details, see the cross-referenced pages in the remainder of this book or, as noted, in previous editions.

What is New in the May 2005 Release?

In the following summaries, you can obtain a general picture of how the May 2005 release of HP-UX 11i v2 differs from the September 2004 release of HP-UX 11i v2.

For further information, see the indicated sections in the remainder of this document.

Chapter 2: "Introduction to HP-UX 11i Version 2" (see page 17)

- HP-UX 11i v2 Minimal Technical Operating Environment (MTOE): HP-UX 11i v2 May 2005 is the last release that will include the MTOE. After May 2005, the MTOE will no longer be delivered. (See "HP-UX 11i v2 Minimal Technical Operating Environment" on page 25.)
- HP-UX 11i v2 Technical Computing OE (TCOE): The HP-UX 11i v2 May 2005 TCOE is the last release that will be supported on Itanium®-based workstations. It will continue to be updated for servers. (See "HP-UX 11i v2 Technical Computing Operating Environment" on page 26.)
- Software Pack: SPK media with optional core enhancements now delivered for HP-UX 11i v2. (See "Software Pack (Optional HP-UX 11i v2 Core Enhancements)" on page 28.)

Chapter 4: "Workstation- and Server-Specific Information" (see page 73)

- Hardware Enablement Patch Bundle (`HWEnable11i`): Diagnostics qualified with new DAT and LTO tape drives, and updated for new I/O cards. Updated I/O driver bundles noted. (See "Hardware Enablement Patch Bundle" on page 74.)
- HP Instant Support Enterprise Edition (ISEE): Updated to incorporate defect fixes and few feature enhancements. (See "HP Instant Support Enterprise Edition" on page 75.)
- Networking and Mass Storage Drivers (see page 77):
  - **New Product:** `10GigEthr-00`: Adds support for the AB287A PCI-X 10 Gigabit Ethernet card. Now available as a selectable product in the OEs. (See "10GigEthr-00 (10 Gigabit Ethernet)" on page 81.)
  - `FibrChanl-01`: Now supports the AB465A card. (See "FibrChanl-01 (Fibre Channel)" on page 83.)
  - `GigEther-01`: Now supports the AB465A card. (See "GigEther-00, GigEther-01, and IEther-00 (Gigabit Ethernet)" on page 78.)
  - `IEther-00`: Now supports the AB290A and AB545A cards. (See "GigEther-00, GigEther-01, and IEther-00 (Gigabit Ethernet)" on page 78.)
  - `RAID-01`: Updated to incorporate defect fixes. (See "RAID-01" on page 84.)
  - `scsiU320-00`: Supports the A7173A card and now, the AB290A card. (See "scsiU320-00" on page 85.)
  - `USB-00` version C.01.00: Enables USB DVD boot support for future HP servers. Now an always-installed product for Itanium®-based servers. (See "USB-00 (Universal Serial Bus)" on page 86.)

- Utility Pricing Solutions (see page 91):
  - HP Instant Capacity (iCAP) (formerly Instant Capacity on Demand, or iCOD): Updated to version B.11.23.07.00. Can now be used in an integrated virtual partitioned environment. E-mail connectivity no longer required and boot-time compliance check now performed. (See “HP Instant Capacity (formerly Instant Capacity on Demand)” on page 91.)
  - HP Pay per use (PPU): Updated to version B.11.23.07.02 to support HP-UX Virtual Partitions (vPars) and the Node and Host Name Expansion product. (See “HP Pay per use” on page 94.)

Chapter 5: “General System Administration” (see page 95)

- Enterprise Cluster Master Toolkit: Updated to version B.02.21 with scripts for Oracle 9i and 10g database applications, HP Apache, and HP CIFS, as well as enhancements to the Oracle Toolkit. (See “Enterprise Cluster Master Toolkit” on page 96.)
- Event Monitoring Services: Now supports the Node and Host Name Expansion feature that is available on Software Pack. (See “Event Monitoring Services” on page 97.)
- **New Bundle:** Feature Enablement Patch Bundle (`FEATURE11i`): Consists of patches required for HP-UX Virtual Partitions (vPars) functionality, `USB-00`, and future products with new features. (See “Feature Enablement Patch Bundle (Feature11i)” on page 98.)
- GlancePlus Pak: Updated to version C.03.86 with new `parm` file parameters and new metrics, as well as enhancements to `gpm` and `glance`. (See “GlancePlus Pak” on page 99.)
- High Availability Monitors: Now supports the Node and Host Name Expansion feature. (See “High Availability Monitors” on page 100.)
- HP Partitioning (see page 101):
  - **New Product:** HP Global Workload Manager (gWLM): Allows you to centrally define resource-sharing policies that you can use across multiple HP servers. Now delivered with HP-UX 11i v2. (See “HP Global Workload Manager” on page 101.)
  - HP Process Resource Manager (PRM) version C.03.00: Includes integration with HP-UX 11i Security Containment and HP Systems Insight Manager, as well as support for 256 PRM groups and other changes. (See “HP Process Resource Manager” on page 103.)
  - **New to HP-UX 11i v2:** HP-UX Virtual Partitions (vPars) A.04.01: Will be available as a separate product that can be purchased at **`http://software.hp.com/portal/swdepot/displayProductInfo.do?productNumber=T1335BC`**. The vPars product enables multiple instances of a selected HP-UX 11i v2 OE to run simultaneously on one server or within one nPartition, with each OE instance hosting its own set of applications in an isolated environment. The `FEATURE11i` patch bundle, delivered on the OE media, includes required patches for the installation of this product. (See “HP-UX Virtual Partitions” on page 105.)

  - — HP-UX Workload Manager: Updated to version A.03.00 with more flexibility in resource management and more secure environments. (See “HP-UX Workload Manager” on page 106.)
  - — HP-UX Workload Manager Toolkits: Pay Per Use Toolkit and its `utilitydc` command now deprecated. (See “HP-UX Workload Manager Toolkits” on page 108.)
  - — nPartition Provider: Upgraded to version B.11.23.01.04.00.*x* to incorporate defect fixes and performance improvements. (See “nPartition Provider” on page 109.)
  - — Partition Manager: Now runs as an application under HP System Management Homepage, which has several effects. (See “Partition Manager (parmgr)” on page 110.)
  - — PRM Libraries: Bundle updated to version C.03.00. `PRM-Sw-Krn` fileset updated to version C.01.03. When upgrading HP Process Resources Manager, you will need to reboot the system. (“PRM Libraries” on page 111.)
  - — **New Product:** vPar Provider: Extracts information about virtual partitions on a system. Now delivered with HP-UX 11i v2. (See “vPar Provider” on page 112.)
- HP Servicecontrol Manager: Replaced by HP Systems Insight Manager. (See “HP Servicecontrol Manager” on page 113 and “HP Systems Insight Manager” on page 118.)
- HP Serviceguard: Unchanged for this release. Support for HP-UX Virtual Partitions and HP-UX 11i Security Containment tested and confirmed. Current Serviceguard products certified by HP for coexistence with Shadow Passwords. Limit of 31 bytes for `hostname` within Serviceguard clusters. Compatibility issue noted with certain configurations of Bastille. (See “HP Serviceguard” on page 113.)
- HP Serviceguard NFS Toolkit: Updated to version A.11.23.03 with improved failover performance for `rpcbind` failures, as well as defect fixes. (See “HP Serviceguard NFS Toolkit” on page 116.)
- **New Product:** HP System Management Homepage (bundle `SysMgmtWeb`): A Web-based interface that consolidates and simplifies single system management for HP servers, now available for HP-UX 11i v1 and v2. (See “HP System Management Homepage” on page 117.)
- **New to HP-UX 11i v2 OEs:** HP Systems Insight Manager: Replaces HP Servicecontrol Manager. Updated to version 4.2 with support for System Management Homepage and other products. (See “HP Systems Insight Manager” on page 118.)
- HP-UX Peripheral Device Tool (`pdweb`): Updated to version B.11.23.04 with support for the Node and Host Name Expansion, as well updating of the `waconf` command. (See “HP-UX Peripheral Device Tool (pdweb)” on page 121.)
- Ignite-UX: Updated to version C.6.2.*x* with updated documentation, defect fixes, and enhancements. (See “Ignite-UX” on page 122.)
- Kernel tunable `hdlpreg_hash_locks`: Deprecated and planned for future obsolescence. (See “Kernel Tunable hdlpreg_hash_locks (Deprecated)” on page 125.)
- **New Product:** Node and Host Name Expansion (`NodeHostNameXpnd`) product bundle: Provides the ability to set node and host names up to 255 bytes. Now available on Software Pack. (See “Node and Host Name Expansion” on page 125.)

- Online Diagnostics (`OnlineDiag`): Now includes support for HP-UX Virtual Partitions (vPars) A.04.01 and Node and Host Name Expansion, as well as other changes. (See “Online Diagnostics” on page 127.)
- Quality Pack: Once again HP-UX 11i v2 includes Quality Pack, as will future releases of HP-UX 11i v2. (See “Quality Pack Patch Bundle” on page 130.)
- Software Distributor: Updated with new versions of the `gzip` and `swpackage` commands to provide added capability and increased performance. (See “Software Distributor” on page 131.)
- Software Package Builder: Updated with product enhancements. (See “Software Package Builder” on page 132.)
- Update-UX: Updated to reflect defect fixes. No new features or functionality. (See “Update-UX” on page 133.)
- Upper Layer Module (ULM) Services: Deprecated. (See “Upper Layer Module (ULM) Services (Deprecated)” on page 134.)

Chapter 6: “Disk and File Management” (see page 135)

- 32 Terabyte (TB) File System Support: VxFS 3.5 file systems of up to 32 TB now certified. (See “32 Terabyte File System Support” on page 136.)
- HFS: HP-UX’s implementation of UFS, now deprecated and planned for future obsolescence. (See “HFS (Deprecated)” on page 136.)
- HP CIFS Client: Updated to version A.01.09.03 to incorporate defect fixes. (See “HP CIFS Client” on page 136.)
- HP CIFS Server: Updated to version A.01.11.04 with security patches. Also now based on Samba 2.2.12. (See “HP CIFS Server” on page 137.)
- VERITAS File System 3.5 (HP JFS / HP OnlineJFS): Now provides permanent licenses for HP OnlineJFS. Support for 32 TB file systems now certified. (See “VERITAS File System (HP JFS / HP OnlineJFS)” on page 138.)

Chapter 7: “Internet and Networking” (see page 141)

- HP WBEM Services for HP-UX: Updated to version A.02.00.07 with numerous defect fixes, as well as support for CIM Process Indications as defined by the DMTF WBEM Specification. (See “HP WBEM Services for HP-UX” on page 142.)
- HP-UX Web Server Suite (see page 143):
  - HP-UX Apache-based Web Server: Updated to v.2.0.53.00 as primarily a security and bug fix release. (See “HP-UX Apache-based Web Server” on page 145.)
  - HP-UX Tomcat-based Servlet Engine: Updated to v4.1.29.04 as primarily a bug fix release, with Commons-DBCP upgraded to 1.2.1. (See “HP-UX Tomcat-based Servlet Engine” on page 146.)
  - HP-UX Webmin-based Admin: Updated as primarily a security and bug fix release. (See “HP-UX Webmin-based Admin” on page 146.)
- Netscape Directory Server for HP-UX: Updated to version B.06.11.30.001 to provide defect fixes and a minor packaging change. (See “Netscape Directory Server for HP-UX” on page 147.)

Chapter 8: "Security" (see page 149)

- **New Product:** HP-UX 11i Security Containment: Provides the next generation of security features. Available on the Web at `http://software.hp.com` and expected to be released in the near future. (See "HP-UX 11i Security Containment" on page 150.)
- HP-UX Auditing System: Upon installation of the HP-UX Standard Mode Security Extensions bundle, can now perform audits without converting the system to trusted mode. (See "HP-UX Auditing System" on page 152.)
- HP-UX Host Intrusion Detection System: Upgraded to release 3.0 with better performance and CPU utilization, as well as many enhancements and defect fixes. (See "HP-UX Host Intrusion Detection System" on page 153.)
- HP-UX IPFilter: Updated to version A.03.05.11.01 with defect fixes and performance enhancements. (See "HP-UX IPFilter" on page 156.)
- HP-UX Secure Shell: Updated to A.03.91.009 with new features, including `sshd re-exec` for each new connection, permission and ownership checks for program configuration files, *sftp* (1) interface improvements, and several other features. (See "HP-UX Secure Shell" on page 157.)
- **New Product:** HP-UX Security Attributes Configuration (bundle `SecConfig`): Used to configure systemwide and per-user values of security attributes of local users and NIS users. Now delivered with HP-UX 11i v2. (See "HP-UX Security Attributes Configuration" on page 158.)
- **New Bundle:** HP-UX Standard Mode Security Extensions: Enables new security features to be used in standard mode. Now available on Software Pack. (See "HP-UX Standard Mode Security Extensions" on page 159.)
- OpenSSL: Updated to version A.00.09.07e with automatic generation of a self-signed host certificate and a private key. (See "OpenSSL" on page 162.)

Chapter 9: "Commands and System Calls" (see page 165)

- The `hostname` Command: With installation of the Node and Host Name Expansion product (available on Software Pack), `hostname` now able to set and display the name of the current host system at up to 255 bytes in length. (See "The hostname Command" on page 166.)
- The `setuname` Command: With installation of the Node and Host Name Expansion product (available on Software Pack), `setuname` now able to modify the value for the system and/or node name to up to 255 bytes. (See "The setuname Command" on page 167.)
- The `uname` Command: With installation of the Node and Host Name Expansion product (available on Software Pack), `uname` now able to set and display the current system and/or node name to up to 255 bytes. (See "The uname Command" on page 168.)

Chapter 10: "Libraries and Programming" (see page 169)

- HP MLIB: Updated to version 9.0 with new features, including support for arbitrary length FFTs, FFT performance enhancements, and support for VMATH, CXML, and BCS. (See "HP MLIB" on page 170.)

- HP MPI: Updated to version 2.1.1 with support for InfiniBand on Intel® Itanium®, HyperFabric2, and TCP/IP on clusters. Includes Visual MPI for debugging and analysis, improved gather performance for TCP/IP, and other improvements. (See "HP MPI" on page 171.)
- Java 2 Standard Edition Platform (see page 172)
  - HP-UX Software Development Kit and Runtime Environment for the Java 2 Standard Edition Platform: Updated with later versions of 1.3 and 1.4 to provide the most current Java technology. Version 1.3 deprecated and planned for future obsolescence. (See "HP-UX Software Development Kit and Runtime Environment for the Java 2 Standard Edition Platform" on page 172.)
  - Java for HP-UX Add-on Standard C++ Runtime Libraries: Updated to coincide with the updating of SDK and RTE. (See "Java for HP-UX PA-RISC Add-On C++ Libraries for SDK and RTE" on page 173.)
  - Runtime Plug-in (JPI) for Mozilla for the Java 2 Platform versions 1.3 and 1.4: Updated to be compatible with SDK 1.3 and 1.4. Netscape no longer supported. Version 1.3 deprecated and planned for future obsolescence. (See "Runtime Plug-in (JPI) for Mozilla for the Java 2 Platform" on page 173.)
  - `ObsJava12`: Added to remove previously-installed Java version 1.2. (See "ObsJava12" on page 174.)
- Perl 5.8.2 build 808: Includes better Unicode support and numeric accuracy, new I/O and thread implementation, and other changes. (See "Perl" on page 175.)
- **New Product:** Portability Package (version B.11.23.0505): Now available on Software Pack, provides select Tru64 UNIX Application Program Interfaces (APIs), as well as enhancements to existing APIs, to ease the migration of code from Tru64 UNIX and Sun Microsystems Solaris OS to HP-UX 11i v2. (See "Portability Package" on page 176.)
- Software Transition Kit: Provides tools and documents to help transition applications from various operating systems, such as Tru64 UNIX or Sun Microsystems Solaris, or from earlier versions of HP-UX. Available on the Application Release CD. (See "Software Transition Kit" on page 178.)
- Termcap and Curses Interfaces: Termcap (`libtermcap`, `libtermlib`) and HP curses (`libHcurses`) interfaces deprecated in HP-UX 10.20 and to be removed in a future release. Applications utilizing these libraries should migrate to the standard X/Open curses interfaces. (See "Termcap and Curses Interfaces" on page 178.)

Chapter 11: "Internationalization" (see page 181)

- No changes in this release.

Chapter 12: "Other Functionality" (see page 183)

- Common Desktop Environment (CDE): X11, Xt, Motif, and Audio support for expanded nodenames and hostnames now available on Software Pack. (See "Common Desktop Environment (CDE)" on page 184.)

What is New in the September 2004 Release?

The following summaries pertain to the September 2004 HP-UX 11i v2 release. For further information, see the indicated chapters in the *HP-UX 11i Version 2 September 2004 Release Notes*, available in its most current version at **http://www.docs.hp.com/hpux/os/11iV2/**.

The following are not exhaustive lists, so it strongly recommended that you consult the *HP-UX 11i Version 2 September 2004 Release Notes* for information that is not included here.

The summaries for the September 2004 release are divided into two lists:

1. What is New in September 2004 for Customers Migrating from HP-UX 11i v1? (see page 42)
2. What is New in September 2004 for Existing Customers of HP-UX 11i v2? (see page 51)

What is New in September 2004 for Customers Migrating from HP-UX 11i v1?

In the following summaries, you can obtain a general picture of how the current release of HP-UX 11i v2 differs from the June 2004 release of HP-UX 11i v1. For further details, see the indicated chapters in the *HP-UX 11i Version 2 September 2004 Release Notes*, available in its most current version at **http://www.docs.hp.com/hpux/os/11iV2/**.

In addition, you should review the list “What is New in September 2004 for Existing Customers of HP-UX 11i v2?” on page 51 for a picture of how the September 2004 release differs from the March 2004 release of HP-UX 11i v2.

What is New in September 2004 for Customers Migrating from HP-UX 11i v1

September 2004 Release Notes, Chapter 4: “Workstation- and Server-Specific Information”

- HP Instant Support Enterprise Edition: Formerly delivered on the HP-UX 11i v1 Support Plus media; now available with this release on HP-UX 11i v2.
- HP StorageWorks Command View SDM v1.08.00: Supports HP-UX 11i v2 on Itanium®-based platforms only. Near the release of HP-UX 11i v2 September 2004, a version of CVSDM to support HP-UX 11i v2 on PA-RISC platforms will be available on the Web.
- HP StorageWorks Secure Path V3.0E for HP-UX: Provides EVA Boot and Dump support on HP-UX 11i v2 September 2004 and later releases.
- HP-UX 11i v2 Driver Development Kit: Enhanced to support the current release of HP-UX 11i v2. Includes sample drivers and makefiles, as well as driver development tools for both PA-RISC and Itanium®-based systems, and other enhancements.
- HP-UX 3D Graphics Run Time Environment and Developer's Kit: Modules for hardware-accelerated OpenGL rendering removed because PA-RISC Workstations are not supported by this release. OpenGL rendering to remote displays supported via GLX protocol and HP Virtual Memory Driver.
- Networking and Mass Storage Drivers

  - Always-Installed Networking Drivers:
    - Gigabit Ethernet and Fast Ethernet: Includes TCP Segmentation Offload (TSO) support for `iether` and `igelan` drivers; 64-bit MIB statistics support; HP-UX LAN provider support.
    - PCI FDDI: Enhanced to provide the FDDI network connectivity from Itanium®-based platforms, in addition to existing PA-RISC platforms. Deprecated and planned for future obsolescence.
  - Selectable Networking Drivers:
    - HyperFabric: Now supports a transparent local failover feature.
    - PCI ATM: Support for A5513A (155 Mbps ATM adapter over MMF) available on IO expander slots of rp8400 platform.
    - PCI Token Ring: Now available on Itanium®-based 64-bit platforms, in addition to existing PA-RISC platforms. Deprecated and planned for future obsolescence.
  - Always-Installed Mass Storage Drivers:
    - `disc3` Driver: Obsolete.
    - Fibre Channel Tachlite Driver: Supports A6795A, A5158A. Boot support provided. Online diagnostic tool changed to support A6826A. Supports Interrupt Migration and OLAR.
    - `FibrChnl-01`: Default interrupt delay settings tuned to improve performance.
    - HP-UX Ultra320 SCSI Driver: Updated with quality and diagnostic improvements for Ultra320 SCSI solutions, including core and add-on HP adapters.
    - `RAID-01`: Delivers the driver `ciss`, which supports the A7143A, A9890A, and A9891A cards.
    - SCSI Drivers: Support limited to PCI cards. New cards A5149A and A5838A supported, with limitations on Intel® Itanium®. HVD cards A4800A, A5159A, and A5159B not supported. OLAR of A6828A and A6869A cards supported. Interrupt migration supported.
  - Selectable Mass Storage Drivers:
    - HP-UX iSCSI Software Initiator: Now available on HP-UX 11i v2.
- Online Addition and Replacement (OL* or OLAR): The `rad` command no longer available. SAM no longer used for OL*. The `olrad` command now used; performs a critical resource analysis to ensure system integrity will not be compromised.
- On Demand Solutions:
  - Instant Capacity on Demand (iCOD) 6.03: Incremented from version 6.02 for support on HP-UX 11i 2.
  - Pay Per Use B.07.00: Updated so that either pricing model can be used as the metric and so that a processor cap can be specified, as well as other changes.

- Supported Servers and Workstations: Many 64-bit PA-RISC servers are supported on this release. No 32-bit servers are supported. PA-RISC workstations are not supported.
- Technical System Configuration (TechSysConf): TC-OpenSource tools removed. Remaining TC-SysSetup alters kernel configurable parameters, as well as selected system configuration files, for improved system performance.

What is New in September 2004 for Customers Migrating from HP-UX 11i v1

September 2004 Release Notes, Chapter 5: "General System Administration"

- Compressed Dump: New feature with HP-UX 11i v2. Speeds up the crash dump process.
- Enterprise Cluster Master Toolkit B.02.11: DB2, Informix, and Sybase not supported. Mixed IA-PA failover for the Oracle9i package not supported.
- Event Monitoring Services: Framework and GUI available as 32-bit native applications on PA-RISC and Intel® Itanium®. 64-bit EMS Itanium®-based native libraries also available. Deprecated. Will be replaced post HP-UX 11i v3 with WBEM.
- GlancePlus Pak C.03.85: Contains enhancements to OVPA and GlancePlus, including new parm file parameters and new process-level metrics, as well as updated default adviser symptoms and alarms.
- High Availability Monitors: Available as 32-bit native binaries on PA-RISC & Itanium®-based platforms. Deprecated. Will be obsoleted post HP-UX 11i v3.
- HP Partitioning:
  - HP Process Resource Manager C.02.03: Installing this or later versions of PRM will not result in a reboot. Installing PHKL patches will.
  - HP-UX nPartition Configuration Commands: Management scope of commands extended to remote partitions and complexes. Additional enhancements added.
  - HP-UX Processor Sets: Once an optional product for the HP-UX 11i v1 release, now part of the HP-UX 11i v2 core kernel.
  - HP-UX Virtual Partitions (vPars) A.04.01: Will not release simultaneously with the September 2004 HP-UX 11i v2 release. Targeted to release in the middle of 2005.
  - HP-UX Workload Manager A.02.03: In most cases, installing this version (or later) will not result in a reboot. Installing PHKL patches will.
  - HP-UX Workload Manager Toolkits A.01.07: the `utilitydc` command, part of the Pay Per Use Toolkit, has been modified.
  - nPartition Provider B.01.03.00.*x*: Now supported on both PA-RISC and Itanium®-based systems.
  - Partition Manager 2.0: Features now brought to PA-RISC partitionable systems (as well as Itanium®-based), including improved GUI, support for CLM, and ability to configure nPartitions on remote complexes.
- HP Serviceguard A.11.16: Now supports clusters with mixed servers (HP Integrity and HP 9000).
- HP Serviceguard Quorum Server: Supported on both PA-RISC and Itanium®-based systems.

- HP-UX 11i v2 Required Patch Bundle (`BUNDLE11i`): Delivered with this release. Consists of patches for HP-UX 11i v2 that are required to install and update the operating system (OS).
- HP-UX Kernel Configuration: The `kcweb` application incorporates changes and new features. The `maxusers` tunable obsoleted. Kernel Configuration (KC) commands replaced by a new set of commands. Changes made in kernel location, boot-time selection, and automatic backup creation. The `/stand/system/` file enhanced.
- The Peripheral Device Tool (`pdweb`) B11.23.02: New for customers migrating from HP-UX 11i v1.
- Ignite-UX, version B.6.0.*x*: Includes ability to install and recover the HP-UX releases 11.0, B.11.11, B.11.22, B.11.23 PA-RISC, and B.11.23 Itanium®-based clients from a single Ignite-UX server. Also includes booting of both PA-RISC and Itanium®-based, known as dual boot, from a single media source; and installing one unified PA-RISC/Itanium®-based core HP-UX operating system bundle.
- Improved Database Startup and Shutdown Times: Database startup and shutdown times have been drastically reduced.
- Interrupt Migration: New for customers migrating from HP-UX 11i v1, this feature can be used to view and modify the interrupt configuration of the system.
- MySQL: Updated with tightened security. Product has been deprecated.
- Obsolescence Product: New product, used in an update when obsolete software on the system needs to be removed.
- OnlineDiag: Includes cell-local memory (CLM) support for PA-RISC platform, as well as various bug fixes and enhancements. Support added for new devices.
- Quality Pack Patch Bundle: All patches that were in the March 2004 HP-UX 11i v2 Quality Pack will be superseded by dual-architecture patches, which will be placed in `BUNDLE11i`.
- SAM-NNC: Added support for VLAN, IPoIB, large send, and DHCPv6 functionality, plus other changes.
- Servicecontrol Manager: Contains only minor updates. All functionality remains the same. Product has been deprecated.
- Software Distributor (SD): Updated to a new version to support this new release of HP-UX 11i v2.
- Software Package Builder A.02.00: Updated to incorporate defect fixes.
- System Administration Manager (SAM): Includes new tools, HP-UX Kernel Configuration tool and HP-UX Peripheral Devices tool.
- System V Shared Memory: Incorporates the functionality of the now-obsoleted ShmemExtensions product. Maximum for the *`shmmni`* tunable parameter increased.
- Update-UX: Updated to incorporate defect fixes.

What is New in September 2004 for Customers Migrating from HP-UX 11i v1

September 2004 Release Notes, Chapter 6: “Disk and File Management”

- 16 Terabyte (TB) File System Support: VxFS 3.5 file systems of up to 16 TB now certified.
- AutoFS 2.3: Upgraded to include the features of the SUN ONC AutoFS version 2.3 product, as well as performance enhancements, including on-demand mounting.

- DeviceIDS: Provides a significant performance improvement for AutoFS at unmount time.
- File Systems Backup and Recovery Commands: The commands *fbackup* (1M), *frecover* (1M), and *ftio* (1) deprecated.
- Hierarchical File System (HFS): Deprecated. Will be removed in a future release.
- HP CIFS Client A.01.09.02: Provides 64-bit PAM-NTLM libraries support and defect fixes.
- HP CIFS Server 2.2i (A.01.11.01): Provides new LDAP support functionality, as well as other new features and defect fixes.
- Logical Volume Manager (LVM) and MirrorDisk/UX: Performance improved. LVM no longer performs software bad block relocation. Defects fixed.
- Network File System (NFS): New option added to the `umount` command. Compatibility exception noted.
- Network Information Service Plus (NIS+): Deprecated and planned for future obsolescence. Valid modification requests to update NIS+ tables will now fail if the size of the request is larger than 9000 bytes.
- Portable File System (PFS): Obsolete.
- VERITAS File System (VxFS/HP OnlineJFS/JFS) 3.5: Contains new and changed features, including new and/or enhanced tunable parameters, enhanced VxFS commands, new I/O error handling policy, new default intent log mode, new default system block size, VxFS system activity reporter, forced unmounts, and more. Enables creation of file systems up to 32 TB (16 TB has been certified).
- VERITAS Volume Manager (VxVM) 3.5 for HP-UX (Base): Includes new versions of VEA and SIG Licensing, as well as defect fixes.

What is New in September 2004 for Customers Migrating from HP-UX 11i v1

September 2004 Release Notes, Chapter 7: “Internet and Networking”

- HP Data Link Provider Interface (DLPI): Includes enhancements to the Streams interface; new third-party driver interface for non-native Streams drivers; consolidation of `.h` files; obsolescence of the dump read capability of the *lanscan* (1M) command; support for TCP Segmentation Offload (TSO or Large Send), InfiniBand technology, and 64-bit MIB.
- HP Openview Emanate Agent 15.3: Agents are now SNMPv3 compatible. IPv6 agent added.
- HP-UX LAN Provider: New with this release of HP-UX 11i v2. Client applications can use this Provider to determine 100bt and Gigabit links available on the system and collect information about them.
- HP-UX Mobile IPv6 A.01.01: Offers the same functionality as A.01.00, but delivery method has changed.
- HP-UX Web Server Suite:
  - HP-UX Apache-based Web Server 2.0.50.01: Primarily a security, bug fix release with enhancements.
  - HP-UX Webmin-based Admin A.1.070.01: Primarily a security, bug fix release.
- Internet Services:

— BIND 9.2.0: Includes incremental zone transfer, DNSSEC, dynamic DNS update, TSIG-based security, lightweight resolver library and daemon, improved logging mechanism, and other features.

— BOOTP and DHCP: Both implement a new tag to configure the IP address of the `tftp` server. Two new options included in the `/etc/dhcptab` file.

— DHCPv6: New product with HP-UX 11i v2.

— The `inetd` daemon: New variable and new command-line option added.

— IPv4 Address Display: The IPv4-mapped-IPv6 address display is now changed to display an IPv4 address.

— IPv6-enabled Internet Services products: Several products, including `inetd`, `telnet`, and R-commands, are IPv6 enabled.

— Logging User Accounting Information: The `telnetd`, `rlogind`, `remshd`, `rexecd` and `ftpd` utilities now use the new scalable `utmps`/`wtmps`/`btmps` interfaces to log user accounting information.

— Multimedia Streaming Protocols (MSP): Upon upgrade to HP-UX 11i v2, MSP will be removed. MSP will be available later as a Web upgrade. Customers who have not installed MSP on HP-UX 11i v1 will be unaffected.

— The `rbootd` remote boot server for RMP clients: Obsolete. Clients using the RMP protocol no longer supported; you must move from RMP to BOOTP.

— The `remsh`/`rexec` command and remote execution server: The `remshd()` function has been changed to display an error message under certain circumstances. The `remsh`/`rexec` process may appear hung when a user executes certain remote commands.

— The `rexecd` remote execution server: New option added to prevent a user from logging in as superuser. The [`use_psd`] option cannot be specified in the `/etc/pam.conf` file for `rexecd`.

— Route Administration Manager for IPv6 Routing Protocols (RAMIPv6): Upon upgrade to HP-UX 11i v2, RAMIPv6 will be removed. RAMIPv6 will be available later as a Web upgrade. Customers who have not installed RAMIPv6 on HP-UX 11i v1 will be unaffected.

— The `rwhod` server: Updated to use the `utmps` interfaces to read the user accounting information. Now supports valid hostname characters as per RFC 952 only.

— Secure Internet Services: New options added. IPv6 enabled for R-commands. Kerberos supported in an IPv6 environment for `ftp`, r-commands, and `telnet`.

— Sendmail 8.11.1: Offers several new features, including multiple queue directories, enhanced status codes as defined by RFC 2034, client port options, daemon port options, IPv6 support, and more.

— SLP 0.8: New with HP-UX 11i v2. Includes dynamic service tracking, ease of administration, and ease of development.

— TCP Wrappers 7.6: Includes features such as monitoring incoming requests for Internet Services, controlling access to services spawned by `inetd`, and enforcing access control in stand-alone daemon programs, among others.

— The `telnetd` function: Contains two new options.

  - WU-FTPD 2.6.1: Offers several new features, including virtual hosts support, the `privatepw` utility, IPv6 support, and new command-line options, as well as other changes.

- LAN Administration Commands: Include support for IPoIB, 64-bit MIB, and Native and Non-Native DLPI drivers developed by IHVs, plus new command-line options for `lanadmin`.
- Mozilla Application Suite 1.4.0.01: Contains full Japanese localization as well as other defect fixes and enhancements. Security bulletin posted.
- Netscape Directory Server 6.11: Includes enhancements to Multi-Master replication, login enhancements, virtual attribute search, new plug-ins support, and a data interoperability feature.
- Network Tracing and Logging (NetTL): Changes include formatting support for IPoIB and new CLI option to support configurable trace buffer timer value.
- Network Transport (ARPA): Changes include support for enhancements of HP-UX DLPI; enhancements to CKO interfaces between HP-UX transport and DLPI; removed support for dump reading by `netstat` and `arp`; IPv6 transport supported, and other changes. Problem and work-around noted: HP-UX sends TCP packets with incorrect window size. (
- Point-to-Point Protocol (PPP): Available on HP-UX 11i v2. Includes changes to Point-to-Point Protocol over Ethernet (PPPoE) and Point-to-Point Protocol for IPv6 (PPPv6).
- STREAMS/UX: The *HP-UX 11i v2 September 2004 Release Notes* contains an error and should instead read as follows: For non-blocking writes, during flow control conditions, STREAMS now returns **success (0 return value)** in the case of partial writes on STREAMS-based pipes.

What is New in September 2004 for Customers Migrating from HP-UX 11i v1

September 2004 Release Notes, Chapter 8: “Security”

- Boot Authentication: Now available on all Standard Systems. Standard Mode Boot Authentication feature can be configured by two parameters.
- Generic Security Service Application Programming Interface (GSS-API): IPv6 enabled.
- HP-UX Bastille 2.1: New product for customers migrating from HP-UX 11i v1.
- HP-UX IPFilter A.03.05.10.02: Includes additional defect fixes.
- HP-UX Secure Shell A.03.71.000: Contains several new features, including enhanced `ssh_prng_cmds` file for random number generation, new escape character for requesting a pseudo terminal, and support for generating KEX-GEX groups in the `ssh-keygen` file.
- HP-UX Strong Random Number Generator: New product with HP-UX 11i v2.
- HP-UX Host Intrusion Detection System 2.3: Product bundle renamed and restructured to improve product installation and maintenance.
- Install-Time Security B.01.*x.x*: New product for customers migrating from HP-UX 11i v1.
- Kerberos Client (KRB5-Client): Changes include support for appdefaults section in the `/etc/krb5.conf`; multidomain support; IPv6 support.

- OpenSSL A.00.09.07-d: A self-signed host certificate is automatically generated while installing OpenSSL.
- PAM: 64-bit framework now supported on both PA-RISC and Itanium®-based systems. New PAM module introduced. Defect fixes included.
- PAM-Kerberos v1.23: Supports both Itanium®-based and PA-RISC applications in 32-bit mode and 64-bit mode. The `pam_sm_acct_mgmt()` function returns `PAM_USER_UNKNOWN` instead of `PAM_SUCCESS` when the user is not present in the kerberos database.
- Security Patch Check 2.0: New product for customers migrating from HP-UX 11i v1.
- Shadow Passwords: New feature enhances system security by hiding user-encrypted passwords in a shadow password file. Now supported by SAM.

What is New in September 2004 for Customers Migrating from HP-UX 11i v1

September 2004 Release Notes, Chapter 9: "Commands and System Calls"

- The `execve[*]()` system calls: Beginning with HP-UX 11i v1.6, the kernel ignores `setuid` and `setgid` bits on scripts for security reasons. In addition, buffer overflow protection is now enabled.
- The `fuser` Command: Performance improved.
- The `insf`, `lssf`, and `mksf` Commands: Now support IHV drivers.
- The `mmap()` Function: Now possible to perform mappings between a process's address space and I/O device registers or memory.
- The `olrad` Command: The *rad* (1M) command replaced by the more robust *olrad* (1M) command.
- Post/Wait: New. Provides a fast, lightweight synchronization facility for user applications.
- The `ps` command: The default width is now set to 128 characters and a default file has been provided to define the length of the command field, which can be between 64-1020.
- The `rc` Shell Script: When a system needs reboot for some reason, messages in the file `/etc/rc.bootmsg` will be displayed before the system is rebooted.
- The `scsimgr` and `scsiscan` Commands: Deprecated. Planned for obsolescence in HP-UX 11i v3.
- The `settune` and `settune_txn` System Calls: Post HP-UX 11i v2, tunables set using these kernel system calls will not be persistent across reboots.
- The `sfd` Daemon: Deprecated. Planned for obsolescence in HP-UX 11i v3.
- The `sysdef` command: Deprecated. Reports incorrect values for some tunable parameters such as *msgmap*, *sema*, and *shmem*.

What is New in September 2004 for Customers Migrating from HP-UX 11i v1

September 2004 Release Notes, Chapter 10: "Libraries and Programming"

- Absolute Debugger (`adb`): Improved program includes support shared library, threads, multiprocessor dump reading, 64-bit DLKM dump reading, among others. Also includes improved command-line syntax, enhanced capabilities in expressions and format strings, and better file searching and writing capability, among others.
- HP aC++ Compiler for PA-RISC A.03.55.02: Includes numerous new features for customers migrating from HP-UX 11i v1.

- HP C Compiler for PA-RISC: Includes numerous changes to version B.11.11.02 in each subsequent release (B.11.11.04, B.11.11.06, B.11.11.08, B.11.11.10).
- HP Fortran for HP-UX 2.8.2: Includes performance tuning enhancements.
- HP MLIB 8.6: FFT routines support data sizes of any positive length.
- HP MPI 2.0.1: InfiniBand interconnect on PA-RISC supported.
- HP-UX Buffer Cache Tunable Parameters: All tunables associated to the sizing of the buffer cache (`nbuf`, `bufpages`, `bufcache_max_pct`, `dbc_min_pct`, and `dbc_max_pct`) have been deprecated and will be obsolete in HP-UX 11i v3.
- Java 2 Standard Edition Platform:
  - HP 3D Technology for the Java 2 Standard Edition Platform: Only for Itanium®-based systems. PA-RISC-based systems not supported.
  - Java for HP-UX PA-RISC Add-On C++ Libraries for SDK and RTE: Now included in HP-UX 11i v2.
- Math Library (libm): Although the C Math Library's API for PA-RISC is unchanged from HP-UX 11i v1, differences between it and the API for Itanium®-based systems should be noted.
- POSIX Threads: Augmented for PA-RISC systems to support two modes of scheduling, system scope (1x1) and process scope (MxN).
- The Software Transition Kit (STK): Available on the Web or Application Release media is a collection of tools and documents designed to help transition HP-UX applications from earlier versions of HP-UX to the latest version of HP-UX on the PA-RISC or the Itanium®-based platform.
- Transition Links: Deprecated. Will become obsolete in post-HP-UX 11i v2 releases.

What is New in September 2004 for Customers Migrating from HP-UX 11i v1

September 2004 Release Notes, Chapter 11: "Internationalization"

- Internationalization Features: Changes include Unicode 3.0 support, GB18030 standard, simplified Chinese input methods, mainframe `iconv` converters for Japanese characters, system support for Latin and South American locales, new locale binaries and `iconv` converters, Hong Kong supplementary character set (HKSCS), TrueType fonts for Asian languages, and other changes.
- Deprecated Functionality: Several commands, library routines, and lp model files deprecated. Will be removed in next major release of HP-UX.

What is New in September 2004 for Customers Migrating from HP-UX 11i v1

September 2004 Release Notes, Chapter 12: "Other Functionality"

- ccNUMA: Changes include: greater performance for some work loads; ability to configure systems for optimal performance with regard to interleaved versus cell local memory; ability to give guidance to OS for most appropriate memory allocation according to an application's usage model; ability to control how processes are distributed among localities.
- Common Desktop Environment (CDE): Changes include IPv6 support; greater accessibility for physically challenged users; `dtlogin` does not start X server when the mouse is not connected; large file (greater than 2GB) support provided by `dtfile`; and other changes. In addition, CDE requires a number of services and resources; if these are disabled either manually or with Bastille, there are several impacts on CDE.

- Distributed Computing Environment (DCE) Client and Integrated Login: Has new filesets and new product, Integrated Login. Now IPv6 enabled.

What is New in September 2004 for Existing Customers of HP-UX 11i v2?

In the following summaries, you can obtain a general picture of how the current release of HP-UX 11i v2 differs from the March 2004 release of HP-UX 11i v2. For further details, see the indicated chapters in the *HP-UX 11i Version 2 September 2004 Release Notes*, available in its most current version at **`http://www.docs.hp.com/hpux/os/11iV2/`**.

For a general picture of how this release differs from the June 2004 release of HP-UX 11i v1, you should review the list "What is New in September 2004 for Customers Migrating from HP-UX 11i v1?" on page 42.

What is New in September 2004 for Existing Customers of HP-UX 11i v2

September 2004 Release Notes, Chapter 4: "Workstation- and Server-Specific Information"

- HP Instant Support Enterprise Edition: New with this release of HP-UX 11i v2.
- HP StorageWorks Secure Path V3.0E for HP-UX: Provides EVA Boot and Dump support on HP-UX 11i v2 September 2004 and later releases.
- Networking and Mass Storage Drivers
  - Always-Installed Networking Drivers:
    - Gigabit Ethernet and Fast Ethernet: Includes TCP Segmentation Offload (TSO) support for `iether` and `igelan` drivers; 64-bit MIB statistics support; HP-UX LAN provider support; Virtual LAN (VLAN) support.
  - Selectable Networking Drivers:
    - HyperFabric: Now supports a transparent local failover feature.
    - PCI ATM: Support for A5513A (155 Mbps ATM adapter over MMF) available on I/O expander slots of rp8400 platform.
    - PCI Token Ring: Deprecated and planned for future obsolescence.
  - Always-Installed Mass Storage Drivers:
    - `disc3` Driver: Obsolete.
    - `FibrChnl-00`: Online diagnostic tool changed to support A6826A.
    - `FibrChnl-01`: An option has been added to the `fcmsutil` utility that updates the EFI driver stored in the flash ROM of an A6826A HBA port.
    - HP-UX Ultra320 SCSI Driver: Updated with quality and diagnostic improvements for Ultra320 SCSI solutions, including core and add-on HP adapters.
    - `RAID-01`: Delivers the driver `ciss`, which supports A7143A, A9890A, and A9891A cards.
    - SCSI Drivers: Cards A4800A, A5159A, and A5159B obsoleted.

  - — Selectable Mass Storage Drivers:
    - — HP-UX iSCSI Software Initiator: Now available on HP-UX 11i v2.
- Online Addition and Replacement (OL* or OLAR): Now available for both PA-RISC and Itanium®-based systems.
- On Demand Solutions:
  - — Instant Capacity on Demand (iCOD) 6.03: Incremented from version 6.01 to incorporate defect fixes.
  - — Pay Per Use B.07.00: Updated so that either pricing model can be used as the metric and so that a processor cap can be specified, as well as other changes.
- Secure Path V3.0E for HP-UX: Provides EVA Boot and Dump support on HP-UX 11i v2 September 2004 and later releases.
- Supported Servers and Workstations: Many 64-bit PA-RISC servers are supported on this release. No 32-bit servers are supported. PA-RISC workstations are not supported.
- Technical System Configuration (TechSysConf): Now supported on PA-RISC servers that run HP-UX 11i v2.

What is New in September 2004 for Existing Customers of HP-UX 11i v2

September 2004 Release Notes, Chapter 5: General System Administration

- Enterprise Cluster Master Toolkit B.02.11: New scripts added: HP Apache, HP Tomcat, HP CIFS.
- Event Monitoring Services: Framework and GUI available as 32-bit native applications on PA-RISC and Intel® Itanium®. 64-bit EMS Itanium®-based native libraries also available. Deprecated. Will be replaced post HP-UX 11i v3 with WBEM.
- GlancePlus Pak C.03.85: Contains enhancements to OVPA and GlancePlus, including new `parm` file parameters and new process-level metrics, as well as updated default adviser symptoms and alarms.
- High Availability Monitors: Available as 32-bit native binaries on PA-RISC and Itanium®-based platforms. Deprecated. Will be obsoleted post HP-UX 11i v3.
- HP Partitioning:
  - — HP Process Resource Manager C.02.03: Installing this or later versions of PRM will not result in a reboot. Installing PHKL patches will.
  - — HP-UX nPartition Configuration Commands: Includes changes to the `parmodify`, `parcreate`, and `parstatus` commands, as well as notes regarding the side effects of using WBEM's Trust Store file.
  - — HP-UX Virtual Partitions (vPars) A.04.01: Will not release simultaneously with the September 2004 HP-UX 11i v2 release. Targeted to release in the middle of 2005.
  - — HP-UX Workload Manager A.02.03: In most cases, installing this version (or later) will not result in a reboot. Installing PHKL patches will.
  - — HP-UX Workload Manager Toolkits A.01.07: The `utilitydc` command, part of the Pay Per Use Toolkit, has been modified.

  - — nPartition Provider B.01.03.00.*x*: Now supported on both PA-RISC and Itanium®-based systems. Now supports WBEM 2.0.
  - — Partition Manager 2.0: Supported on both PA-RISC and Itanium®-based systems. Now interacts with nPartition Provider using WBEM 2.0.
- HP Serviceguard A.11.16: Updated with new functionality, defect repairs, and support for future new hardware configurations.
- HP ServiceGuard Manager A.04.00: Allows administrators to create/configure clusters and packages, as well as monitor and manage clusters.
- HP Serviceguard Quorum Server: Supported on both PA-RISC and Itanium®-based systems.
- HP-UX 11i v2 Required Patch Bundle (`BUNDLE11i`): Delivered with this release. Consists of patches for HP-UX 11i v2 that are required to install and update the operating system (OS).
- HP-UX Kernel Configuration tool: TUI changed from earlier version. The `/stand/system/` file enhanced.
- The Peripheral Device Tool (`pdweb`) B11.23.02: TUI introduced.
- Ignite-UX, version B.6.0.*x*: Includes ability to install and recover 11.0, B.11.11, B.11.22, B.11.23 PA-RISC, and B.11.23 Itanium®-based clients from a single Ignite-UX server. Also includes booting of both PA-RISC and Itanium®-based, known as dual boot, from a single media source; and installing one unified PA-RISC/Itanium®-based core HP-UX operating system bundle.
- Improved Database Startup and Shutdown Times: Database startup and shutdown times have been drastically reduced.
- MySQL: Updated with tightened security. Product has been deprecated.
- Obsolescence Product: New product, used in an update when obsolete software on the system needs to be removed.
- OnlineDiag: Includes various bug fixes and enhancements. Support added for new devices.
- Quality Pack Patch Bundle: All patches that were in the March 2004 HP-UX 11i v2 Quality Pack will be superseded by dual-architecture patches, which will be placed in `BUNDLE11i`.
- SAM-NNC: Added support for VLAN, IPoIB, and large send functionality, plus defect fixes.
- Servicecontrol Manager: Contains only minor updates. All functionality remains the same. Product has been deprecated.
- Software Distributor: Updated to a new version to support this new release of HP-UX 11i v2.
- Software Package Builder A.02.00: Updated to incorporate defect fixes, as well as support new features, including the ability to edit multiple PSFs at the same time.
- System Administration Manager (SAM): Updated TUIs in the kernel configuration functional area and the Cards and Devices subarea. Will support shadow mode only for password aging.
- System V Shared Memory: Maximum for the *`shmmni`* tunable parameter increased.

- Update-UX: Updated to incorporate defect fixes.

What is New in September 2004 for Existing Customers of HP-UX 11i v2

September 2004 Release Notes, Chapter 6: "Disk and File Management"

- 16 Terabyte (TB) File System Support: VxFS 3.5 file systems of up to 16 TB now certified.
- Hierarchical File System (HFS): Deprecated. Will be removed in a future release.
- HP CIFS Client A.01.09.02: Provides 64-bit PAM-NTLM libraries support and defect fixes.
- HP CIFS Server 2.2i (A.01.11.01): Provides new LDAP support functionality, as well as other new features and defect fixes.
- Logical Volume Manager (LVM) and MirrorDisk/UX: Performance improved. LVM no longer performs software bad block relocation. Defects fixed.
- Network File System (NFS): New option added to the `umount` command. Compatibility exception noted.
- Network Information Service Plus (NIS+): Deprecated and planned for future obsolescence. Valid modification requests to update NIS+ tables will now fail if the size of the request is larger than 9000 bytes.
- Portable File System (PFS): Obsolete.
- VERITAS File System (VxFS/HP OnlineJFS/JFS) 3.5: File systems of up to 16 TB now certified.
- VERITAS Volume Manager 3.5 for HP-UX (Base): Includes new versions of VEA and SIG Licensing, as well as defect fixes.

What is New in September 2004 for Existing Customers of HP-UX 11i v2

September 2004 Release Notes, Chapter 7: "Internet and Networking"

- HP Data Link Provider Interface (DLPI): Includes support for VLAN functionality, TCP Segmentation Offload (TSO or Large Send), InfiniBand technology, and 64-bit MIB, as well as other changes.
- HP Openview Emanate Agent 15.3: Incorporates a defect fix.
- HP-UX LAN Provider: New with this release of HP-UX 11i v2. Client applications can use this Provider to determine 100bt and Gigabit links available on the system and collect information about them.
- HP-UX Mobile IPv6 A.01.01: Offers the same functionality as A.01.00, but delivery method has changed.
- HP-UX Web Server Suite:
  - HP-UX Apache-based Web Server 2.0.50.01: Updated as a security, bug fix, and feature release which contains support for Microsoft® FrontPage 2002, more pHP extensions, and numerous version upgrades.
  - HP-UX Tomcat-based Servlet Engine 4.1.29.03: Updated with Tomcat version upgraded to 4.1.29; `mod_jk` and related configuration files shipped with HP-UX Apache-based Web Server; and defect fix to the Tomcat Admin application.
  - HP-UX Webmin-based Admin 1.070.00.01: Updated as security, bug fix, and full-feature release that contains the numerous enhancements.

  - HP-UX XML Web Server Tools 2.00: Updated as primarily a version upgrade release, with upgrades to Xerces-J, Xalan-J, Cocoon, and FOP.

- Internet Services:
  - BIND 9.2.0: Option to enable or disable the Extended DNS (EDNS) option provided.
  - BOOTP and DHCP: Both implement a new tag to configure the IP address of the `tftp` server.
  - IPv4 Address Display: The IPv4-mapped-IPv6 address display is now changed to display an IPv4 address.
- LAN Administration Commands: Includes support for IPoIB and VLAN interfaces, along with new command-line options.
- Mozilla Application Suite 1.4.0.01: Contains full Japanese localization as well as other defect fixes and enhancements. Security bulletin posted.
- Netscape Directory Server 6.11: New product for customers of HP-UX 11i v2.
- Network Tracing and Logging (NetTL): Changes include formatting support for IPoIB, Mobile IPv4 extension headers, tunneled IPv6 packets, and Mobile IPv6 packets, as well as new CLI option to support configurable trace buffer timer value.
- Network Transport (ARPA): Changes include Limited Transmit (IPv4 only); support for TCP Segmentation Offload and for IPoIB links; IPv6 router advertisement daemon; Multicast Listener Discovery support for IPv6 (host only); and other changes. Problem and work-around noted: HP-UX sends TCP packets with incorrect window size.

What is New in September 2004 for Existing Customers of HP-UX 11i v2

September 2004 Release Notes, Chapter 8: “Security”

- HP-UX Host Intrusion Detection System 2.3: Product bundle renamed and restructured to improve product installation and maintenance.
- HP-UX IPFilter A.03.05.10.02: Includes defect fixes and performance enhancements.
- HP-UX Secure Shell A.03.71.000: Contains several new features, including enhanced `ssh_prng_cmds` file for random number generation, new escape character for requesting a pseudo terminal, and support for generating KEX-GEX groups in the `ssh-keygen` file.
- OpenSSL A.00.09.07-d: New to HP-UX 11i v2.
- PAM: 64-bit framework now supported on both PA-RISC and Itanium®-based systems. New PAM module introduced. Defect fixes included.
- PAM-Kerberos v1.23: Supports both Itanium®-based and PA-RISC applications in 32-bit mode and 64-bit mode. The `pam_sm_acct_mgmt()` function returns `PAM_USER_UNKNOWN` instead of `PAM_SUCCESS` when the user is not present in the Kerberos database.
- Security Patch Check 2.0: Now provides update and manual action analysis, whereas prior releases only analyzed patches.
- Shadow Passwords: Now supported by SAM.

What is New in September 2004 for Existing Customers of HP-UX 11i v2

September 2004 Release Notes, Chapter 9: "Commands and System Calls"

- The `fuser` Command: Performance improved.
- Post/Wait: New. Provides a fast, lightweight synchronization facility for user applications.
- The `ps` command: The default width now set to 128 characters and a default file provided to define the length of the command field.
- The `rc` Shell Script: When a system needs reboot for some reason, messages in the file `/etc/rc.bootmsg` will be displayed before the system is rebooted.
- The `scsimgr` and `scsiscan` Commands: Deprecated. Planned for obsolescence in HP-UX 11i v3.
- The `settune` and `settune_txn` System Calls: Post HP-UX 11i v2, tunables set using these kernel system calls will not be persistent across reboots.
- The `sfd` Daemon: Deprecated. Planned for obsolescence in HP-UX 11i v3.
- The `sysdef` command: Deprecated. Reports incorrect values for some tunable parameters such as *msgmap*, *sema*, and *shmem*.

What is New in September 2004 for Existing Customers of HP-UX 11i v2

September 2004 Release Notes, Chapter 10: "Libraries and Programming"

- HP aC++ Compiler for Itanium®-Based Systems: No changes except for defect fixes.
- HP aC++ Compiler for PA-RISC Systems: The new `placement delete` feature now supported.
- HP Fortran for HP-UX 2.8.2: Includes performance tuning enhancements.
- HP MLIB 8.6: FFT routines support data sizes of any positive length.
- HP MPI 2.0.1: InfiniBand interconnect on Intel® Itanium® supported.
- HP-UX Buffer Cache Tunable Parameters: All tunables associated to the sizing of the buffer cache (`nbuf`, `bufpages`, `bufcache_max_pct`, `dbc_min_pct`, and `dbc_max_pct`) have been deprecated and will be obsolete in HP-UX 11i v3.
- Java 2 Standard Edition Platform:
  - HP 3D Technology for the Java 2 Standard Edition Platform: Only for Itanium®-based systems. PA-RISC-based systems not supported.
  - HP-UX Software Development Kit and Runtime Environment for the Java 2 Platform Standard Edition: For this release of HP-UX 11i v2, the full SDK as well as the RTE for versions 1.3 and 1.4 are being delivered.
  - Java for HP-UX PA-RISC Add-On C++ Libraries for SDK and RTE: Now included in HP-UX 11i v2 for Java developers on PA-RISC.
  - Java Out-of-Box 2.03: Includes defect fixes.
- Math Library (libm): Current release includes Math Library Cumulative Patch, which contains new functions, performance and accuracy enhancements, and minor defects.
- POSIX Threads: Defect correction applied to Itanium®-based systems to make the thread library, source and relocatable compatible with release HP-UX 11i v1.

- The Software Transition Kit (STK): Available on the Web or Application Release media is a collection of tools and documents designed to help transition HP-UX applications from earlier versions of HP-UX to the latest version of HP-UX on the PA-RISC or the Itanium®-based platform.
- Transition Links: Deprecated. Will become obsolete in post-HP-UX 11i v2 releases.

What is New in September 2004 for Existing Customers of HP-UX 11i v2

September 2004 Release Notes, Chapter 11: "Internationalization"

- Internationalization Features: Includes defect fixes. No new features beyond those supplied in the initial (October 2003) release of HP-UX 11i v2.
- Deprecated Functionality: Several commands, library routines, and `lp` model files deprecated. Will be removed in next major release of HP-UX.

What is New in September 2004 for Existing Customers of HP-UX 11i v2

September 2004 Release Notes, Chapter 12: "Other Functionality"

- ccNUMA: Additional platforms supported.
- Common Desktop Environment (CDE): X11R6-based Xfree86 `xterm` delivered as supported under `/usr/bin/X11`. X11R5-based `xterm` moved.
- Distributed Computing Environment (DCE) Client and Integrated Login: New PA-RISC filesets added. Integrated Login, a new product, added.

What is New in the March 2004 Release?[1]

The following summaries pertain to the March 2004 HP-UX 11i v2 release. For further information, see the indicated chapters in the *HP-UX 11i Version 2 March 2004 Release Notes*, available in its most current version at **http://www.docs.hp.com**. The following is not an exhaustive list, so it strongly recommended that you consult the *HP-UX 11i Version 2 March 2004 Release Notes* for information that is not included here.

March 2004 Release Notes, Chapter 4: "Workstation- and Server-Specific Information"

- Hardware Enablement Program added to support new systems, processors, and I/O adapters. Support for optical devices updated.
- Networking and Mass Storage Drivers:
  - `FibrChanl-00` driver bundle updated to incorporate defect fixes.
  - `FibrChanl-01` driver bundle now supports the A6826A card.
  - `FibrChanl-01` and `GigEther-01` driver bundles now support the A9782A and A9784A cards.
  - `GigEther-01` driver bundle now supports the A7109A card.
  - `IEther-00` driver bundle now supports the A7011A and A7012A cards.
  - `RAID-01` driver bundle now supports the A9890A card.
  - The `scsiU320-00` driver bundle added to pre-enable cards to be released in the future.
- On Demand Solutions:
  - Instant Capacity on Demand (iCOD) updated to version 6.01 to incorporate defect fixes.
  - Pay Per Use (PPU) updated to version 6.04 to incorporate defect fixes.
- Xserver updated to version B.11.23.01 with support for multiple graphics cards.

March 2004 Release Notes, Chapter 5: "General System Administration"

- HP Partitioning:
  - HP Process Resource Manager updated to version C.02.02 with support of a version option, support of SSL encryption of login/password data, more consistent `syslog` messaging, and other changes.
  - HP-UX Workload Manager updated to version A.02.02 with a new GUI that allows local and remote management of WLM systems; automatic resizing of nPartitions (nPars) that use iCOD software; support for more WLM configuration options by the Configuration Wizard; and other changes.

1. This release is supported on Itanium®-based systems. It is not supported on PA-RISC systems.

  - — HP-UX Workload Manager Toolkits updated to version A.01.05. Utilities now use `/opt/perl/bin/perl`; ApacheTK begins supporting Apache 2.*x*; the `cntl_smooth` configuration file keyword now offered; `utilitydc` modified; and other changes.
  - — The nPartition Provider updated to version B.01.02.00.02 to incorporate several minor defect fixes to improve the overall quality of the product.
  - — Partition Manager updated to version B.11.23.02.00.02 to incorporate several minor defect fixes, as well as changes to functionality, including checking of the complex for configuration problems, and validation of SSL certificates sent from the CIM server.
- HP WBEM Services for HP-UX updated to version A.01.05.08 to use OpenSSL 0.9.6k.
- Ignite-UX updated to version B.5.2 with several enhancements, including updating the `make_*_recovery` tools.
- MC/ServiceGuard NFS Toolkit updated to version A.11.23.02 to deliver the File Lock Migration enhancement.
- Online Diagnostics (`OnlineDiag`):
  - — EMS Hardware Monitor added to monitor the operation of the iSCSI Software Initiator. IPMI Event Viewer Web Interface Tool added.
- The Quality Pack Patch Bundle now delivered on the Core OE media as well as the Web.
- Servicecontrol Manager updated to version 3.05 to incorporate defect fixes.
- Software Distributor updated to incorporate defect fixes.
- Software Package Builder updated to version A.01.04 to allow the setting of corequisites and prerequisites attributes using the OR relationship. SPB also now able to detect ambiguous objects.
- Update-UX updated to provide the flexibility to “deselect” bundles through an alternate to the default selections file. Update-UX will also create two backup kernel configurations from the update process.

March 2004 Release Notes, Chapter 6: “Disk and File Management”

- HP CIFS Client updated to version A.01.09.01 to incorporate a defect fix.
- HP CIFS Server 2.2g updated to version A.01.10 to incorporate fixes and minor enhancements developed since Samba version 2.2.5.
- VERITAS File System 3.5 (HP OnlineJFS 3.5) now enables creation of file systems of up to 8 TB.

March 2004 Release Notes, Chapter 7: “Internet and Networking”

- HP-UX Apache-based Web Server updated to version v.1.0.10.03 as primarily a security and bug fix release which addresses vulnerabilities and problems.
- HP-UX Tomcat-based Servlet Engine updated to version 1.0.10.01 to correspond with the HP-UX Apache-based Web Server v.1.0.10.03 with Apache 2.0.48. Upgraded `mod_jk` to v1.2.5.
- LAN Commands:

  - The `lanadmin` command's hard link, `/usr/bin/landiag`, deprecated.
  - The file `/etc/lanscan` deprecated.
  - The file `/etc/linkloop` deprecated.
- Mozilla updated to version 1.4.00.01 with full Japanese localization as well as other defect fixes and enhancements. Netscape is no longer included, but can be downloaded at **`http://www.hp.com/go/netscape`**.

March 2004 Release Notes, Chapter 8: "Security"

- HP-UX Host Intrusion Detection System v2.2 updated to include a defect fix for the detection of logins.

March 2004 Release Notes, Chapter 9: "Commands and System Calls"

- Topics in this chapter are unchanged for March 2004.

March 2004 Release Notes, Chapter 10: "Libraries and Programming"

- GTK+ Libraries updated to version 1.4.gm.46.4 to support changes to the Operating Environments. No new functionality added.
- HP Message Passing Interface (MPI) updated to version 2.0 with full MPI-2 Standard functionality and other enhancements.
- Perl updated to version 5.8.0 build 806 with several bug fixes and other improvements.

March 2004 Release Notes, Chapter 11: "Internationalization"

- ATOK 8 Japanese input method now deprecated.

March 2004 Release Notes, Chapter 12: "Other Functionality"

- HP-UX OpenGL Run Time Environment and Developer's Kit updated to version B.11.23.02.01 to incorporate defect fixes.

What is New in the Initial (October 2003) HP-UX 11i v2 Release?[1]

The following summaries pertain to the initial HP-UX 11i v2 release (October 2003). For further information, see the indicated chapters in the initial *HP-UX 11i Version 2 Release Notes*, available in its most current version at **http://www.docs.hp.com**. The following is not an exhaustive list, so it strongly recommended that you consult the initial *HP-UX 11i Version 2 Release Notes* for information that is not included here.

Initial Release Notes, Chapter 3: "Workstation/Server Specific Information"

- Always-installed Network Drivers:
  - 100Base-T Driver, `btlan`: Updated to support interrupt migration and OLAR on Itanium®-based platforms.
  - 1000Base-T (Gigabit Ethernet): GigEther-01 supported and IEther-00 introduced. 1024~9000 MTU supported.
  - PCI FDDI: Enhanced to provide FDDI network connectivity for Itanium®-based platforms.
- Mass Storage Drivers:
  - Fibre Channel Tachlite Driver: Updated to support interrupt migration and OLAR.
  - SCSI Drivers: Support limited to PCI cards. New cards A5149A and A5838A supported, with limitations. HVD cards A4800A, A5159A, and A5159B not supported. OLAR of A6828A and A6869A cards supported. Interrupt migration supported.
- Selectable Network Drivers:
  - ATM Networking Solution: Now available on Itanium®-based platforms. Only ATM adapter A5513A supported.
  - HyperFabric: `/opt/clic/bin/clic_ping` utility not available in HP-UX 11i v2.
  - INTL100: Required for HP Integrity rx2600 server, as well as HP zx6000 workstation. A6792A add-on card not supported on HP-UX 11i v2.
  - Online Addition and Replacement (OLAR): New `olrad` command provides critical resource analysis routines. New `hotplugd` daemon provides Doorbells capability. The `rad` command deprecated.
  - PCI Mux Networking Solution, TermIO-00: Now available on Itanium®-based platforms.
  - PCI Token Ring Networking Solution: Now available Itanium®-based platforms.
- ATI FireGL X1 and ATI FireGL Z1: Provide compatibility with, and performance increase from, ATI FireGL4 card. Appropriate drivers shipped with the products.

1. This release is supported on Itanium®-based systems. It is not supported on PA-RISC systems.

- Instant Capacity on Demand (iCOD) 6.0: Now always-installed and supported on HP Integrity Superdome, HP Integrity rx7620 and rx8620.
- Pay Per Use 6.0: Available as a selectable product. Supports HP Integrity Superdome, HP Integrity rx7620 and rx8620.
- Technical System Configuration (TechSysConf): TC-OpenSource tools removed. Remaining TC-SysSetup alters kernel configurable parameters, as well as selected system configuration files, for improved system performance.

Initial Release Notes, Chapter 4: "General System Administration"

- Compressed Dump: New feature. Speeds up memory dumps.
- Diagnostics:
  - Offline Diagnostic Environment: Supports new hardware platforms, including HP Integrity Superdome, HP Integrity rx2600, rx4640, rx5670, rx8620, rx7620, zx2000.
  - Online Diagnostics (EMS Hardware Monitors and Support Tools Manager): Modified to support current systems releasing on HP-UX 11i v2. I/O tools and monitors modified to support new cards and peripherals.
- Enterprise Cluster Master Toolkit version B.01.08: Supports the Oracle 9i database in MC/ServiceGuard clusters.
- Event Monitoring Service A.04.00: Framework and GUI available as 32-bit native applications on Itanium®-based platforms. HA Monitors available as 32-bit native binaries on Itanium®-based platforms. New command line utility, EMS CLI, available to configure and manage persistent monitoring requests for EMS monitors.
- File Systems Tunable Parameters: HP-UX File Systems now has 13 dynamic tunable parameters available in HP-UX 11i v2. In addition, the *MAXSYMLINKS* literal traditionally included in the *<sys/param.h>* header is being deprecated in HP-UX 11i v2 and should not be used by applications. *MAXSYMLINKS* was defined as the maximum number of symbolic links that may be expanded in a path name. This limit is now a tunable parameter: *fs_symlinks*.
- GlancePlus Pak C.03.71.23: Incorporates defect repairs and enhancements, including enhancements to OVPA and GlancePlus.
- HP Caliper 3.0: Incorporates enhancements, including full multi-process support, ability to attach to a running process, new report and info modes, and usability improvements.
- HP Partitioning:
  - HP Process Resource Manager version C.02.01.01: Now supports VxVM. Various PRM utilities have wide-column option for better display of group names.
  - HP-UX nPartition Configuration Commands: Management scope of commands extended to remote partitions and complexes. Additional enhancements added.
  - HP-UX Processor Sets: The `psrset` command enhanced to display Locality Domain information. Kernel now supports Real Time Extension (RTE) to processor sets.
  - HP-UX Workload Manager version A.02.01.01: Offers greater functionality and ease of use.

  - — HP-UX Workload Manager Toolkits version A.01.04.01: Now has a toolkit for BEA WebLogic Server.
  - — nPartition Provider: New product with HP-UX 11i v2, used by Partition Manager and partition commands to configure and manage both local and remote HP systems that support nPartitions.
  - — Partition Manager version B.11.23.01.00: Incorporates major enhancements to the user interface, as well as support for Cell Local Memory (CLM).
- HP WBEM Services for HP-UX version A.01.05.05: Supports strong SSL encryption; simultaneous support of both SSL and non-SSL connections; local connections enhanced to use UNIX Domain Sockets; four additional providers added.
- HP-UX Kernel Configuration: The `kcweb` application incorporates changes and new features. The `maxusers` tunable obsoleted. Kernel Configuration (KC) commands replaced by a new set of commands. Changes made in kernel location, boot-time selection, and automatic backup creation.
- HP-UX Peripheral Devices: New tool; replaces the peripheral devices functionality of SAM and introduces two new commands, `pdweb` and `waconf`.
- Ignite-UX version B.5.0: Supports the new HP-UX Service Partition, incorporates enhanced support for dual media recovery, and incorporates enhancements to support new `/stand/system` syntax.
- Interrupt Migration: New feature; can be used to view and modify the interrupt configuration of the system.
- MC/ServiceGuard version A.11.15.00: Updated with new features, including support for VxVM 3.5, Quorum Server 2.0, ServiceGuard Manager 3.0, and IPv6 (with restrictions). Operation with IPFilter requires specific IPFilter rules to ensure proper operation of ServiceGuard clusters.
- MC/ServiceGuard Extension for SAP R/3 version B.03.09: Provides same functionality as B.03.08 for PA-RISC. B.03.09 also provides means to use Secure Shell as a communication method between nodes running mySAP components.
- MC/ServiceGuard NFS Toolkit version A.11.23.01: Enhanced for better performance and easier troubleshooting. NFS-related control functions and variables now in separate NFS-specific control script. Supports VxVM 3.5 and NFS high availability over NFS TCP and NFS UDP.
- MC/ServiceGuard Quorum Server version A.2.0: Runs on both HP-UX and Linux. Supports multiple HP-UX and/or Linux clusters. Can be configured in a package in a cluster.
- MySQL version 3.23: Used instead of NDS by Servicecontrol Manager 3.0 for the repository.
- SAM - Nodal Network Communication: Supports DHCPv6.
- Scalable Boot: Reduces boot time by 5 to 95%, depending on the I/O configuration.
- Servicecontrol Manager version 3.0: Provides new features, including Linux-based central management server, certified HP ProLiant Linux agents, XML file format, and improved user interface and ease-of-use.
- ServiceGuard Extension for RAC version A.11.15.00: Provides new features, including fast detection of Oracle instance crash and rolling upgrade. ServiceGuard Manager will show RAC instances in property sheet.

- ServiceGuard Manager version A.03.00: Provides new features, including availability in five languages, support for clusters on different subnets, ability to display several sessions, and Alerts icon to show the most critical problem.
- Software Distributor: Runs in Intel® Itanium® as a native application. Supports DLKM software packaging.
- Software Package Builder: New product; provides a visual method to create and edit software packages using the HP-UX Software Distributor package format.
- System Administration Manager: Introduces the HP-UX Kernel Configuration and HP-UX Peripheral Devices tools. SAM is available as PA-RISC binaries on HP-UX 11i v2 and requires the Aries translator.
- System-V IPC Kernel Tunable Parameter (`semmap`)(Obsolete): The memory allocation of semaphore sets previously controlled by `semmap` is now done dynamically by the kernel. The `semmap` kernel parameter is no longer tunable.
- System-V IPC Kernel Tunable Parameter (`semmsl`): Minimum value now 1; default value 2048; upper limit remains 10240.
- The `update-ux` Command: New with HP-UX 11i v2. Allows update of the HP-UX operating system from HP-UX 11i v1.6 (11.22) to HP-UX 11i v2 (11.23).

Initial Release Notes, Chapter 5: “Disk and File Management”

- AutoFS: Upgraded to include the features of the SUN ONC AutoFS version 2.3 product, as well as performance enhancements, including on-demand mounting. The system C library, `libc`, changed to improve AutoFS performance.
- Automounter: Obsoleted. AutoFS is the recommended replacement.
- HP CIFS Client version A.01.09: Provides defect fixes and new features, including Kerberos authentication, integration with the system Kerberos cache, and improved interoperability with third-party CIFS servers that do no support older SMB infolevels.
- HP CIFS Server version 2.2e: Based on Samba version 2.2.5. Incorporates new tools and new configuration parameters.
- Logical Volume Manager (LVM): Supports SLVM in configurations of up to 16 nodes. LVM powerfail message changed.
- VERITAS File System (VxFS/HP OnlineJFS/JFS) 3.5: New version contains new and changed features, including new and/or enhanced tunable parameters, enhanced VxFS commands, new I/O error handling policy, new default intent log mode, new default system block size, VxFS system activity reporter, forced unmounts, and more. Enables creation of file systems up to 4 TB (maximum file size is 2 TB).
- VERITAS Volume Manager (VxVM) 3.5: New features include VERITAS Cluster Volume Manager 3.5 for HP-UX (purchased separately); Device Discovery Layer; SIG Licensing Product; and VERITAS Enterprise Administrator. VxVM 3.5 offers significant enhancements over the previous VxVM 3.1, which speed transactions, reduce processing time, and improve bandwidth usage.

Initial Release Notes, Chapter 6: “ Internet and Networking”

- HP OSI Transport Services/9000 version C.12.00: Provides `otsshownsaps` (lists NSAPs configured on OTS/9000) and expedited data transfer on RFC1006 subnet.

- HP-UX Data Link Provider Interface (DLPI): Includes enhancements to the Streams interface; new third-party interface for non-native Streams drivers; updates to the native Stream driver models; obsolescence of the dump read capability of `lanscan`; status logging for DLPI through `nettl`; and other changes.
- HP-UX Web Server Suite: Includes HP-UX Apache-based Web Server, HP-UX Webmin-based Admin, HP-UX Tomcat-based Servlet Engine, and HP-UX XML Web Server Tools. Each component includes fixes and/or enhancements. Installation changes have been made.
- Internet Services:
  - BIND 9.2.0: New options added. New commands added in `rndc` remote name daemon control program. Supports IXFR and all DNS security features.
  - Dynamic Host Configuration Protocol (DHCP) v6: New features include new message types, multiple IP address request, configuration parameters from a DHCPv6 server, and reconfiguration messages.
  - The `gated` Routing Daemon: `ospfagt` available to obtain OSPF routing information from the `gated` product.
  - The `inetd` Daemon: New option added for use by `inetd` to identify a UDP service as broken or in-loop. New variable added to enable or disable `inetd` during system startup.
  - IPv6 Support for Internet Service Products: BIND 9.2, DHCPv6, `inetd`, name and address resolution resolver routines, R-commands, `telnet`, WU-FTPD 2.6.1, and Secure Internet Services are IPv6 enabled.
  - Logging User Accounting Information: `telnetd`, `remshd`, `rexecd`, and `ftpd` now use new scalable `utmps`/`wtmps`/`btmps` interfaces to log user accounting information.
  - The `named-xfer` Ancillary Program: Obsolete; replaced by the `dig` utility.
  - The `rbootd` remote boot server for RMP clients: Obsolete; clients using the RMP protocol no longer supported. You must move from RMP to BOOTP.
  - The `rexecd` utility: New option added. Now uses `utmps`/`wtmps`/`btmps` interfaces to log user accounting information.
  - The `rwhod` sever: Updated to use `utmps` interfaces to read user accounting information.
  - Secure Internet Services: New options added. IPv6 enabled for R-commands. Kerberos supported in an IPv6 environment for `ftp`, R-commands, and `telnet`.
  - Sendmail 8.11.1: New options added.
  - SLP 0.8: New with HP-UX 11i v2. Includes dynamic service tracking, ease of administration, and ease of development.
  - TCP Wrappers 7.6: Includes features such as monitoring incoming requests for Internet Services, controlling access to services spawned by `inetd`, and enforcing access control in stand-alone daemon programs, among others.
  - WU-FTPD 2.6.1: The `ftp` daemon audits all login activities irrespective of success/failure login. Logs bad login attempts in `/var/adm/btmps` file. New options added.

- IPv6 Support: IPv6 support by Transport, Internet Services, DCE, DLPI, FDDI, SAM-NNC, libc, HP-UX commands, Desktop (CDE), X11R6-based applications, C2 Audit, EMS, Online Diagnostics, SNMP, NetTL, IPSec, Kerberos Client, ServiceGuard, GlancePlus Pak, HP-UX Secure Shell, HP-UX Web Server Suite, and the Runtime Environment (RTE) for the Java. 2 platform.
- IPv6 Network Transport Software: Features include IPv4/IPv6 dual stock support; enablement of IPv4/IPv6 host and router connections over existing IPv4 network; Ethernet and FDDI links; IPv6 stateless address auto configuration; IPv6 Neighbor Discovery; network configuration and troubleshooting utilities; name service switch, and more.
- IPv6 Support by Common Desktop Environment (CDE): CDE 2.1 supports IPv6, in addition to IPv4.
- IPv6 Support by HP Openview Emanate Agent: Relevant MIB support with the IPv6 subagent, `ipv6agt`. RFCs supported as part of the IPv6 stack.
- IPv6 Support by HP-UX libc and HP-UX Commands: While providing support for IPv6, new solution addresses previous performance and feature scalability problems. New daemon and library introduced to manage user accounting. Various commands modified and options added to support IPv6. Solution speeds response time for users to log in to large server systems which support a large number of users/login sessions.
- Kernel Logging: Deprecated. Will not be supported post-HP-UX 11i v2.
- LAN Commands
  - Local Area Network Administration Program (`lanadmin`): New options added. Now supports third-party LAN drivers.
  - The `linkloop` Command: Now works correctly with Ethernet interfaces set for an MTU size other than 1500. Now supports third-party LAN drivers.
  - The `lanscan` Command: New option added. Can no longer be used to read from crash dumps.
- Network Information Service Plus (NIS+): Deprecated. HP-UX 11i v2 is the last release to support NIS+. HP will introduce a migration strategy to facilitate move from NIS+ to LDAP.
- Network Tracing and Logging (NetTL): Supports tracing and formatting of IPv6 packets. Improved performance. GUI `nettladm` added. Options added.
- Network Transport (ARPA): Support for enhancements of HP-UX DLPI. Enhancements to CKO interfaces between HP-UX transport and DLPI. Removed support for dump reading by `netstat` and `arp`. IPv6 transport supported.
- Networking `libc` APIs `getaddrinfo()` and `getnameinfo()`: Both functions have additional lookup.
- Networking `libc` APIs `getipnodebyname()` and `getipnodebyaddr()`: Deprecated. Both functions not supported post-HP-UX 11i v2. In applications, the APIs `getaddrinfo()` and `getnameinfo()` functions should be used instead.
- The `nslookup` Program: Extended to follow the configured host name resolution algorithm and to query NIS, DNS, and host tables.
- Router Discovery Protocol Daemon (`rdpd`): Obsolete. Functionality has been subsumed in `gated`.

- Web Browsing:
  - Mozilla Application Suite 1.2.1: Added as default browser for HP-UX 11i v2.
  - Netscape 7: Replaces Netscape Communicator 4.79.

Initial Release Notes, Chapter 7: “Security”

- Boot Authentication: Now available on all Standard Systems. Standard Mode Boot Authentication feature can be configured by two parameters.
- Generic Security Service Application Programming Interface (GSS-API): Now delivered as part of HP-UX 11i v2. IPv6 enabled.
- HP-UX Auditing System: Several system call options and event type options are accepted, but will be obsoleted in the next release.
- HP-UX Bastille 2.1: Now included in HP-UX 11i v2. New version adds finer granularity of configuration, improved question flow, better input validation, and new lockdown features.
- HP-UX Host Intrusion Detection System (HIDS) 2.2: Maintenance release with defect fixes and a few enhancements. No new functionality in this version.
- HP-UX IPFilter A.03.05.06: Supports HP-UX 11i v2 on Itanium®-based platforms. Automatically installed with all OEs. Using IPFilter and ServiceGuard requires specific IPFilter rules to ensure proper operation of ServiceGuard clusters.
- HP-UX Secure Shell A.03.10: New product. Based on OpenSSH 3.1p1, provides a secure channel for remote communication by transparently encrypting network traffic. Uses hashing to ensure data integrity and supports several authentication methods.
- Install-Time Security 1.*x.x*: Adds a security step to the install/update process that allows you to configure the Bastille security lockdown engine during system installation.
- Kerberos Client (KRB5-Client): Now delivered as part of HP-US 11i v2. Changes include support for appdefaults section in the `/etc/krb5.conf`; multidomain support; IPv6 support.
- PAM Kerberos: Supports both Itanium®-based and PA-RISC applications in 32-bit mode. Now prevents a user from changing another user’s password.
- Security Patch Check 1.3: Now included in HP-UX 11i v2 OEs. Simplifies the process of determining whether you have all the relevant security patches on your system. This version does better corner-case handling; incorporates a number of defect fixes and clearer wording.
- Shadow Passwords: New feature enhances system security by hiding user-encrypted passwords in a shadow password file.
- Strong Random Number Generator: New feature provides a secure, non-reproducible source of binary sequences for applications that generate encryption keys and other cryptographic quantities.

Initial Release Notes, Chapter 8: “Commands and System Calls”

- The envd Environment Daemon: Now supported.

- The groupadd, groupdel, groupmod, useradd, userdel, usermod commands: In trusted mode, the commands now write audit records into the audit subsystem's audit trail. New option added to set or unset useradd behavior of changing ownership of an existing home directory.
- The psrset Command: Enhanced with new options to manage the RTE processor set.
- The setboot Command: Support for setting the HA Alternate boot path now added. SpeedyBoot option for next reboot now available.
- I/O Commands:
  - The insf, lssf, and mksf Commands: Now support IHV drivers, provided the IHV provides a shared library.
  - The ioscan command: New options added to allow display of the date and time at which the system hardware was last scanned and to allow display of the EFI device paths for certain devices.
- The mmap() Function: Now possible to perform mappings between a process's address space and I/O device registers or memory.
- The pstat_getfile() Interface: Obsolete. The interface pstat_getfile2() should be used in its place.
- Transition Links Commands: Deprecated. The tlinstall, tllist, and tlremove commands will become obsolete in post-HP-UX 11i v2 releases.
- Usage of Capacity-related ioctls DIOC_CAPACITY, DIOC_DESCRIBE, and SIOC_CAPACITY: Applications that use the DIOC_CAPACITY or DIOC_DESCRIBE ioctl calls should be rebuilt because capacity_type and disk_describe_type now better represent the size of newer, larger devices. Applications that use the SIOC_CAPACITY ioctl for devices that may become large at some point should now use the new SIOC_STORAGE_CAPACITY ioctl.
- Usage of ustat(), statfs(), and statvfs(): When old binaries that still use ustat(), the various forms of statfs(), and the various forms of the 32-bit flavor of statvfs(), are exposed to a truly large file system, these calls will return an EOVERFLOW error that the binaries have never seen before, resulting in misinterpretations.

Initial Release Notes, Chapter 9: "Libraries and Programming"

- 400K File Descriptors: The maximum supported number of file descriptors per process raised from 60000 (60K) to 400,000 (400K). Precautions apply to this new functionality.
- Adaptive Address Space (AAS) 1.0: Allows you to create binaries that provide you with a large address space and more control over it.
- Aries Binary Translator: Changes include support for MxN threads, support for Itanium®-based 2 processor, and an optional, experimental implementation of a new dynamic translator with improved performance.
- C99 Support for HP-UX System C Library (libc): A set of 8 new APIs introduced, making it easier to convert strings to the "long long" data type.
- Debugging:

  - — Absolute Debugger (Adb): New features include support for Lazyfp, Dual pdir, debugging MxN threads in a process/core, debugging INIT and MCA crash dumps, and debugging a shared library for an attached process.
  - — HP Kernel Debugger (KWDB): Included in HP-UX 11i v2, but not supported.
  - — HP Wildebeest Debugger (WDB) 4.0: Features include performance improvements and support for Runtime Memory Checking, for enabling/disabling threads for better DDE compatibility, for unwinding through corrupted PC, for stack traces in Java/C/C++ programs, and enhanced support for C++ templates. New command: `dumpcore`. Info threads command output has changed.

- Dynamic Loader (`dld.so`) B.12.20: Changes include support for applications built with `+[no]lazyload` and `-B [direct|lazydirect|nodirect]`, lazy loading of shared library, and direct binding.
- File Descriptor Allocation: The behavior of the file descriptor allocation changed to prevent security problems such as unauthorized modification of root-owned files.
- GTK+ Libraries 1.2.10.2: Added; required for Netscape 7 and Mozilla. Consists of the component libraries GLib, GDK, and GTK.
- HP aC++ Compiler: The functionality of Tools.h++ now available with the Standard C++ runtime (`-AA`). Transition Links product deprecated.
- HP C Compiler: The `legacy_hpc/` subdirectory no longer provided. C-Analysis-Tools product obsoleted. The tools `cb`, `cflow`, `cxref`, `endif`, `lint`, `protogen` no longer shipped. Transition Links product deprecated.
- HP Fortran v2.7: A new feature is binary I/O conversion. New or revised directives/options include *`optimize openmp`* [*`on|off`*], *`+Oautopar`* (revised), *`+Ofast`* (changed implied options), *`+DOosname`*, *`+O`*[*`no`*]*`rotating_fpregs`*, *`+O`*[*`no`*]*`preserved_fpregs`*, and *`+O`*[*`no`*]*`no_return`*.
- HP Math Library (`libm`): Changes to `libm`, `math.h`, `complex.h`, `tgmath.h`, `fenv.h`, `cmath`, and `complex` components, including new and changed functions. Major performance upgrade for power functions: `pow[fwlq]`, `pown[fwlq]`, and `powlln[fwlq]`. Switch introduced into `math.h` to support a strict C99 namespace.
- HP Message Passing Interface (MPI) 1.8.3: New features include additional launch utility `mpirun.all`, HyperFabric/HyperMessaging Protocol (HMP) functionality, `stdio` not processed by default, argument error checking turned off by default.
- HP MLIB 8.4: Major enhancement is performance tuning. Incorporates algorithmic improvements. Several tunable parameters adjusted for improved execution performance.
- Itanium®-based Unwind Library (`libunwind.so`): Changes include a new set of “Unwind Express” APIs that perform stack unwinding considerably faster, and new header files <`uwx.h`> and <`uwx_self.h`>.
- Java 2 Standard Edition Platform:
  - — HP 3D Technology for the Java 2 Standard Edition Platform 1.3: Two new, identical Java 3D products now install: one into Java RTE 1.3 and the other into Java RTE 1.4.

  - — Runtime Environment (RTE) for the Java 2 Platform 1.4: New features include nonblocking I/O APIs, IPv6 support, new garbage collectors (parallel, and concurrent mark and sweep), Java Web Start application deployment technology now bundled with the RTE. RTE for Java 1.3 still included as well.
  - — Runtime Plug-in (JPI) for Netscape/Mozilla for the Java 2 Platform 1.4: Now added, providing the latest Java technology. JPI 1.3 still included as well.
- Link Editor (`ld`): New functionality includes lazy loading of shared libraries (`+[`*no*`] lazyload`) and direct binding support.
- Micro Focus OO COBOL 4.2 Run-Time Libraries: Deprecated. Will not be included in future HP-UX 11i releases for Itanium®-based platforms.
- Object File Tools (`elfdump`): Option introduced to print out the version string of the symbol when printing the symbol table.
- Perl: Corresponds to Perl 5.8.0 source code release. Changes include better Unicode support, new IO implementation, new thread implementation, better numeric accuracy, safe signals, and many new modules.
- Source Code Transition from HP-UX 11i v1.6 to HP-UX 11i v2: Software Transition Kit 1.9 updated to support source code transition from HP-UX 11i v1.6 to v2.
- Thread Context: Changes include: Protection Key Registers saved/restored on context switch; lazy FP implementation; new scratch registers supported; save_state, pcb, and label structures changed.

Initial Release Notes, Chapter 10: “Internationalization”

- Simplified Chinese Input Methods: Intelligent ABC now available to support characters defined by the GB18030 standard. T-C and T-C Rapid input methods obsoleted and removed.
- Mainframe `iconv` Converters for Japanese Characters: Changes include numerous fixes for mapping errors for JIS standard characters, as well as a fix to handle an incomplete shift sequence at the end of an input buffer.
- Printing Using Asian TrueType Fonts for HP PCL5 Printers: Larger set of Asian characters available for printing using Asian UTF-8 locales.
- System Support for Latin and South American Locales: Total of 51 new locales provided to enable system-level support for Latin/South American geographies. Includes support for the input, storage, retrieval, display, and printing of characters encoded in ISO-88591, ISO-885915, or UTF-8 character sets.
- Unicode 3.0 Support: Now included.
- Deprecated Functionality: Several commands, library routines, and lp model files deprecated. Will be removed in next major release of HP-UX.

Initial Release Notes, Chapter 11: “Other Functionality”

- ccNUMA: Changes include: greater performance for some work loads; ability to configure systems for optimal performance with regard to interleaved versus cell local memory; ability to give guidance to OS for most appropriate memory allocation according to an application’s usage model; ability to control how processes are distributed among localities.

- Common Desktop Environment (CDE): Changes include: IPv6 support; greater accessibility for physically challenged users; `dtlogin` does not start X server when the mouse is not connected; large file (greater than 2GB) support provided by `dtfile`; and other changes. In addition, CDE requires a number of services and resources; if these are disabled either manually or with Bastille, there are several impacts on CDE.

4 Workstation- and Server-Specific Information

What is in This Chapter?

This chapter describes server- and workstation-specific platforms and configurations, including the following:

Hardware Enablement Patch Bundle

The Hardware Enablement Patch Bundle (`HWEnable11i`) provides the patches required for new systems and for add-on hardware supported on HP-UX 11i v2, including I/O adapters and devices.

In addition to delivery on the HP-UX 11i v2 OE media, the `HWEnable11i` bundle is also available on the IT Resource Center (ITRC) Web site at **`http://itrc.hp.com`**.

For help in finding firmware requirements, see “Finding Firmware Information” on page 90.

Summary of Change

The `HWEnable11i` bundle includes the following updates:

- Qualified diagnostics with new DAT and LTO tape drives.
- Updated diagnostics for following new I/O cards:
  - AB287A: PCI-X 10 Gigabit Ethernet card
  - AB290A: PCI-X 2-Port U320 SCSI / 2-Port 1000Base-T Adapter
  - AB465A: PCI-X Multifunction 2-Port 2Gb FC / 2-Port 1000Base-T Adapter
  - AB545A: PCI-X 4-Port 1000Base-T Adapter

Also note that the following I/O driver bundles have been updated:

- `10GigEthr-00` (`ixgbe` driver) B.11.23.04: Added support for AB287A. (See “10GigEthr-00 (10 Gigabit Ethernet)” on page 81.)
- `GigEther-01` (`igelan` driver) B.11.23.0505: Improved support for AB465A. (See “GigEther-00, GigEther-01, and IEther-00 (Gigabit Ethernet)” on page 78.)
- `IEther-00` (`iether` driver) B.11. 23.0505: Added support for AB290A, AB545A. (See “GigEther-00, GigEther-01, and IEther-00 (Gigabit Ethernet)” on page 78.)
- `scsiU320-00` (`mpt` driver) B.11.23.02: Improved support for AB290A. (See “scsiU320-00” on page 85.)
- `USB-00` (`usb` drivers) C.01.00.38: Improved USB drivers for Itanium®-based servers. (See “USB-00 (Universal Serial Bus)” on page 86.)

Impact

With each release of the HP-UX 11i v2 Operating Environment (OE) media, HP updates this bundle with required patches for new hardware.

Compatibility

If you choose to load only the May 2005 version of this patch bundle, without doing a complete update to the May 2005 version of HP-UX 11i v2, you must first load the September 2004 version of HP-UX 11i v2.

Performance

There are no known performance issues.

Documentation

For information about the `HWEnable11i` bundle, refer to the Hardware Enablement Bundle `README` file.

For further information, refer to the following Web sites:

- **`http://itrc.hp.com`**
- **`http://software.hp.com`**

Also refer to the latest editions of the following documents, available at **`http://docs.hp.com`**:

- *HP-UX 11i v2 Installation and Update Guide*
- *Read Before Installing or Updating to HP-UX 11i v2*

Obsolescence

Not applicable.

HP Instant Support Enterprise Edition

HP Instant Support Enterprise Edition (ISEE) is a secure remote support platform for business servers and storage devices. The HP ISEE client software is installed on each supported device covered by an HP Support Agreement. ISEE Monitored Clients communicate directly with the HP Support Center through the firewall and/or Web proxy server to deliver hardware incident information to the HP support center for reactive support. Additionally, system information is collected and can be used for proactive support.

Summary of Change

This new version of ISEE Client has defect fixes and few feature enhancements. For details, refer to the Hardware Support Services - ISEE Training and Documentation Web site at **`http://www.hp.com/learn/isee`**.

Impact

There are no impacts.

Compatibility

Before enabling or configuring ISEE, verify that you have collected the necessary information and met all of the requirements outlined in Chapter One and Appendix A of the *HP Instant Support Enterprise Edition Client Installation and Upgrade Guide*, available at **`http://www.hp.com/learn/isee`**. Please note that HP ISEE is only supported on servers, not HP-UX workstations.

Enabling ISEE

ISEE is installed in a disabled state. To enable the client complete the following steps:

1. In the file `/etc/rc.config.d/hpservices.conf` change the value of *`START_TUNER`* from 0 to 1.
2. In the file `/etc/rc.config.d/rstemsListener` change the value of *`RST_LISTENER`* from 0 to 1.
3. Execute `/sbin/init.d/hpservices start`.
4. Execute `/sbin/init.d/rstemsListener start`.

Configuring ISEE

The ISEE configuration process is documented in the section titled “Configuring ISEE after an Individual Installation” in the *HP Instant Support Enterprise Edition Client Installation and Upgrade Guide*. Additional information about ISEE and HP-UX servers can be found in Appendix A.

Performance

There are no known performance issues.

Documentation

Information about ISEE, including the *HP Instant Support Enterprise Edition Client Installation and Upgrade Guide*, is available at **`http://www.hp.com/learn/isee`**. For a complete list of ISEE-supported operating systems and hardware devices, please view the ISEE supported products Web page at **`http://www.hp.com/hps/hardware/hw_products.html`**.

Obsolescence

Not applicable.

Networking and Mass Storage Drivers

HP-UX 11i v2 includes drivers for networking and mass storage adapter cards. The drivers are described in the following sections:

Always-Installed Networking Drivers

The following table lists networking drivers that are automatically installed. For more details about changes to these drivers, see the remainder of this section.

Table 4-1 Always-Installed Networking Drivers[a]

Bundle	Driver	Card Number	Description
FDDI-00	fddi4	A3739B	PCI FDDI card
FibrChanl-01 and GigEther-01	fcd and igelan	A9782A	PCI-X 2Gb Fibre Channel/1000Base-SX (Fibre) Combination Card
FibrChanl-01 and GigEther-01	fcd and igelan	A9784A	PCI-X 2Gb Fibre Channel/1000Base-T (Copper) Combination Card
FibrChanl-01 and GigEther-01	fcd and igelan	AB465A	PCI-X Multifunction 2-Port 2Gb FC / 2-Port 1000Base-T Adapter
GigEther-00	gelan	A4926A	PCI 1000Base-SX (gigabit over fiber) card
GigEther-00	gelan	A4929A	PCI 1000Base-T (gigabit over copper) card
GigEther-00	gelan and c8xx	A6096A	PCI 1000Base-T/SCSI card
GigEther-01	igelan	A6794A	PCI 1000Base-T/SCSI card
GigEther-01	igelan	A6825A	PCI 1000/Base-T (gigabit over copper) card
GigEther-01	igelan	A6847A	PCI 1000/Base-SX (gigabit over fiber) card
GigEther-01	igelan	A7109A	PCI Gigabit Ethernet BaseT/Ultra 160 combo card
GigEther-01	igelan	A9782A	PCI-X 2Gb Fibre Channel/1000Base-SX (Fiber) Combination Card

Table 4-1 Always-Installed Networking Drivers[a] (Continued)

Bundle	Driver	Card Number	Description
GigEther-01	igelan	A9784A	PCI-X 2Gb Fibre Channel/1000Base-T (Copper) Combination Card
HPUXBaseOS	btlan	A5230A	PCI 10/100Base-TX card for servers
HPUXBaseOS	btlan	A5506B	PCI 4-port 10/100Base-TX card
HPUXBaseOS	btlan	A5838A	PCI Combination Dual port 10/100Base-TX and Wide Ultra2 SCSI card
IEther-00	iether	A7011A	PCI-X 2-Port 1000Base-SX (Fibre) card
IEther-00	iether	A7012A	PCI-X 2-Port 1000Base-T (Copper) card
IEther-00 and scsiU320-00	iether and mpt	AB290A	PCI-X 2-Port U320 SCSI / 2-Port 1000Base-T Adapter
IEther-00	iether	AB545A	PCI-X 4-Port 1000Base-T Adapter

a. In addition to currently supported cards, the swlist report may contain the product numbers of cards that have been "pre-enabled," but have not been released yet. Cards released after the publication of this document may be supported but not shown in this table.

GigEther-00, GigEther-01, and IEther-00 (Gigabit Ethernet)

For Gigabit Ethernet, HP-UX 11i v2 supplies the GigEther-00, GigEther-01, and IEther-00 driver bundles, which supply the gelan, igelan, and iether drivers, respectively.

Summary of Change

The May 2005 release of HP-UX 11i v2 include the following changes:

- The igelan and iether drivers are now at version B.11.23.0505. The gelan driver remains at version B.11.23.05.
- Introductory HP-UX release of the following new networking cards:
  - AB290A PCI-X 2-Port U320 SCSI / 2-Port 1000Base-T Adapter (supported by the iether and mpt drivers)[1]
  - AB465A PCI-X Multifunction 2-Port 2Gb FC / 2-Port 1000Base-T Adapter (supported by the igelan and fcd drivers)[2]
  - AB545A PCI-X 4-Port 1000Base-T Adapter (supported by the iether driver)

1. See also "scsiU320-00" on page 85.
2. See also "FibrChanl-01 (Fibre Channel)" on page 83.

- Checksum Offload (CKO) changes for the `iether` and `igelan` Gigabit Ethernet drivers:

  These Gigabit Ethernet drivers now allow customers to turn the CKO feature of the Gigabit Ethernet interface ON or OFF. With this and subsequent versions of the `iether` and `igelan` drivers, the default for receive-side CKO will be OFF (disabled). The current CKO settings can be determined with the following command:

  `lanadmin -x cko <ppa>`

  If desired, the previous settings can be restored with the new driver by using the `lanadmin -X` command. The exact `lanadmin` commands are as follows (note that the `X` is capitalized in these commands):

  `lanadmin -X send_cko_on <ppa>`

  `lanadmin -X recv_cko_on <ppa>`

  Example settings for the `iether` driver:

  The settings are preserved across reboots by setting both *`HP_IETHER_SEND_CKO`* and *`HP_IETHER_RECV_CKO`* to ON or OFF in the `/etc/rc.config.d/hpietherconf` file.

- Support of 1000FD mode of switches:

  HP-UX 1000Base-T ports will support a link partner (switch or end-station) that is operating in 1000FD fixed/manual mode. Please ensure that your setting is one of the following supported configurations:

Table 4-2 HP-UX 1000Base-T Supported Configurations

HP-UX 1000Base-T Port	Link Partner	Resulting Speed
AUTO	AUTO	Highest Common Speed (HP-UX supports 10/100/1000)
AUTO	1000 FD fixed/manual	1000 Mbit/s FD
10 HD	10 HD (for example, a 10Base-T Hub)	10 Mbit/s HD
10 FD	10 FD	10 Mbit/s FD
100 HD	100 HD	100 Mbit/s HD
100 FD	100 FD	100 Mbit/s FD

Impact

With the Gigabit Ethernet drivers updated for this release, CKO settings can be set to what they used to be prior to this release by using the `lanadmin -X` command. The exact `lanadmin` commands are as follows (note that the X is capitalized in these commands):

`lanadmin -X send_cko_on <ppa>`

`lanadmin -X recv_cko_on <ppa>`

Example settings for the `iether` driver:

The settings are preserved across reboots by setting both *HP_IETHER_SEND_CKO* and *HP_IETHER_RECV_CKO* to ON or OFF in the `/etc/rc.config.d/hpietherconf` file.

Compatibility

There are no known compatibility issues.

Performance

There are no known performance issues.

Documentation

Installation guides for the AB545A, AB290A, and AB465A are at **`http://docs.hp.com`** under "Networking and Communications."

Details of the new options to support the CKO change can be obtained with the following command:

`lanadmin -x help <`*ppa*`>`

Obsolescence

Not applicable.

Selectable Networking Drivers

The following table lists drivers that are not automatically installed, but can be selected during installation. For more details about changes to these drivers, see the remainder of this section.

Table 4-3 Selectable Networking Drivers[a]

Bundle	Driver	Card Number	Description
`10GigEthr-00`	`ixgbe`	AB287A	PCI-X 10 Gigabit Ethernet card
`ATM-00`	`atm2pci`	A5483A[b] A5513A A5515A[b]	PCI ATM cards
`HyprFabrc-00`	`clic`	A6386A	HyperFabric2 PCI 4X Fiber adapter
`TermIO-00`	`pci_mux0`	A6748A A6749A	PCI MUX (8-port) PCI MUX (64-port)
`TokenRing-00`	`pcitr`	A5783A	PCI Token Ring card

a. In addition to currently supported cards, the `swlist` report may contain the product numbers of cards that have been "pre-enabled," but have not been released yet. Cards released after the publication of this document may be supported but not shown in this table.
b. A5483A and A5515A supported only on HP 9000 Superdome, 64-bit A-Class, L-Class, and N-Class servers.

10GigEthr-00 (10 Gigabit Ethernet)

The `10GigEthr-00` bundle supplies the `ixgbe` driver, version B.11.23.03, which supports the AB287A PCI-X 10 Gigabit Ethernet card.

The 10 Gigabit Ethernet (`ixgbe`) driver is delivered as a selectable product in the May 2005 update of HP-UX 11i v2. In addition, you can obtain an HP-UX 11i v2-based copy of the driver at **`http://software.hp.com`** under "Internet ready and networking."

Summary of Change

The `10GigEthr-00` bundle is new with the May 2005 release of HP-UX 11i v2.

Impact

The `10GigEthr-00` bundle adds support for the AB287A PCI-X 10 Gigabit Ethernet card.

Compatibility

There are no known compatibility issues.

Performance

There are no known performance issues.

Documentation

The *AB287A PCI-X 10 Gigabit Ethernet Card Installation Guide* is available online at **`http://docs.hp.com/en/netcom.html#10%20Gigabit%20Ethernet`**.

For more information about the AB287A PCI-X 10 Gigabit Ethernet card (such as a current list of supported systems and switches that work well with this product), please go to the following Web site:

`http://www.hp.com/products1/unixserverconnectivity`

Obsolescence

Not applicable.

Always-Installed Mass Storage Drivers

The following table lists mass storage drivers that are automatically installed. For more details about changes to these drivers, see the remainder of this section.

Table 4-4 Always-Installed Mass Storage Drivers[a]

Bundle	Driver	Card Number	Description
HPUXBaseOS	c8xx	A5838A	PCI Dual Port 100Base-TX and Dual Port Wide Ultra2 SCSI
HPUXBaseOS	c8xx	A5149A	PCI Ultra2 SCSI Host Bus Adapter
HPUXBaseOS	c8xx	A5150A	PCI Dual Port Ultra2 SCSI Host Bus Adapter
HPUXBaseOS	c8xx	A6828A	PCI Ultra160 SCSI Host Bus Adapter
HPUXBaseOS	c8xx	A6829A	PCI Dual Channel Ultra160 SCSI Host
FibrChanl-00	td	A5158A	PCI Tachyon TL/TS Fibre Channel card
FibrChanl-00	td	A6795A	PCI Tachyon XL2 Fibre Channel card
FibrChanl-01	fcd	A6826A	PCI-X Dual Port 2 Gb/1 Gb Fibre Channel Adapter
FibrChanl-01 and GigEther-01	fcd and igelan	A9782A	PCI-X 2Gb Fibre Channel/1000Base-SX (Fiber) Combination Card
FibrChanl-01 and GigEther-01	fcd and igelan	A9784A	PCI-X 2Gb Fibre Channel/1000Base-T (Copper) Combination Card
FibrChanl-01 and GigEther-01	fcd and igelan	AB465A	PCI-X Multifunction 2-Port 2Gb FC / 2-Port 1000Base-T Adapter
GigEther-00	gelan and c8xx	A6096A	PCI 1000Base-T/SCSI card
RAID-01	ciss	A7143A	PCI 4-Channel RAID160 SA SCSI Controller
RAID-01	ciss	A9890A	Smart Array 6402 Controller
RAID-01	ciss	A9891A	Smart Array 6404 Controller
scsiU320-00	mpt	A7173A	PCI-X Dual Channel Ultra320 SCSI Host Bus Adapter
scsiU320-00 and IEther-00	mpt and iether	AB290A	PCI-X 2-Port U320 SCSI / 2-Port 1000Base-T Adapter

Table 4-4 Always-Installed Mass Storage Drivers[a] (Continued)

Bundle	Driver	Card Number	Description
USB-00	UsbOhci (USB 1.1 driver) UsbEhci (USB 2.0 driver stub) MouseMUX and UsbBootMouse (USB mouse drivers) KeyboardMUX and UsbBootKeyboard (USB keyboard drivers) UsbHub (USB hub driver) UsbBulkOnlyMS (Mass Storage driver for USB DVD)	N/A	Universal Serial Bus driver for future Itanium®-based blade servers

a. In addition to currently supported cards, the swlist report may contain the product numbers of cards that have been "pre-enabled," but have not been released yet. Cards released after the publication of this document may be supported but not shown in this table.

FibrChanl-01 (Fibre Channel)

The FibrChanl-01 bundle delivers FC-FCD (fcd driver) versions B.11.11.05 and B.11.23.03 for the following hardware:

- A6826A PCI-X Dual Port 2 Gb/1 Gb Fibre Channel Adapter
- A9782A PCI-X 2Gb Fibre Channel/1000Base-SX (Fiber) Combination Card
- A9784A PCI-X 2Gb Fibre Channel/1000Base-T (Copper) Combination Card
- AB465A PCI-X Multifunction 2-Port 2Gb FC / 2-Port 1000Base-T Adapter

Summary of Change

The Fibre Channel fcd driver, along with the igelan driver,[1] now also supports the AB465A PCI-X Multifunction 2-Port 2Gb FC / 2-Port 1000Base-T Adapter.

Impact

You will now be able to use the AB465A card.

Compatibility

There are no known compatibility issues.

1. See "GigEther-00, GigEther-01, and IEther-00 (Gigabit Ethernet)" on page 78.

Performance

There are no known performance issues.

Documentation

For more information, refer to the following documents, available on **http://docs.hp.com**:

- *HP Fibre Channel Mass Storage Adapters Support Guide*
- *FibrChanl-01 (fcd) Fibre Channel Mass Storage Driver for HP-UX 11i v1 Release Notes version B.11.11.05*
- *FibrChanl-01 (fcd) Fibre Channel Mass Storage Driver for HP-UX 11i v2 Release Notes version B.11.23.03*
- *HP Fibre Channel Fabric Migration Guide*
- *Fibre Channel SNIA HBA API Programmer's Guide*
- "A6826A - PCI-X Dual Port 2Gb/s Fibre Channel Adapter Performance Paper for PCI Platforms"

Also refer to the *fcmsutil* (1M) manpage.

Obsolescence

Not applicable.

RAID-01

The `RAID-01` bundle delivers the driver `ciss`, for the A7143A, A9890A, and A9891A cards.

Summary of Change

`RAID-01` has been updated to incorporate defect fixes.

Impact

There are no impacts.

Compatibility

There are no known compatibility issues.

Performance

There are no known performance issues.

Documentation

Documentation is available at **http://docs.hp.com** in the "Networking and Communications" section.

Obsolescence

Not applicable.

scsiU320-00

The HP-UX Ultra320 SCSI driver bundle, `scsiU320-00`, supplies the `mpt` driver, which supports the Ultra320 SCSI controllers for core I/O and add-in cards, including the following:

- A7173A PCI-X Dual Channel Ultra320 SCSI Host Bus Adapter (supported by the `mpt` driver)
- AB290A PCI-X 2-Port U320 SCSI / 2-Port 1000Base-T Adapter (supported by the `mpt` and `iether` drivers)[1]

Summary of Change

The `scsiU320-00` bundle has been updated with quality and diagnostic improvements for Ultra320 SCSI solutions, including core and add-in HP adapters such as the A7173A and AB290A.

Impact

You will be able to run supported Ultra320 SCSI solutions (core IO and add-in cards) and utilize supported Ultra320-capable storage.

Compatibility

Information about compatibility is detailed in the A7173A and AB290A documentation, as well as pertinent supported server and storage documents.

Performance

There are no known performance issues.

Documentation

Further information can be found in the `mptconfig` and `mptutil` manpages.

In addition, the following documentation is available on **`http://docs.hp.com`** in the SCSI section under the “Networking and Communication” topic heading:

- *HP A7173A PCI-X Dual Channel Ultra320 SCSI Host Bus Adapter Support Guide*
- *HP A7173A PCI-X Dual Channel Ultra320 SCSI Host Bus Adapter Installation Guide*
- *HP Ultra320 SCSI HP-UX Driver Release Notes*
- *Ultra320 SCSI Host Bus Adapter Support Matrix*
- “HP A7173A PCI-X Dual Channel Ultra320 SCSI Host Bus Adapter Performance White Paper for HP PA-RISC Servers”

1. See also “GigEther-00, GigEther-01, and IEther-00 (Gigabit Ethernet)” on page 78.

Obsolescence

Not applicable.

USB-00 (Universal Serial Bus)

In addition to providing core USB drivers, the USB-00 product, version C.01.00.00, will enable USB DVD boot support for future HP servers.

The FEATURE11i patch bundle (delivered on the Operating Environment [OE] media) includes required patches for the installation of the USB-00 bundle.[1]

Summary of Change

To enable USB DVD boot functionality on Itanium®-based servers, USB-00 version C.01.00.00 is now available as an always-installed product in the HP-UX 11i v2 Operating Environments.

NOTE Please note that this current revision of the USB product will only be qualified with Itanium®-based HP servers, and does not support PA-RISC architectures.

The new version of the USB selectable product differs from its previous versions in the following ways:

- It co-exists with the legacy USB stack in a kernel image. In this case, the legacy USB stack is disabled, and the new USB driver handles all USB traffic.
- It provides a mass storage driver for HP brand USB 1.1 DVD drives for boot install only.
- For this release, USB-00 does not provide multi-seat or multi-head functionality. If you require this functionality, you should revert back to the legacy USB stack. The device special files for USB keyboard and USB mouse are /dev/deviceFileSystem/keyboardMux and /dev/deviceFileSystem/mouseMux, respectively.
- For this release, USB-00 does not support USB hubs. You should revert to the legacy USB stack.
- PA-RISC architectures are not supported, but it is safe to install this bundle on HP-UX 11i v2 PA-RISC systems.

NOTE The PA-RISC flavor of this bundle is intended as a product template for future revisions. It removes any previously delivered PA-RISC versions of USB-00, which were delivered for special use, from the system. It does not provide any USB functionality.

---

1. See “Feature Enablement Patch Bundle (Feature11i)” on page 98.

Impact

If you require multi-seat (multiple monitors) or multi-head (multiple graphics cards), or USB hubs, you should revert to the legacy USB driver delivered as a part of the core kernel by uninstalling this product. See the product `README` notes for more details.

The `FEATURE11i` patch bundle (delivered on the Operating Environment [OE] media) includes required patches for the installation of the `USB-00` bundle.[1] Selection of `USB-00` (using the `swinstall` command) will automatically select the required patches from the `FEATURE11i` bundle on existing HP-UX 11i v2 Itanium®-based servers. The `FEATURE11i` bundle is also always-installed for the initial installation or update to a selected OE.

Compatibility

With the exception of the X server, the new USB product will not be compatible with any application that accesses human interface devices (HID) through the legacy HID device special files in `/dev/hid`. The device special files for `USB-00` are located in `/dev/deviceFileSystem`. A future release will ship with a device file system, DevFS, which will dynamically create and destroy device nodes.

Performance

There is no performance impact.

Documentation

For further information, review the product `README` files and the bundle `INDEX` file in `/var/adm/sw/products/USB-00.2/pfiles`.

Obsolescence

Any version of the `USB-00` with revision string B.11.23.XX is no longer supported and should be removed from the system. Installing this revision C.01.00.00 will remove any obsolete files and product information on the system.

Selectable Mass Storage Drivers

The following table lists the mass storage drivers that are selected during installation rather than automatically installed. For further information, see prior editions of the *HP-UX 11i v2 Release Notes*, available at **`http://docs.hp.com`**.

Table 4-5 Selectable Mass Storage Drivers[a]

Bundle	Driver	Card Number	Description
`iSCSI-00`	`iscsi`	N/A	iSCSI Software Initiator

1. See “Feature Enablement Patch Bundle (Feature11i)” on page 98.

a. In addition to currently supported cards, the `swlist` report may contain the product numbers of cards that have been “pre-enabled,” but have not been released yet. Cards released after the publication of this document may be supported but not shown in this table.

Supported Systems

HP-UX 11i v2 supports only the 64-bit version of the HP-UX kernel. This release of HP-UX 11i v2 release fully supports the following HP 9000 servers, HP Integrity servers, and HP workstations, as well as the new PA-8900 processor.

NOTE Additional information regarding these servers and workstations can be found at the following Web sites:

- HP Servers and Enterprise Systems

  `http://hp.com/go/servers`

- HP Workstations

  `http://hp.com/go/workstations`

- Enterprise Servers, Workstations and Systems Hardware Documentation

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

PA-RISC Systems

- HP 9000 rp24*x*0 and rp34*x*0 series
- HP 9000 rp44*x*0 and rp54*x*0 series
- HP 9000 rp74*x*0 and rp84*x*0 series
- HP 9000 Superdome server
- 64-bit A-Class, L-Class, and N-Class servers

Itanium®-based Systems

- HP Integrity cx2600 server
- HP Integrity rx16*x*0 server
- HP Integrity rx26*x*0 server
- HP Integrity rx4640 server
- HP Integrity rx5670 server
- HP Integrity rx7620/rx8620 servers
- HP Integrity Superdome server
- HP zx2000 and HP zx6000 workstations (see following note)

IMPORTANT The HP-UX 11i v2 May 2005 release is the last release supported on the Itanium®-based zx2000 and zx6000 workstations. These workstations have been discontinued as of September 2004.

Unsupported Servers and Workstations

- HP-UX 11i v2 is not supported on the following Itanium-1 based systems:
  - rx4610
  - rx9610
  - i2000
- HP-UX 11i v2 is not supported on the following PA-RISC Servers:
  - All 32-bit servers (including 32-bit A-Class servers A180 and A180C)
  - All D-Class servers
  - All R-Class servers
  - All E-Class servers
  - All K-Class servers
  - All T-Class servers
  - All V-Class servers
- HP-UX 11i v2 is not supported on PA-RISC Workstations. HP recommends that PA-RISC Workstation customers use HP-UX 11i v1.

  PA-RISC Workstations include the following:
  - B132L, B132L+, B160L, B180L
  - B1000, B2000, B2600
  - C100, C110, C160L, C160, C180, C200, C240, C360
  - C3000, C3600, C3650, C3700, C3750, C8000
  - J200, J210, J210XC, J280, J282, J2240
  - J5000, J5600, J7000, J6000, J6700, J6750
  - 705, 710, 712, 715/33, 715/50, 715/75, 715/64, 715/80, 715/100, 715/100XC
  - 720, 730, 735, 750, 755, 725/50, 725/75, 725/100

Finding Firmware Information

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

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

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

If you have to patch your firmware, the ITRC provides a patch database to search, as well as patch documentation that provides information on how to patch the firmware.

- HP also provides the Subscriber's Choice, which enables you to sign up to receive email notices for firmware updates. At the ITRC Web site, click **maintenance and support (for hp products)**, then **support information digests**.

Utility Pricing Solutions

The HP Instant Capacity and HP Pay per use (PPU) software products are a part of the HP Utility Pricing Solutions program. The HP Instant Capacity product is a purchase model in which processor capacity can be instantly increased to accommodate increasing demands. PPU is a lease model in which customers are charged only for actual processor usage.

- "HP Instant Capacity (formerly Instant Capacity on Demand)" on page 91
- "HP Pay per use" on page 94

HP Instant Capacity (formerly Instant Capacity on Demand)

The HP Instant Capacity (iCAP) version 7.0 (product number B9073BA) provides the ability to instantly increase or decrease processing capacity on specified HP enterprise servers.

Summary of Change

- The name of the product has changed from Instant Capacity on Demand (iCOD) to HP Instant Capacity (iCAP) for HP 9000 and HP Integrity Servers. The new version number of the software is B.11.23.07.00.
- With this version, coupled with the use of HP-UX Virtual Partitions software (vPars)[1] version A.04.01 or greater, you can now use the Instant Capacity (iCAP) software in an integrated virtual partitioned environment. In this environment, the vPars software coordinates with Instant Capacity when allocating resources, making it less likely for a complex to be misconfigured and out of (licensing) compliance.
- Because of the enhanced integration between vPars and Instant Capacity software, there is now a boot time compliance check. At boot time, if the number of assigned processors is greater than the number of intended processors for all virtual partitions in the nPartition, then the Instant Capacity software notifies the vPar monitor, and the monitor prevents the virtual partition from booting until the user performs a hard partition boot to clear the condition.
- For certain configurations, previous versions of the Instant Capacity software required e-mail connectivity to HP in order to send asset reports as encrypted e-mail messages. Instant Capacity versions B.07.*x* no longer require e-mail connectivity or

1. See "HP-UX Virtual Partitions" on page 105.

asset reporting; however, you may choose to configure it (or leave it configured) because it can be useful for viewing complex-wide asset information at the HP Utility Pricing Solutions portal (**`http://www.hp.com/go/icod/portal`**).

Note that for a new installation, asset reporting is on by default so that, unless you turn asset reporting off or configure the e-mail connectivity, error messages may be logged when the software attempts to send asset reports. The `icod_stat` command displays the current configuration for asset reporting. You turn asset reporting on or off with the `icod_notify -a` command. For e-mail configuration details, see the *HP Instant Capacity User's Guide for versions B.07.x*.

- There are also new features associated with the use of Temporary Capacity (TiCAP):
  - — There is a new warning message to indicate that temporary capacity will expire. By default, the message will warn the users when temporary capacity is projected to be exceeded in 15 days. However, the warning message can be configured to specify a shorter or longer value for 15 as the warning period. This is accomplished with the new `-w` option on the `icod_modify` command.
  - — If temporary capacity is exceeded and the value goes negative (unlicensed processors continue to be used), then on the next reboot of any partition in the complex, the Instant Capacity software will automatically deactivate one or more unlicensed processors in order to bring the system into closer licensing compliance. The Instant Capacity software will deactivate as many processors as is necessary to either stop consumption of temporary capacity or to bring the partition to the minimum number of required active processors. You must purchase additional temporary capacity or purchase the appropriate number of (RTU) processor licenses to be in full compliance.

Impact

On HP-UX 11i v2 May 2005, HP Instant Capacity (iCAP) version B.11.23.07.00 supersedes Instant Capacity on Demand (iCOD) versions 6.x. On HP-UX 11i v1, the current version of the product remains 6.50 Instant Capacity on Demand (iCOD).

Compatibility

While the name of the product has changed to be HP Instant Capacity (iCAP), many of the commands, warning, and error messages still refer to the software as iCOD. Commands such as `icod_modify` do not change their name in this version.

When activating or deactivating processors within virtual partitions, new considerations apply because you can use either the `icod_modify` command or the `vparmodify` command, depending on the type of adjustment needed. The `icod_modify` command should be used in a virtual partition environment when you are making adjustments that span multiple nPartitions. If you are adjusting processor assignments across virtual partitions in a single nPartition, you should use the `vparmodify` command (`-a` and `-d` options) for the best coordination between the Instant Capacity software and the vPars software and for optimized behavior. The `vparmodify` command does not affect the intended active count for the nPartition and it therefore cannot be used to migrate unused capacity either to or from other nPartitions.

As described previously, there are also new compliance/enforcement checks in this version: in a virtual partition environment, there is a boot time compliance check to ensure that the number of assigned processors doesn't exceed the number of intended

processors for the nPartition. And, if temporary capacity is exceeded and unlicensed processors continue to be used, the Instant Capacity software may deactivate processors at the next reboot of any partition in the complex.

Performance

Interactions with vPars software may be slower than in previous releases, due to the additional coordination and integration between vPars and Instant Capacity. Affected commands include `vparmodify` and `vparcreate`.

Documentation

For further information, refer to the following:

- Manpages:
  - *icod* (5)
  - *icod_modify* (1M)
  - *icod_notify* (1M)
  - *icod_stat* (1M)
- Web Sites:

  HP Software Depot: software.hp.com

  Technical Documentation: docs.hp.com
- Documents:

  The following documents are available at **`http://docs.fc.hp.com/hpux/netsys/index.html#On%20Demand%20Solutions%20%28ODS%29`**:
  - *HP Instant Capacity User's Guide for versions B.07.x*
  - *HP Instant Capacity Release Notes for versions B.07.x*

Obsolescence

The name of the product has changed to HP Instant Capacity for HP 9000 and HP Integrity Servers. The name “iCOD” for the product as a whole is now obsolete (although there are still internal references to the iCOD name).

HP Pay per use

The HP Pay per use (PPU) version B.11.23.07.02 software (HP product T2351AA) is a lease model in which customers are charged only for the processor usage on (specified) HP servers.

Summary of Change

PPU has been updated to version B.11.23.07.02 to support HP-UX Virtual Partitions (vPars)[1] and the Node and Host Name Expansion product.[2]

Impact

PPU version B.11.23.07.02 supersedes PPU version 7.0 on HP-UX 11i v2.

Compatibility

There are no known compatibility issues.

Performance

There are no known performance issues.

Documentation

For further information, refer to the following documentation:

- Manpages:
  - *ppu* (5)
  - *ppuconfig* (1M)
  - *ppud* (1M)
- Web Sites:
  - HP Software Depot: **http://software.hp.com**
  - Technical Documentation: **http://docs.hp.com**
  - HP External: **http://www.hp.com/hpfinancialservices/pay_per_use.html**
- Documents:

  For further information, refer to the following documents, available at **http://docs.hp.com/hpux/netsys/index.html#On%20Demand%20Solutions%20%28ODS%29**:
  - *HP Pay per use (PPU) Release Notes for versions 7.x*
  - *HP Pay per use (PPU) User's Guide for versions 7.x*

Obsolescence

Not applicable.

1. See “HP-UX Virtual Partitions” on page 105.
2. See “Node and Host Name Expansion” on page 125.

5 General System Administration

What is in This Chapter?

This chapter presents information of particular interest to system administrators, including the following:

Enterprise Cluster Master Toolkit

The Enterprise Cluster Master Toolkit (ECMT) is a set of templates and scripts that allow you to configure Serviceguard packages for the HP Internet servers as well as for third-party database management systems. This unified set of high availability tools is being released on HP-UX 11i v2.

Summary of Change

ECMT has been updated to version B.02.21. Changes since B.02.11 include:

- Support for HP 9000 servers and HP Integrity servers.
- Scripts for Oracle 9i and 10g database applications, HP Apache, and HP CIFS.
- Enhancements to the Oracle Toolkit to support both Oracle 9i and Oracle 10g single-instance database applications. In addition, this toolkit has been enhanced to provide maintenance mode operations. Refer to the associated `README` file for specific details.

Impact

PA-RISC customers who migrate from ECMT version B.02.20 on HP-UX 11i v1 to B.02.21 on HP-uX 11i v2 will not have toolkits in the ECMT for Sybase, Informix, and DB2. These applications do not have toolkits in the HP-UX 11i v2 ECMT.

Compatibility

There are no known compatibility issues.

Performance

There are no known performance issues.

Documentation

For further information, see the `README` file included with the product, as well as the following document, available at **`http://docs/hp/com/hpux/ha`**:

- *Enterprise Cluster Master Toolkit Version B.02.21 Release Notes*

Obsolescence

Not applicable.

Event Monitoring Services

Event Monitoring Services (EMS) is a framework for monitoring system resources which includes configuring, checking resource status, and sending notification when configured conditions are met.

Summary of Change

EMS now supports the Node and Host Name Expansion feature, which is available on Software Pack. (See “Node and Host Name Expansion” on page 125.)

EMS manpages are now available in Japanese.

Impact

There are no impacts, other than that listed above.

Compatibility

EMS libraries are also shipped as PA-RISC binaries on an HP-UX 11i v2 Itanium®-based system to provide compatibility for the existing PA-RISC-based monitors. The PA-RISC binaries run via the Aries Binary Translator.

Performance

There are no known performance issues.

Documentation

- The *Event Monitoring Service Release Notes for HP-UX 11i v2 May 2005* and the *High Availability Monitors Release Notes for HP-UX 11i v2 May 2005* can be found on the Instant Information CD and at **`http://www.docs.hp.com/hpux/ha`**.
- The *Using Event Monitoring Service* and *Using High Availability Monitors* user manuals are also available at **`http://www.docs.hp.com/hpux/ha`**.
- For more information on the Aries Binary Translator, see the following:
  - The *Aries* (5) manpage.
  - The white paper, “Compatibility Mode on Itanium®-based HP-UX: A Developer Perspective,” available at **`http://devresource.hp.com/drc/STK/docs/refs/Aries.jsp`**.
- The EMS framework manpages are now also available in Japanese.

Obsolescence

EMS will be deprecated post HP-UX 11i v3 in favor of the Web-Based Enterprise Management (WBEM) tool.

Feature Enablement Patch Bundle (Feature11i)

The Feature Enablement Patch Bundle (FEATURE11i) consists of required patches that meet dependencies for new or updated software products. This patch bundle is updated as needed with new patches for support of software products.

Summary of Change

The FEATURE11i bundle is delivered for the first time in the May 2005 release of HP-UX 11i v2. The May 2005 FEATURE11i bundle consists of patches required for HP-UX Virtual Partitions (vPars) functionality, USB-00, and future products with new features.[1]

Impact

The patches in this bundle have undergone more testing and have received greater exposure than most patches downloaded individually from the HP Patch Hub. All dependencies for patches in this bundle have been resolved.

With the patches provided by the FEATURE11i bundle, you can now run the vPars product on both HP Integrity (Itanium®-based) and HP 9000 (PA-RISC) systems.

Compatibility

If you choose to load only the May 2005 version of this patch bundle, without doing a complete update to the May 2005 version of HP-UX 11i v2, you must first load the September 2004 version of HP-UX 11i v2.

Performance

There are no known performance issues.

Documentation

For further information, refer to the following:

- readme for FEATURE11i, available at /docs/patch/feature11i.readme.html
- *HP-UX 11i Version 2 Installation and Update Guide*, May 2005, available on the Instant Information CD and at **http://docs.hp.com**

Obsolescence

Not applicable.

1. See “HP-UX Virtual Partitions” on page 105 and “USB-00 (Universal Serial Bus)” on page 86.

GlancePlus Pak

GlancePlus Pak, version C.03.86, integrates the GlancePlus and HP OpenView Performance Agent for HP-UX (OVPA) products into a single tool to help customers better manage the performance and availability of their servers.

Summary of Change

This release includes the following enhancements:

- For both OVPA and GlancePlus:
  - New `parm` file parameters have been added to take advantage of process arguments and command strings (see the default `/var/opt/perf/parm` file for more detailed information and examples):
    - *`javaarg`* = true/false to collect java class or jar name processes
    - *`argv1`* = first command argument [,]
    - *`cmd`* = command name expression
  - New metrics have been added to enable more precise system performance analysis while maintaining low monitoring overhead.
- For GlancePlus:
  - For Motif-mode `gpm`:
    - Added the Disk Queue Graphs window, which displays a pie chart for each disk device GlancePlus is monitoring.
    - Added the Search List Dialog window, which is used to find a process in the Process List window.
    - Enabled the use of cursor Control keys for selection in all the List type windows.
    - Enabled mouse wheel scrolling in all windows for X-environments where button2 scrolling is supported.
  - For character-mode `glance`:
    - Added the `-aos` command line option as an alternative to the `-adviser_only -syntax` option.

Impact

Refer to the Release Notes of each product (GlancePlus and OpenView Performance Agent) in `/opt/perf/ReleaseNotes/`, or at the following Web site:

`http://ovweb.external.hp.com/lpe/doc_serv/`

Compatibility

There are no known compatibility issues.

Performance

There are no known performance issues.

Documentation

Please refer to the release notes of each product (GlancePlus and OpenView Performance Agent) in `/opt/perf/ReleaseNotes/`, or at the following Web site:

`http://ovweb.external.hp.com/lpe/doc_serv/`

Obsolescence

Not applicable.

High Availability Monitors

High Availability (HA) Monitors help in providing high availability in an HP-UX environment by monitoring particular system resources and then informing target applications (e.g., MC/ServiceGuard) when the resources they monitor are at critical user-defined values.

Summary of Change

HA Monitors now supports the Node and Host Name Expansion feature, which is available on the May 2005 Software Pack. (For more information about this feature, see “Node and Host Name Expansion” on page 125.)

Impact

There are no impacts, other than that listed above.

Compatibility

There are no known compatibility issues.

Performance

There are no known performance issues.

Documentation

The following documents are available on the Instant Information CD and on the Web at **`http://docs.hp.com/`**:

- *Using High Availability Monitors*
- *High Availability Monitors Release Notes*

Obsolescence

High Availability Monitors will be deprecated post HP-UX 11i v3 release.

HP Partitioning

Partitioning provides the ability to subdivide system resources into isolated regions that operate independently from each other (the equivalent of a box within a box). HP is the only high-end UNIX offering to provide a broad range of solutions designed to meet the diverse needs of our customers. Changes to these solutions are described in the following sub-sections:

HP Global Workload Manager

HP Global Workload Manager (gWLM) is a tool that allows you to centrally define resource-sharing policies that you can use across multiple HP servers. These policies increase system utilization and facilitate controlled sharing of system resources. gWLM's monitoring abilities provide both real-time and historical monitoring of the resource allocation.

gWLM A.01.01.*x* has three components:

- Central Management Server, or CMS (T2412AA) (Available only for HP-UX systems)

  You configure gWLM and monitor your workloads on the system where the CMS software is installed. This system must also have HP Systems Insight Manager[1] installed.

- Agent (T2743AA on HP-UX; T2779AA on Linux)

  Install the gWLM agent software on each system where you have workloads you want gWLM to manage. These systems are known as managed nodes.

1. See “HP Systems Insight Manager” on page 118.

On HP-UX managed nodes, gWLM can manage workloads based on nPartitions (that use Instant Capacity), virtual partitions, processor sets, or fss groups. On Linux, gWLM manages workloads based on processor sets (created using CPU affinity masks).

- Agent LTU (T2762AA on HP-UX; T2778AA on Linux)

  The agent is free. However, it is functional only for a limited time. For unlimited use, purchase and install the agent License To Use (LTU) for each managed node.

Summary of Change

HP Global Workload Manager A.01.01.*x* is new with the HP-UX 11i v2 May 2005 release[1] and is supported on the following systems:

- HP-UX 11i v1 on HP 9000 servers (PA-RISC 2.0)
- HP-UX 11i v2 on HP 9000 servers (PA-RISC 2.0) and on HP Integrity servers (Itanium®-based)
- Linux (SUSE Linux Enterprise Server 9 or Red Hat Enterprise Linux 4) on HP Integrity servers (Itanium®-based)

Impact

The benefits of gWLM include the following:

- Better use of the server capacity you already have

  Typically, servers are set up with a single workload and ample reserve capacity to handle the peak demand of that workload. gWLM allows you to combine multiple workloads on a single server and make use of the reserve capacity—when it is not needed by your mission-critical workload.

- Confidence that your mission-critical workloads get the resources they need

  Even with multiple workloads on a server, you can ensure your mission-critical workload gets the resources it needs: gWLM automatically adjusts resource allocation, making it easy to share resources when they are plentiful, but also to dedicate those resources to workloads when there are spikes in resource demand.

- Reduced system administration costs

  With gWLM managing resource allocation, you can combine more workloads on fewer servers, reducing administration costs.

Compatibility

There are no known compatibility issues.

Performance

gWLM improves performance system utilization when properly configured.

Documentation

For further information, refer to the following:

1. gWLM A.01.00 shipped on **`http://software.hp.com`** in December 2004.

- Manpages:
  - /opt/gwlm/man/man1m.Z/gwlm.1m
  - /opt/gwlm/man/man1m.Z/gwlmcmsd.1m
  - /opt/gwlm/man/man1m.Z/gwlminitconfig.1m
  - /opt/gwlm/man/man1m.Z/gwlmplace.1m
  - /opt/gwlm/man/man1m.Z/gwlmreport.1m
  - /opt/gwlm/man/man1m.Z/gwlmsend.1m
  - /opt/gwlm/man/man1m.Z/gwlmsslconfig.1m
  - /opt/gwlm/man/man4.Z/gwlmxml.4
  - /opt/gwlm/man/man5.Z/gwlm.5
- Web site:

  http://www.hp.com/go/gwlm
- Documents:

  The following documents are available at **http://docs.hp.com/en/netsys.html#HP%20Global%20Workload%20Manager**:
  - *Getting Started with gWLM*
  - *gWLM: Reference and Additional Topics*
  - *HP gWLM Version A.01.01.x Release and Installation Notes for HP-UX 11i v1, HP-UX 11i v2, and Linux*

Obsolescence

Not applicable.

HP Process Resource Manager

HP Process Resource Manager (PRM) C.03.00 provides an efficient and flexible way to manage resource allocation at times of peak system load. It gives the system administrator the ability to group users or processes together and guarantee each group minimum amounts of the total CPU, real memory, and disk bandwidth available.

Summary of Change

PRM C.03.00 includes the following changes:

- Integration with Security Containment[1] to provide secure resource partitions
- Support for 256 PRM groups
- Integration with HP Systems Insight Manager[2]
- The daemon used for remote management is now off by default to enhance security
- SSL encryption is now enabled by default
- To make memory enhancement more robust:

1. See “HP-UX 11i Security Containment” on page 150.
2. Available on the Applications Release media.

  - — *PRM_SYS* is now able to import memory
  - — *OTHERS* must always be able to export

    (You cannot set *EXPORT* for *OTHERS* to 0.)
- See also “PRM Libraries” on page 111.

Impact

- More secure environment if desired
- More PRM groups
- Remote management must now be manually configured (`prm3d` must be started on the remote systems; SSL encryption must be configured)

Compatibility

- The `prm3d` daemon is no longer started by default.

  For security purposes, the `prm3d` daemon used for remote management is no longer started by default at boot in the file `/etc/rc.config.d/prm`.

  You can manually set the value of *PRM_RMTCONF* to 1 in the `/etc/rc.config.d/prm` file to allow automatic starting of the daemon.
- SSL encryption of remote management using `xprm` is now enabled by default.

  The property *prmrmi_ssl* in the file `/var/opt/prm/prmrmi.properties` is now set to *true* by default. Each system you attempt to securely connect to must also have this property set to *true*.

  Set this value to *false* to use `xprm` with PRM versions that do not support the `/var/opt/prm/prmrmi.properties` file.

Performance

PRM is designed to set resource allocations (CPU, memory, disk bandwidth) for applications. Misconfiguration can result in degradation.

Documentation

For further information, refer to the following:

- Manpages:
  - — The *prm* (5) manpage provides an overview of PRM and points to all the other manpages.
- Web sites:
  - — **`http://www.hp.com/go/prm`** (the “Information Library” provides white papers)
- Documents (available at **`http://docs.hp.com/hpux/ha/index.html#Process%20Resource%20Manager`**):
  - — *HP Process Resource Manager User's Guide*
  - — *HP PRM Version C.03.00 Release Notes for HP-UX 11i v1 and HP-UX 11i v2*
- Also see “PRM Libraries” on page 111.

Obsolescence

Not applicable.

HP-UX Virtual Partitions

HP-UX Virtual Partitions (vPars) A.04.01 enables multiple instances of a selected HP-UX 11i v2 OE to run simultaneously on one server or within one nPartition, with each OE instance hosting its own set of applications in an isolated environment.

When vPars A.04.01 is available, you can purchase it at the HP-UX Virtual Partitions at the HP Software Depot at **http://software.hp.com**.

Prior to or while installing vPars A.04.01, you must cold-install or update to the HP-UX 11i v2 May 2005 Operating Environments (OE) Update Release, which is delivered by the OE media. The OE media delivers updated components for the full support of vPars, including the FEATURE11i patch bundle, which contains the core patches required for vPars installation and support. (See “Feature Enablement Patch Bundle (Feature11i)” on page 98.)

The vPars product for HP-UX 11i v2 May 2005 will require an update of System and/or Manageability Firmware. See the *HP-UX Virtual Partitions Ordering and Configuration Guide* at **http://docs.hp.com/hpux/os/11i/index.html#Virtual%20Partitions**.

Summary of Change

- vPars A.04.01 supports:
  - multiple instances of a selected HP-UX 11i v2 Operating Environment (May 2005 update or later)
  - both PA-RISC and Itanium®-based servers

NOTE vPars A.03 continues to support the HP-UX 11i v1 Operating Environments.

- vPars A.04.01 functionality includes:
  - fully dynamic-CPU migration (The restrictions of bound and unbound CPUs have been removed.)
  - ability to assign local memory or processors from a specific cell to a specific virtual partition for better performance
  - ability to use either Cell Local Memory (CLM) and/or Interleaved Local Memory (ILM)
  - integration of Temporary Instant Capacity (TiCAP)
  - support for both HP Pay per use (PPU) Active CPU and PPU Percent Utilization

For detailed information on the supported servers, processors and configurations, please see the *HP-UX Virtual Partitions Ordering and Configuration Guide* at **http://docs.hp.com/hpux/os/11i/index.html#Virtual%20Partitions**.

For detailed information on vPars A.04.01, please see the *HP-UX Virtual Partitions Release Notes* at **http://docs.hp.com/hpux/os/11i/index.html#Virtual%20Partitions**.

Impact

There are no impacts other than those described previously.

Compatibility

There are no known compatibility issues.

Performance

There are no known performance issues.

Documentation

For further information, refer to the vPars documents available at **http://docs.hp.com/hpux/os/11i/index.html#Virtual%20Partitions**.

In addition, see the following site at the Software Depot: **http://software.hp.com/portal/swdepot/displayProductInfo.do?productNumber=T1335BC**

Obsolescence

Not applicable.

HP-UX Workload Manager

HP-UX Workload Manager (WLM) A.03.00 provides goal-based workload management. This management enables automatic resource allocation and application performance management through the use of prioritized service-level objectives (SLOs). It provides this functionality by automating features of HP-UX Virtual Partitions, nPartitions, Processor Sets, and HP Process Resource Manager (PRM).

Summary of Change

WLM A.03.00 includes the following features:

- CPU migration across nested nPartitions, virtual partitions, and FSS groups
- Integration with Security Containment[1] to provide secure resource partitions
- Support for virtual partitions on HP Integrity servers
- Secure network communications via SSL
- Host-based configurations, which simplify management of nPartitions and virtual partitions
- Improved diagnostic tools
- Integration with HP Systems Insight Manager[2]

1. See “HP-UX 11i Security Containment” on page 150.

- Configuration file for `wlmpard` no longer supports the partitions or weight keywords
- The `wlminfo` command has various new features:
  - The `-q` option to suppress messages in the `wlminfo` output
  - The `group` subcommand has an `-S` option to show data for the *PRM_SYS* group
  - The new subcommand `proc` shows data for the most active processes
  - The `host` subcommand now has a “CPU Used” column in its output to display CPU utilization data
- The *mincpu*/*maxcpu* keywords are now optional in all cases
- New behavior when the sum of the *gmincpu* values exceed the total CPU

  Previously, when this sum exceeded the total CPU, the values were scaled down proportionately so that the sum equals the total CPU. Now, those values are treated as CPU requests to be met before any other requests are considered. Any weight values assigned to the workload groups apply.
- The `wlmpard` daemon is no longer required to be running in a partition on the managed complex

  Previously, if WLM was managing the partitions in a complex, `wlmpard` had to be running in one of those partitions. Now, `wlmpard` simply has to be running on a supported platform with network connectivity to the managed partitions.

Impact

WLM A.03.00 provides the following:

- More flexibility in resource management
- More secure environments

Compatibility

- If you use either the `partitions` or `weight` keywords in your `wlmpard` configuration file, you will get errors.

Performance

Performance is improved when WLM is used properly, but can degrade when WLM is not configured appropriately.

Documentation

For further information, refer to the following:

- Manpages:
  - The *wlm* (5) manpage provides a list of all the WLM manpages in its SEE ALSO section.
- Web site:
  - **`http://www.hp.com/go/wlm`** (the “Information Library” provides white papers)

2. Available on the Applications Release media.

- Documents (available at **`http://docs.hp.com/hpux/netsys/index.html#HP-UX%20Workload%20Manager`**):
  - — *HP-UX Workload Manager User's Guide*
  - — *HP-UX Workload Manager A.03.00 Release Notes for HP-UX 11i v1 and HP-UX 11i v2*

Obsolescence

Not applicable.

HP-UX Workload Manager Toolkits

The HP-UX Workload Manager Toolkits (WLMTK) product version A.01.08 enhances functionality provided by HP-UX Workload Manager (WLM) and simplifies the integration of various products with WLM. These products include Apache, Oracle database instances, SAS, SNMP, and WebLogic.

Summary of Change

The Pay Per Use Toolkit, which is part of WLMTK, currently helps integrate HP-UX Workload Manager and the Utility Pricing Solutions (iCAP and Pay Per Use) products.[1]

This toolkit and its `utilitydc` command are being deprecated.

While the functionality will still exist for a certain amount of time, you are encouraged to use the new solution, which is centered around the `wlmpard` command.

Impact

If you are currently using `utilitydc`, begin conversion to the new solution based on the `wlmpard` command. For information on this solution, see the *wlmpard* (1M) manpage.

Compatibility

There are no known compatibility issues.

Performance

There are no known performance issues.

Documentation

For further information, refer to the following:

- Manpages:
  - — The *wlmtk* (5) manpage provides an overview of the toolkits and lists all the other manpages.
- Web site:
  - — **`http://www.hp.com/go/wlm`** (the “Information Library” provides white papers)

1. See “Utility Pricing Solutions” on page 91.

- Documents (available at **`http://docs.hp.com/hpux/netsys/index.html#HP-UX%20Workload%20Manager`**):
  - — *HP-UX Workload Manager Toolkits User's Guide*
  - — *HP-UX Workload Manager Toolkits Version A.01.08 Release Notes for HP-UX 11.0, HP-UX 11i v1, and HP-UX 11i v2*

Obsolescence

Not applicable.

nPartition Provider

The nPartition Provider, version B.11.23.01.04.00.*x*, is the HP-UX WBEM Services provider for nPartition-related information on partitionable systems. This product is used by Partition Manager and the partition commands to configure and manage HP systems that support nPartitions. With this component, partitionable systems can be managed both locally and remotely. The nPartition Provider is only used through a WBEM interface. It is not invoked directly by the user.

Summary of Change

Summary The nPartition Provider has been upgraded to version B.11.23.01.04.00.*x* to incorporate defect fixes and performance improvements.

Impact

There are no impacts.

Compatibility

There are no known compatibility issues.

Performance

There are no known performance issues.

Documentation

Complete information is in the nPartition provider product data sheet, installed as the following:

```
/opt/nparprovider/doc/nParProviderDataSheet.html
```

Obsolescence

Not applicable.

Partition Manager (parmgr)

Partition Manager v2.0 (version B.11.23.02.00.04.*x*) provides system administrators with a convenient graphical user interface for configuration and management of nPartitions on HP server systems. In addition, Partition Manager enhances the reliability and performance of HP partitioning products by providing automatic detection of several types of configuration problems.

Summary of Change

- Partition Manager now runs as an application under HP System Management Homepage.[1] This has the following effects on Partition Manager installation and operation:
  - The location of installed files has changed.
  - Authentication of user identities is now provided by HP System Management Homepage.
  - Partition Manager can now be launched from within HP System Management Homepage.
  - The `parmgr` command will automatically start HP System Management Homepage if it is not already running.
  - The `-s` option to the `parmgr` command is now obsolete.
  - If the `parmgr` command is run by a user with Administrator (root) privileges, the `-b` option can be used to bypass the authentication step under HP System Management Homepage.
- Additional bug fixes have also been incorporated into this release.
- Errata:
  - Under certain circumstances, a blank page will appear in the Web browser when selecting “Partition Manager Help” from the HP Systems Management Homepage help menu. If this occurs, use your browser's **Reload** button to correct the problem.
  - The Japanese version of the *parmgr* (1M) manpage included with this release omits the following information:
    - The `parmgr` command no longer supports the `-s` option.
    - The `parmgr` command now allows root users to bypass the authentication step under HP System Management Homepage by using the `-b` option.
    - The procedures for managing SSL certificates have changed. Refer to the “Managing SSL certificates” help topic for details.

Impact

There are no impacts other than those listed previously.

Compatibility

There are no known compatibility issues.

1. See “HP System Management Homepage” on page 117.

Performance

There are no known performance issues.

Documentation

The primary documentation for this product consists of a set of HTML online help files. The online help is accessed through context-sensitive help links in Partition Manager.

The `parmgr` command (which can be used to start or stop Partition Manager) is documented in the *parmgr* (1M) manpage that is included with the product. Both English and Japanese versions of the manpage are included.

Additional information about Partition Manager, including links to download all currently available versions, can be found at **`http://docs.hp.com/en/PARMGR/`**.

Obsolescence

Not applicable.

PRM Libraries

The PRM Libraries (version C.03.00) contains only the HP Process Resource Manager (PRM) kernel fileset, `PRM-Sw-Krn`.

Summary of Change

The version number for the `PRM-Sw-Krn` fileset is now C.01.03.

Impact

When upgrading PRM, the system will need to be rebooted.[1]

Compatibility

There are no known compatibility issues.

Performance

There are no known performance issues.

Documentation

For further information, refer to the following documents, available at **`http://docs.hp.com/hpux/ha/index.html#Process%20Resource%20Manager`**:

- *HP Process Resource Manager User's Guide*
- *HP PRM Version C.03.00 Release Notes for HP-UX 11i v1 and HP-UX 11i v2*

Also see “HP Process Resource Manager” on page 103.

Obsolescence

Not applicable.

1. See also “HP Process Resource Manager” on page 103.

vPar Provider

The HP-UX Virtual Partitions (vPars) product allows division of a server into multiple virtual partitions, which is used to run multiple instances of HP-UX. Each virtual partition has its own hardware resources (CPU, Memory and I/O slots).

The vPar Provider is an HP-UX WBEM services provider introduced in the HP-UX 11i v2 May 2005 release for extracting information about virtual partitions on a system. As it is a read-only provider, clients cannot modify virtual partition configurations with it and have to use a WBEM interface instead.

The vPar Provider always gets its data from the default vPar database located at `/stand/vpdb`. The vPar Provider talks to the nPartition Provider to get information about I/O assigned to a virtual partition. It then determines whether or not it is running on an nPar. If the nPartition Provider is down, then the information is not provided. The vPar Provider uses the namespace `root/cimv2/vpar`.

Summary of Change

The vPar Provider has the following features:

- It is a WBEM vPar Provider, which displays information about virtual partitions.
- Clients cannot modify virtual partition configurations with it, as it is a read-only provider.

Impact

There are no impacts other than those described above.

Compatibility

There are no known compatibility issues.

Performance

There are no known performance issues.

Documentation

The *VPar Provider Release Notes* can be found at **`http://docs.hp.com`**. In addition, the `/opt/vparprovider/doc` directory contains the *vPar Provider Release Notes* and data sheet.

Obsolescence

Not Applicable.

HP Servicecontrol Manager

HP Servicecontrol Manager (SCM) provides a multi-system management solution for HP-UX and Linux systems.

Summary of Change

SCM has been replaced by HP Systems Insight Manager[1] and has been removed from the HP-UX 11i v2 Operating Environments.

Impact

You can now use HP Systems Insight Manager, which contains a superset of SCM's functionality.

Compatibility

There are no known compatibility issues.

Performance

There are no known performance issues.

Documentation

Further information about HP Systems Insight Manager can be found at the HP Systems Insight Manager Web site at **http://www.hp.com/go/hpsim/**. See also "HP Systems Insight Manager" on page 118.

Obsolescence

This product is obsolete. HP Systems Insight Manager is its replacement and contains a superset of SCM's functionality. For further information, see "HP Systems Insight Manager" on page 118 and refer to the HP Systems Insight Manager Web site at **http://www.hp.com/go/hpsim/**.

HP Serviceguard

HP Serviceguard is a high-availability clustering product. Extensions are available for Disaster Recovery, for SAP, for Oracle RAC, and for Faster Failover.

Two related products are bundled with Serviceguard:

1. See "HP Systems Insight Manager" on page 118.

- HP Serviceguard Manager is the graphical user interface (GUI) for HP Serviceguard. With versions A.04.00 and the newly released A.04.02, you can monitor, manage, and configure HP-UX Serviceguard clusters from HP-UX, Windows, and Linux management stations.
- Quorum Server version A.02.00 is one type of cluster lock. It acts as a tie-breaker in cluster reformation. It resides outside the HP-UX cluster it serves, on either an HP-UX or Linux server.

Versions A.11.15 and A.11.16 are supported on HP-UX 11i v2. Version A.11.16, initially delivered in HP-UX 11i v2 September 2004, is the version delivered in the current release of HP-UX 11i v2.

Summary of Change

Serviceguard version A.11.16, released in 2004, introduced a new method for non-root access for Serviceguard commands. New roles are assigned in the cluster or package configuration file; the `cmclnodelist` and `.rhosts` files are not consulted after configuration.

For this release, Serviceguard has confirmed support for HP-UX Virtual Partitions[1] version A.04.01 and HP-UX 11i Security Containment.[2]

Impact

Features for Serviceguard A.11.16 have been tested.

Compatibility

For compatibility information, see the Serviceguard Compatibility Matrix posted at **`http://docs.hp.com/hpux/ha`**. Navigate to **Serviceguard**, then **Compatibility Matrixes**.

- Nodes in a Serviceguard A.11.16 cluster can be HP 9000 servers, HP Integrity servers, or a combination of both.
- Serviceguard versions A.11.15 and A.11.16 currently support CVM 3.5 on HP-UX 11i v2.
- Serviceguard A.11.16 has been tested with HP-UX 11i Security Containment. Details are documented in the *HP-UX 11i Security Containment Administrator's Guide*, available at **`http://docs.hp.com`**.
- Limits for `hostname` within Serviceguard clusters are 31 bytes.
- The HP Serviceguard products have been certified by HP to co-exist with the Shadow Password product available for HP-UX. The following products/revisions are supported:
  - HP-UX 11i v1, 11i v2, and 11i v2 September 2004 Release (includes HP 9000 and HP Integrity servers)
  - Serviceguard revisions A.11.15 and A.11.16 (and later)

1. See “HP-UX Virtual Partitions” on page 105,
2. See “HP-UX 11i Security Containment” on page 150.

— Serviceguard Cluster Object Manager B.02.02.00 (and later)

— Serviceguard Manager revisions A.04.00 and A.04.02 (and later) for Windows, Linux and HP-UX

— HP-UX Shadow Passwords revision B.11.11.02 (and later) for HP-UX 11i v1 or 11i v2 (and later) because this includes shadow passwords in the base OS.

Any previous revisions of Serviceguard, the Serviceguard Cluster Object Manager, Serviceguard Manager, or HP-UX have not been tested and therefore will not be supported with Shadow Passwords.

- Serviceguard's use of dynamic ports does not work if the predefined Bastille Sec20MngDMZ (`MANDMZ.config`) or Sec30DMZ (`DMZ.config`) configurations are installed. These configurations use different IPFilter rules to define firewall protection than the rules Serviceguard uses. The required IPFilter-SG rules are documented in the *HP-UX IPFilter Version A.03.05.09 Administrator's Guide* at **`http://docs.hp.com/en/B9901-90021/B9901-90021.pdf`**.
- When the Serviceguard security patch of 2004 is installed, Serviceguard is not compatible with the default settings for the HP-UX Bastille Sec10Host configuration. The Sec10Host configuration disables the `identd` daemon, but Serviceguard with the security patch requires the `identd` daemon to be running for authentication purposes. For information on how to configure HP-UX Bastille Sec10Host to allow the `identd` daemon to run, refer to the latest *HP-UX 11i Version 2 Installation and Update Guide*, available at **`http://docs.hp.com/en/oshpux11iv2.html`**.

Performance

The Serviceguard features do not impact performance.

Documentation

For further information, refer to the following documentation, available at **`http://docs.hp.com/hpux/ha`**:

- *Managing Serviceguard* (user's guide)
- Manpages (documented in the manual *Managing Serviceguard*)
- *Serviceguard A.11.15 and A.11.16 Release Notes*
- *Quorum Server Release Notes*
- *Serviceguard Manager Release Notes*
- *Serviceguard Support Matrixes*
- "Securing Serviceguard" (white paper)

Other documents and white papers, including the *HP-UX 11i Security Containment Administrator's Guide*, are also available from **`http://docs.hp.com`**.

The *HP-UX IPFilter Version A.03.05.09 Administrator's Guide* is available at **`http://docs.hp.com/en/B9901-90021/B9901-90021.pdf`**.

Obsolescence

Not applicable.

HP Serviceguard NFS Toolkit

HP Serviceguard Network File Server (NFS) Toolkit (formerly MC/ServiceGuard NFS Toolkit) uses HP Serviceguard (formerly MC/ServiceGuard) to set up highly available NFS servers. An NFS server is a host that "exports" its local directories (makes them available for client hosts to mount using NFS). On the NFS client, these mounted directories look to users like part of the client's local file system. With HP Serviceguard NFS, the NFS server package containing the exported file systems can move to a different node in the cluster in the event of failure.

Summary of Change

HP Serviceguard NFS Toolkit version A.11.23.03 improves the failover performance for `rpcbind` failures. The product name has been changed from "MC/ServiceGuard NFS Toolkit" to "HP Serviceguard NFS Toolkit." Other defects were fixed in this release and are documented in the *Serviceguard NFS Toolkit A.11.11.04 and A.11.23.03 Release Notes*, available at **`http://docs.hp.com/en/ha.html#Highly%20Available%20NFS`**.

Impact

If NFS services are monitored and `rpcbind` fails, it will now take less time for a failover to occur. A new variable, *`PORTMAP_RETRY`*, has been added to the `nfs.mon` script to configure the number of times to attempt to ping `rpcbind` before a failover occurs (the default is 4).

Compatibility

There are no known compatibility issues.

Performance

Previously if `rpcbind` were killed, it would take approximately 12 minutes for a failover to occur. There were 10 attempts made to ping `rpcbind`. With the new *`PORTMAP_RETRY`* variable in `nfs.mon`, the number of attempts can be set to any value greater than 0, with a default of 4. The failover time with the default value of 4 is approximately 5 minutes.

Documentation

For further information, refer to the following documents at **`http://docs.hp.com/en/ha.html#Highly%20Available%20NFS`**:

- *Serviceguard NFS Toolkit A.11.11.04 and A.11.23.03 Administrator's Guide*
- *Serviceguard NFS Toolkit A.11.11.04 and A.11.23.03 Release Notes*

Obsolescence

Not applicable.

HP System Management Homepage

HP System Management Homepage (bundle SysMgmtWeb) is a Web-based interface that consolidates and simplifies single system management for HP servers on Windows, Linux and HP-UX operating systems.

Summary of Change

HP System Management Homepage version 2.2 is a new product for HP-UX 11i v1 (11.11) and HP-UX 11i v2 (11.23).

System Management Homepage provides enhanced security and streamlined operations for servers running HP-UX, including the following:

- Browser access using OS-based SSL-secure authentication
- Common HTTP and HTTPS services for HP management applications and utilities, for reduced complexity and system resource requirements

Impact

HP System Management Homepage version 2.2 provides the following key customer benefits:

- Host based authentication and tight integration with existing security infrastructure
- Management tools that consume minimal system resources. A Tools tab is provided to launch management tools (similar to the SAM Functional Area Launcher).
- Usable “out of the box” (default installed) by root with no user configuration
- Simplified, intuitive, and task-oriented user interface (UI)
- Highly responsive UI supporting “access from anywhere” via a browser
- Support JSP-based plug-ins with minimal performance and usability degradation
- Consistent Help and Localization strategy with HP System Insight Manager (HP SIM)[1]
- Common logging facility and area for customers to view application/tool and system specific logs

1. See “HP Systems Insight Manager” on page 118.

Compatibility

There are no known compatibility issues.

Performance

HP System Management Homepage version 2.2 is intended as a highly responsive user interface supporting “access from anywhere” via a browser.

Documentation

HP System Management Homepage manpages are included with product. The following documents are also available at **http://docs.hp.com**:

- *HP System Management Homepage Release Notes*
- *HP System Management Homepage Installation Guide*

Obsolescence

Not applicable.

HP Systems Insight Manager

HP Systems Insight Manager (HP SIM) combines the strengths of Insight Manager 7, HP Toptools, and HP Servicecontrol Manager to deliver a single tool for managing HP ProLiant, HP Integrity, and HP 9000 systems running Microsoft® Windows®, Linux, and HP-UX. The core HP SIM software delivers the essential capabilities required to manage all HP server platforms. HP SIM can be extended to provide system management with plug-ins for HP clients, storage, power, and printer products. Plug-in applications for rapid deployment, performance management, partition management, and workload management enable you to pick the value-added software required to deliver complete lifecycle management for your hardware assets.

Summary of Change

HP SIM 4.2 replaces HP Servicecontrol Manager on HP-UX.

HP SIM is now delivered on the HP-UX 11i v2 Operating Environments (OEs) media as a selectable product in all OEs.

HP SIM 4.2 adds support for the following:

- System Management Homepage[1]
- HP ProLiant Essentials Vulnerability and Patch Management Pack (VPM)
- HP ProLiant Essentials Virtual Machine Management Pack (VMM)

1. See “HP System Management Homepage” on page 117.

- HP BladeSystem Integrated Management
- HP Configure or Repair Agents

Impact

You can now take advantage of a single tool for managing HP ProLiant, HP Integrity, and HP 9000 systems running Microsoft® Windows®, Linux, and HP-UX.

Compatibility

HP SIM version 4.2 supports the following operating systems:

- Central management server
  - HP-UX 11i v1
  - HP-UX 11i v2
  - HP-UX 11i v2 September 2004
  - Red Hat Enterprise Linux 2.1 Advanced Server, Update 4
  - Red Hat Enterprise Linux 2.1 Enterprise Server, Update 4
  - Red Hat Enterprise Linux 3 Advanced Server, Update 3
  - Red Hat Enterprise Linux 3 Enterprise Server, Update 3
  - SuSE Linux Enterprise Server 8.0, Service Pack 3
  - SuSE Linux Enterprise Server 9.0
  - Microsoft Windows 2000 Server, Service Pack 4
  - Microsoft Windows 2000 Advanced Server, Service Pack 4
  - Microsoft Windows 2000 and 2003 International Server-French, German, Italian, Japanese and Spanish

NOTE HP Systems Insight Manager can be installed on English, French, Italian, German, and Spanish versions of Microsoft Windows 2000 Server, and Windows 2003 Server. Database support also extends to English, French, Italian, German, and Spanish.

  - Microsoft Windows 2003 Server Standard Edition
  - Microsoft Windows 2003 Server Enterprise Edition
  - Microsoft Windows XP Professional, Service Pack 1
  - Microsoft Windows XP Professional, Service Pack 2

NOTE Japanese fully localized.

- Managed nodes

- HP-UX 11.0
- HP-UX 11i v1 (B.11.11)
- HP-UX 11i v2 (B.11.23)
- IntraNetWare 4.x
- IntraNetWare for Small Business
- Microsoft BackOffice Small Business Server
- Microsoft Small Business Server 2000
- Microsoft Windows 2000 Server
- Microsoft Windows 2000 Advanced Server
- Microsoft Windows 2000 Professional
- Microsoft Windows NT Server 4.0
- Microsoft Windows Server 2003
- Microsoft Windows Server 2003 Enterprise Edition
- Microsoft Windows XP Professional
- Novell NetWare 4
- Novell NetWare 5.x9
- Novell NetWare 6
- Novell NetWare Small Business Suite
- OpenVMS
- Red Hat Linux 7.3
- Red Hat Linux 8
- Red Hat Enterprise Linux 2.1 Advanced Server (IA-32 and Itanium®-based systems)
- Red Hat Enterprise Linux 2.1 Enterprise Server (IA-32 and Itanium®-based systems)
- Red Hat Enterprise Linux 3 Advanced Server (IA-32 and Itanium®-based systems)
- Red Hat Enterprise Linux 3 Enterprise Server (IA-32 and Itanium®-based systems)
- SCO OpenServer 5.0x
- SCO UnixWare 7
- SuSE Linux 7.0
- SuSE Linux 7.2
- SuSE Enterprise Server 8
- Tru64 UNIX

Performance

There are no performance issues.

Documentation

All HP SIM documentation is available on the Web and is bundled with the software.

- *HP Systems Insight Manager User and Installation Guide*

  This document provides information about installing and getting started using HP Systems Insight Manager. This guide includes an introduction to basic concepts, definitions, and functionality associated with HP Systems Insight Manager. This document is available at **http://docs.hp.com/** or **http://www.hp.com/go/hpsim/**.

- *HP Systems Insight Manager Help System*

  The help system provides a complete set of documentation for using, maintaining, and troubleshooting HP Systems Insight Manager. A PDF of the help system is available at **http://www.hp.com/go/hpsim/**. Additional information—including general product information, white papers, and support information—is available at **http://www.hp.com/go/hpsim/**.

Obsolescence

HP Systems Insight Manager 4.2 replaces Servicecontrol Manager 3.0.

HP-UX Peripheral Device Tool (pdweb)

The Peripheral Device Tool (pdweb), version B.11.23.04, is an easy-to-use, powerful peripheral device management solution delivering a Web-enabled graphical user interface (GUI).

The Peripheral Device tool allows you to do the following:

- view all available PCI/OLAR slots
- add, replace, and/or remove a card
- view devices and create device files
- view detailed information about cards, slots, and devices
- generate a Critical Resource Analysis (CRA) report detailing critical resources lost when a slot is powered down
- bring cards online
- light the LED of a specific slot

The Peripheral Device Tool is an easy-to-use GUI that steps system administrators through the entire process of card addition/replacement and it operates in a single-system environment.

Summary of Change

In this release, the handling of hostnames longer than eight characters has been added.[1] The *waconf* (1M) command has been updated to properly handle the forwarding URL when using the `autostart` option.

Impact

You now have the ability to properly configure the `autostart` feature of `waconf`.

Compatibility

There are no known compatibility issues.

Performance

There are no known performance issues.

Documentation

For further information, refer to the *pdweb* (1M) and *waconf* (1M) manpages. Additionally, the Peripheral Device tool GUI contains an on-line help facility to further assist you.

Also refer to the *Interface Card OL* Support Guide*, available at **`http://docs.hp.com`**.

Obsolescence

Not applicable.

Ignite-UX

The Ignite-UX product is an HP-UX administration toolset that helps you do the following:

- install HP-UX 11.0 and 11i v1 (B.11.11), v1.6 (B.11.22), v2 (B.11.23) on multiple PA-RISC and/or Intel Itanium®-based clients on your network;
- create custom install configurations, or golden images, for use in multiple installations on clients;
- recover HP-UX clients remotely;
- create custom recovery media including tape and CD-ROM;
- manage and monitor multiple client installation sessions.

1. See “Node and Host Name Expansion” on page 125.

Summary of Change

Ignite-UX, version C.6.2.*x* delivers the following:

- The “Creating Your Own Installation Media” chapter of the *Ignite-UX Administration Guide* has been updated to include the creation of installation DVDs. Additionally, the process of creating installation CDs has been updated.
- The Ignite-UX binaries are no longer linked to `libc.1` (known to work incorrectly with modern NSS/PAM technologies) to allow Ignite-UX to function correctly in an LDAP environment.
- The missing dependencies in the `BOOT-KRN-11-00` and `BOOT-KRN-11-22` filesets in Version C.6.1.*x* have been corrected so that the `Ignite-IA-11-00` and `Ignite-IA-11-22` bundles install properly.
- The `make_config` command has been enhanced to include a header that indicates the file name, creation time, and Ignite-UX version used to create the file.
- The support for reading `CUSTOM` files from the LIF area on all disks has been removed to improve the invocation time of the Ignite-UX user interface.
- The `save_config` command:
  - Was corrected to execute properly when both LVM and VxVM volumes are active on a system and one of the LVM logical volumes has a unmounted VxFS file system.
  - When a file system is CDFS, gives a `WARNING` message that the contents of this file system cannot be included in the back-up.
  - Handles the VxVM “lazy/alternate” device files correctly. However, VERITAS does not recommend the use of the “lazy” set of device files.
- Partial-system recovery archives can now be used to clone other systems.
- The Patch `PHKL_32037` delivered in the December 2004 HP-UX 11i v1 (11.11) HWE patch bundle, and included in the `IUX WINSTALL` kernel, could create a boot hang so it has been removed from the kernel in this release. The issue arises on the following HP servers if they contain a FXE graphics card (A4982A or A6150B):
  - server models (rp3410, rp3440, rp4440, rp5430, and rp5470)
- The postconfigure script, which formally produced an error for inactive volume groups during the recovery of a Serviceguard system, has been resolved.
- The patch for the *pax* (1) command for HP-UX v1 (B.11.11) was updated from `PHCO_28414` to the current patch `PHCO_30420`.
- The following commands have been added to enable functionality that will be included in a future release of Ignite-UX. They should not be used with the current release.
  - `/opt/ignite/binia/make_ipf_tape`
  - `/opt/ignite/lbinia/ansitape`
  - `/opt/ignite/lbinia/writetapedb`

  Modifications have been made to *make_tape_recovery* (1M) to enable new functionality for a future release.
- Ignite-UX manpages and online help are now available in Japanese.

NOTE For information about the changes included in the previous version of Ignite-UX, version C.6.1.*x*, see the *HP-UX 11i Version 1 December 2004 Release Notes*, available at **`http://docs.hp.com/en/oshpux11i.html#Release%20Notes`**.

Impact

There are no impacts other than those described previously.

Compatibility

There are no known compatibility issues.

Performance

There are no known performance issues.

Documentation

The Ignite-UX product Web site, which contains information and documentation, has been moved to **`http://www.docs.hp.com/en/IUX/`**.

The "Creating Your Own Installation Media" chapter of the *Ignite-UX Administration Guide* has been updated to include the creation of installation DVDs. Additionally, the process of creating installation CDs has been updated. A new example script, `make_media_install`, has been provided to simplify these tasks. The *Guide* can be found at **`http://docs.hp.com/en/oshpux11iv2.html#Ignite-UX`**.

The following manpages have been updated:

- *add_new_client* (1M)
- *ansitape* (1M)
- *auto_adm* (1M)
- *instl_adm* (1M)
- *instl_adm* (4)
- *instl_combine* (1M)
- *make_config* (1M)
- *make_depots* (1M)
- *make_net_recovery* (1M)
- *make_sys_image* (1M)
- *print_manifest* (1M)

Ignite-UX manpages and online help are now available in Japanese.

Obsolescence

Not applicable.

Kernel Tunable hdlpreg_hash_locks (Deprecated)

The kernel tunable `hdlpreg_hash_locks` is used to size a set of spinlocks used by the kernel for virtual object operations. To avoid memory consumption but reduce contention, a hashing algorithm is used to determine which lock from the pool will be used. This tunable sets the fixed size of the pool for the system, allowing more locks to be created for systems which experience performance degradation due to contention on the hashed locks.

Summary of Change

The kernel tunable `hdlpreg_hash_locks` has been deprecated. This tunable will be obsoleted (removed) post HP-UX 11i v2.

Changes to releases after HP-UX 11i v2 will remove the need for the spinlocks and the hashed pool, removing the need for this tunable.

Impact

There is no change for the customer in this release. This is a warning of an upcoming removal of the kernel tunable `hdlpreg_hash_locks`.

Compatibility

There is no compatibility change for this release.

Performance

There is no performance impact for this change.

Documentation

For further details and values, refer to the *hdlpreg_hash_locks* (5) manpage.

Obsolescence

The kernel tunable `hdlpreg_hash_locks` has been deprecated. This tunable will be obsoleted (removed) post HP-UX 11i v2.

Node and Host Name Expansion

The optional Node and Host Name Expansion (`NodeHostNameXpnd`) product bundle, revision B.11.23.01, provides you with the ability to set node and host names up to 255 bytes.

This product is available on Software Pack (SPK) for HP-UX 11i v2 May 2005. (For more information about SPK, see “Software Pack (Optional HP-UX 11i v2 Core Enhancements)” on page 28.)

Summary of Change

Without NodeHostNameXpnd, node names are limited to 8 bytes, and host names are limited to 64 bytes. With NodeHostNameXpnd, node and host names can be expanded to 255 bytes each.

Impact

This product allows you to set longer node and host names for your HP-UX 11i v2 systems.

Compatibility

If you choose to load only the May 2005 version of this feature, without doing a complete update to the May 2005 version of HP-UX 11i v2, you must first load the September 2004 version of HP-UX 11i v2.

The default HP-UX system parameters ensure that node and host names do not exceed the compatible lengths of 8 and 64 bytes, respectively. The NodeHostNameXpnd product bundle includes a new system tunable parameter by which you can enable the system to accept node and host names up to 255 bytes in length.

Setting node and host names longer than 8 or 64 bytes, respectively, can cause some applications that use the node and/or host names to exhibit anomalous behavior or fail. HP strongly recommends that you understand all NodeHostNameXpnd documentation (manpages and the “Node and Host Name Sizes on HP-UX” whitepaper) before enabling the system to accept longer names.

The whitepaper “Node and Host Name Sizes on HP-UX” can be found at /usr/share/doc/NodeHostNameSize.pdf following installation of the NodeHostNameXpnd optional product bundle. The whitepaper can also be found on the Software Pack media at /DOCS/NodeHostNameXpnd/NodeHostNameSize.pdf.

The NodeHostNameXpnd product bundle is supported only on the HP-UX 11i v2 operating system.

See also “HP Serviceguard” on page 113.

Performance

This product does not affect system performance.

Documentation

The following manpages, and possibly others, have been updated with the NodeHostNameXpnd product bundle:

- *uname* (1)
- *setuname* (1M)
- *hostname* (1)
- *uname* (2)

- *setuname* (2)
- *gethostname* (2)
- *sethostname* (2)
- *sysconf* (2)

The following manpages, and possibly others, are new with the bundle:

- *nodehostnamesize* (5)
- *enable_nodehostnamexpnd* (5)

The `NodeHostNameXpnd` bundle includes the whitepaper "Node and Host Name Sizes on HP-UX," which can be found at `/usr/share/doc/NodeHostNameSize.pdf` following installation of the bundle. The whitepaper can also be found on the Software Pack media at `/DOCS/NodeHostNameXpnd/NodeHostNameSize.pdf`.

Also see the following related information in this *Release Notes* document:

- "Software Pack (Optional HP-UX 11i v2 Core Enhancements)" on page 28
- "HP Serviceguard" on page 113
- "The hostname Command" on page 166
- "The setuname Command" on page 167
- "The uname Command" on page 168
- "Common Desktop Environment (CDE)" on page 184

Obsolescence

Not applicable.

Online Diagnostics

Online Diagnostics (`OnlineDiag` bundle) consists of the following products:

- EMS Hardware Monitors

  EMS Hardware Monitors allow you to monitor the operation of a wide variety of hardware products and be alerted immediately if any failure or other unusual event occurs.

- Support Tools Manager (STM)

  STM provides a set of online support tools, enabling you to verify and troubleshoot system hardware, and to examine system logs.

Summary of Change

For May 2005, Online Diagnostics include the following:

- Support for HP-UX Virtual Partitions (vPars)[1] on Itanium®-based platforms.

- Support for the Node and Host Name Expansion[1] product on both PA-RISC and Itanium®-based platforms.
- Support for Information tools for PCI interfaces on Itanium®-based platforms.
- Support for complete vPar CPU migration on PA-RISC platforms.
- Support for Machine Check Analyzer (MCA) error handling on Itanium®-based platforms.

Impact

- CPUs which have been migrated from other virtual partitions will be displayed on the `cstm` map only when you explicitly run the `ioscan` command.
- On PA-RISC systems running vPars, the `cstm` map with the `OnlineDiag` bundle shows only the resources allocated to the local virtual partition and to the vPar monitor (i.e., resources not allocated to any of the virtual partitions).
- All `cstm` tools will function only on resources that belong to the current partition.
- On vPars, the PA-RISC CPU monitor no longer retains the deactivated faulty CPU within the partition upon the Dynamic Processor Resilience (DPR) action. Now, the deactivated faulty processor will be deleted from the virtual partition.
- The following new events have been added to inform the Dynamic Processor Resilience (DPR) actions appropriately in addition to the existing DPR events:
  - Event 100827
  - Event 100828
  - Event 100829
  - Event 100633
  - Event 100634
  - Event 100635
  - Event 100636
  - Event 100637
  - Event 100638.

  Please refer the following URL for the definition of these new events:
  `http://wojo.rose.hp.com/hpux/onlinedocs/diag/ems/lpmc_em.htm`
- On vPars, the system info tool displays information regarding all the processors in the hard partition and also indicates which processors belong to the current virtual partition.
- Also see “HP-UX Virtual Partitions” on page 105 and “Node and Host Name Expansion” on page 125.

1. See “HP-UX Virtual Partitions” on page 105.
1. See “Node and Host Name Expansion” on page 125.

Compatibility

In May 2005, the `OnlineDiags` bundle supports vPar version A.04.01.

Performance

There are no known performance issues.

Documentation

For further information, see the following documents, available at **`http://www.docs.hp.com/en/diag.html`**:

- EMS documentation
  - *Data Sheets*
  - *EMS Hardware Monitors Quick Reference Guide*
  - *EMS Hardware Monitors User's Guide*
  - *EMS HW Monitors for Hitachi Systems Running HP-UX*
  - *Event Descriptions*
  - *Frequently Asked Questions (FAQs)*
  - *Multiple-View (Predictive-Enabled) Monitors*
  - *Overview*
  - *Quick Start: Anatomy of a Monitor (Controlling and Learning About Monitors)*
  - *Requirements and Supported Products*
  - *Release Notes*
- STM documentation
  - *Frequently Asked Questions*
  - *Quick Reference*
  - *Release Notes*
  - *STM Online Help*
  - *STM Overview*
  - *STM Tutorial*

Obsolescence

Not applicable.

Quality Pack Patch Bundle

The Quality Pack patch bundle consists of two bundles: the Base Quality Pack bundle and the Applications Quality Pack bundle. The Base Quality Pack bundle includes all stable, defect-fix patches for the Core OS, graphics, and key networking drivers. The Applications Quality Pack bundle includes all stable, defect-fix patches for HP-UX Operating Environment (OE) applications.

Summary of Change

In March 2004, the first ever Quality Pack (QPK) patch bundle for HP-UX 11i v2 (B.11.23) was delivered. In September 2004, HP-UX 11i v2 was updated to support both PA-RISC and Itanium®-based systems, as opposed to the initial release of HP-UX 11i v2, which only supported Itanium®-based systems. HP-UX 11i v2 September 2004 was delivered via updated Operating Environments (OEs) and the BUNDLE11i patch bundle. All patches from the March 2004 Quality Pack were superseded by dual-architecture patches (that is, patches for both Itanium®-based and PA-RISC platforms) which were placed in BUNDLE11i; thus, there was not a Quality Pack in the September 2004 release of HP-UX 11i v2. The May 2005 release of HP-UX 11i v2 will once again contain the Quality Pack, as will future releases of HP-UX 11i v2.

Impact

There are no impacts, other than that described previously.

Compatibility

If you choose to load only the May 2005 version of the Quality Pack, without doing a complete update to the May 2005 version of HP-UX 11i v2, you must first load the September 2004 version of HP-UX 11i v2.

Performance

There are no known performance issues.

Documentation

There is no further documentation.

Obsolescence

Not applicable.

Software Distributor

Software Distributor (SD) is the HP-UX administration tool set used to deliver and maintain HP-UX operating systems and layered software applications. Delivered as part of HP-UX, SD can help you do the following:

- Manage your OS, patches, and application software on HP-UX systems.
- Organize, standardize, and distribute software to your customers.
- Handle complex delivery challenges such as testing complete solutions for the commercial and technical desktop.

Summary of Change

This release has been updated to incorporate a new version of the `gzip` command that handles files larger than 2GB.

CAUTION Use caution when using `gzip` on files larger than 2GB, since the older `gzip` command delivered with HP-UX cannot read them.

The `swpackage` command in this release has the ability to create a serial depot larger than 2GB, only when the new `allow_large_serial_depot` option is set to *TRUE*. In this release, all SD commands that can read serial depots (such as `swpackage`, `swlist`, `swcopy`, and `swinstall`) can now read a serial depot larger than 2GB.

CAUTION Use caution when creating serial depots larger than 2GB since older versions of SD cannot read them.

The Software Distributor product contained in this HP-UX release is planned to be available for download from the Web. See **`http://www.docs.hp.com/en/SD/`** for availability.

Impact

There are no impacts beyond added capability and increased performance.

Compatibility

SD is backward compatible.

Performance

There are no known performance issues.

Documentation

The *Software Distributor Administration Guide* has been updated to reflect all changes. Visit **http://www.docs.hp.com/en/SD/** for this and other documentation.

Obsolescence

Not applicable.

Software Package Builder

Software Package Builder (SPB) provides a visual method to create and edit software packages using the HP-UX Software Distributor (SD) package format. Once software is packaged, it can easily be transferred to a distribution medium, mass produced, and installed by administrators.

The SPB graphical user interface (GUI) provides a window into the software package structure, showing attributes that can be set for each package element. SPB dynamically loads packaging policies and validates software package attributes against these policies. The SPB command line interface (CLI) can also perform validation of software package attributes against policies and supports automated edits to the software package specification.

Summary of Change

SPB has been updated with product enhancements.

Impact

Currently, most customers do not choose to package software in SD format due to its complexity. SPB should significantly reduce your learning curve and the time required to package software. By packaging software in SD format, you gain the ability to easily tell what software is installed on the system, making software management easier.

Compatibility

SPB uses Java 1.4.0 or greater.

Performance

CAUTION Java Swing behavior may cause navigational inconsistencies when running SPB through an X emulator. If your mouse click behavior setting is too slow, it can prevent SPB from buffering all mouse clicks. This could potentially lead to data loss. The SPB product

release notes contain a detailed procedure for correcting this performance issue. It is highly recommended that you complete the procedure prior to using SPB. For this and other troubleshooting topics, refer to the SPB Help system.

Documentation

For further information on Software Package Builder, see the following:

- the spb manpage, *spb* (1M)
- the SPB Web site at **http://www.docs.hp.com/en/SPB/**
- the *Software Package Builder 2.0 User's Guide* found at **http://www.docs.hp.com**

Obsolescence

Not Applicable.

Update-UX

The update-ux command updates the HP-UX operating system to a newer version.

Summary of Change

Update-UX has been updated to reflect defect fixes. There are no new features or functionality in update-ux.

Impact

There are no impacts.

Compatibility

There are no known compatibility issues.

Performance

There are no known performance issues.

Documentation

For further information see the following:

- The latest *HP-UX 11i v2 Installation and Update Guide*, available at **http://docs.hp.com/en/oshpux11iv2.html**
- The *update-ux* (1M) manpage

Obsolescence

Not applicable.

Upper Layer Module (ULM) Services (Deprecated)

Upper Layer Module (ULM) Services is a set of kernel interfaces that allow upper layer modules to intercept IO requests to IO devices.

Summary of Change

ULM Services has been deprecated. It will be obsolete starting with HP-UX 11i v3.

Impact

Starting from HP-UX 11i v3, `/usr/include/sys/ulm.h` will not be delivered. The following exported kernel interfaces will not be present:

- `ulm_register`
- `ulm_unregister`

Compatibility

ULM is only used by the HP StorageWorks Auto Path product. Auto Path will not be supported on HP-UX 11i v3, so no compatibility problems will be seen.

Performance

There is no effect of performance.

Documentation

The HP StorageWorks Auto Path documentation contains information about ULM Services. See the links for the HP StorageWorks Auto Path documentation provided at the HP StorageWorks site at **`http://hp.com/go/storage`**.

For further information on application availability, see the Application Availability Matrix at **`http://hp.com/go/softwareinfo/MATRIX`**.

Obsolescence

ULM Services will be obsoleted in HP-UX 11i v3.

6 Disk and File Management

What is in This Chapter?

This chapter covers directory, file system, and disk management, including the following:

32 Terabyte File System Support

Support for VxFS 3.5 file systems of up to 32 TB has now been certified. Files can be a maximum of 2 TB. File systems larger than 2 TB must be created on a VERITAS Volume Manager volume.

For further information on VxFS, see “VERITAS File System (HP JFS / HP OnlineJFS)” on page 138.

HFS (Deprecated)

HFS is HP-UX’s implementation of UFS.

HP wants to give advanced warning to customers that the HFS (also known as UFS) file system type is now deprecated. It will still be installed and supported for several more releases, but it will be removed from the OS in a future release, to be determined. You are encouraged to start migrating your data from HFS to VxFS (VERITAS File System).

HFS is not obsolete in this release of HP-UX 11i. In a future HP-UX release, the HFS file system type will not be available with the base OS system and will be generally unsupported (for new releases). Support will continue for earlier releases which included HFS in the base product.

HP CIFS Client

CIFS is the native networking protocol on Microsoft Windows operating systems. The HP CIFS products for HP-UX provide a wide range of integration strategies for HP-UX and Windows. The HP CIFS Client enables the HP-UX host to mount directories shared by remote CIFS servers (Windows, HP-UX, and other server platforms on which CIFS has been implemented). The HP CIFS Server enables the HP-UX host to provide access to its own shared directories by remote CIFS clients (Windows, HP-UX, and other CIFS clients); it emulates Windows file and print services.

With these products, in a heterogeneous Windows and HP-UX network, any system can be a client or server to any other system.

The HP CIFS Client bundle also includes PAM-NTLM, a “pluggable authentication module” that allows HP-UX logins to be authenticated by a centralized service on a CIFS domain.

Summary of Change

The HP CIFS Client A.01.09.03 contains only defect fixes. See the *HP CIFS Client A.01.09.03 Release Notes* (part number B8724-90065), available at **http://docs.hp.com**, for detailed information.

Impact

This new version of HP CIFS Client provides defect fixes.

Compatibility

There are no known compatibility issues.

Performance

There are no known performance issues.

Documentation

For more information, refer to the following documents, available at **http://docs.hp.com**:

- *HP CIFS Client Administrator's Guide*
- *HP CIFS Client A.01.09.03 Release Notes* (part number B8724-90065)

Obsolescence

Not applicable.

HP CIFS Server

The HP CIFS Server (product number B8725AA) provides HP-UX with a distributed file system based on the Microsoft Common Internet File System (CIFS) protocols. It supports file sharing, printer access and authentication services to CIFS clients, including Microsoft Windows NT, XP, and 2000, and HP-UX machines running HP CIFS Client software.

Summary of Change

HP CIFS Server A.01.11.04 includes the following changes:

- HP CIFS Server is now based on Samba 2.2.12.
- Two security vulnerabilities patches have been incorporated.

Impact

This version of CIFS Server offers enhanced security.

Compatibility

There are no known compatibility issues.

Performance

There are no known performance issues. The performance of HP CIFS Server A.01.11.04 is comparable with its previous version.

Documentation

For further information, refer to the documents listed at **`http://www.docs.hp.com/en/netcom.html#HP%20CIFS`**.

Obsolescence

Not applicable.

VERITAS File System (HP JFS / HP OnlineJFS)

The VERITAS File System 3.5 (HP JFS / HP OnlineJFS) product is an extent-based, intent-logging file system. This product is particularly geared toward UNIX environments that require high performance and availability, and that deal with large volumes of data. The VERITAS File System (VxFS) 3.5 product is the next generation of the product known as HP OnlineJFS/JFS 3.3.

VxFS 3.5 has been released as the default file system for HP-UX 11i v2 operating system. VxFS 3.5 is integrated as part of core HP-UX 11i v2 and is installed by default.

The *base* VERITAS File System 3.5 (HP JFS 3.5) is a new version of the base journaled file system for HP-UX 11i and is available as part of HP-UX 11i v2, at no extra cost.

The *full* VERITAS File System 3.5 (HP OnlineJFS 3.5) enables advanced file system features and should be ordered as a separate product.

NOTE

The terms base VERITAS File System 3.5, HP JFS 3.5, and base VxFS are used interchangeably in this document.

In addition, the terms full VERITAS File System 3.5, HP OnlineJFS 3.5, and full VxFS are used interchangeably in this document.

All of these terms may appear in other related VERITAS File System (HP OnlineJFS/JFS 3.5) documentation.

Summary of Change

Starting with the May 2005 release, HP OnlineJFS provides permanent licenses for the product.

Support for file systems of up to 32 TB has now been certified. Files can be a maximum of 2 TB. Files systems larger than 2 TB must be created on a VERITAS Volume Manager volume.

Machines Affected or No Longer Supported

Version 3.5 is the last release to support the VxFS Version 2 and Version 3 disk layouts. You can still mount these older disk layout versions, but you cannot create them using the VERITAS `mkfs` command.

VxFS 3.5 on HP-UX 11i v2 supports the following disk layout versions:

Table 6-1 Supported Disk Layout Versions

Disk Layout Version	Can Create File System	Can Mount File System
2 and 3	No (obsoleted)	Yes
4 and 5	Yes	Yes

Impact

Customers of HP OnlineJFS 3.5 and later will now get a license key that does not expire.

With the latest version of OnlineJFS (May 2005) you should use the `vxlicinst` and `vxlicrep` commands for obtaining information on the license key. You should not use the `vxlicense` command as it does not return the newly installed license details.

Compatibility

There are no known compatibility issues.

Performance

There are no known performance issues.

Documentation

This release includes manpages as part of the VERITAS File System 3.5 (HP Online JFS/JFS 3.5) product.

For further information, see the *VERITAS File System 3.5 (HP Online JFS/JFS 3.5) Administrator's Guide*, available at **`http://docs.hp.com`**.

Obsolescence

- VxFS 3.5 on HP-UX 11i v2 is a new release. It doesn't obsolete VxFS 3.5 on HP-UX 11i v1.
- The *`vx_fancy_readahead`* tunable is obsolete and has been replaced by the file system tunable *`read_ahead`*. Additionally, the following tunables are obsolete:

  - — *vx_ncsize*
  - — *vxfs_ra_per_disk*
  - — *vx_max_ra_kbytes*
- The *labelit* (1M) command is obsolete starting this release.
- The *fscat* (1M) command is also obsolete.

7 Internet and Networking

What is in This Chapter?

This chapter describes new and changed Internet and networking functionality supported by the HP-UX 11i v2 release, including the following:

HP WBEM Services for HP-UX

Web-Based Enterprise Management (WBEM) (**http://www.dmtf.org/**) is a platform- and resource-independent Distributed Management Task Force (DMTF) standard that defines both a common model (i.e., description) and protocol (i.e., interface) for monitoring and controlling a diverse set of resources.

The HP WBEM Services for HP-UX product is the HP-UX implementation of the DMTF WBEM standard. Version A.02.00.07 is currently being released.

This product is based on The Open Group (TOG) Pegasus Open Source Software (OSS) project (**http://www.openpegasus.org/**).

Summary of Change

In addition to numerous defect fixes, version A.02.00.07 of HP WBEM Services for HP-UX introduces support for CIM Process Indications as defined by the DMTF WBEM Specification.

Impact

There is no significant change with the exception of access to the new feature listed above.

Compatibility

There are no known compatibility issues. All well-behaved WBEM clients and providers compiled with previous releases of HP WBEM Services for HP-UX are expected to interoperate with this new version.

Performance

There are no significant performance changes with this release of the product.

Documentation

For further information, see the following:

- Manpages are packaged with the product and are placed in the directory `/opt/wbem/share/man`.
- The WBEM Web site is available at **www.hp.com/go/wbem**.
- The following documents are available at **http://www.docs.hp.com/hpux/netsys/index.html**:
  - *HP WBEM Services for HP-UX and Linux System Administrator's Guide*
  - *HP WBEM Services Version A.02.00 Release Notes* (HP-UX 11i v1, HP-UX 11i v2, Linux)

Obsolescence

Not applicable.

HP-UX Web Server Suite

The HP-UX Web Server Suite v2.11 is a free product available for the HP-UX platform. It contains key software products necessary to deploy, manage, and implement a mission critical Web server. The following components can be separately installed:

- HP-UX Apache-based Web Server (see page 145)
- HP-UX Tomcat-based Servlet Engine (see page 146)
- HP-UX Webmin-based Admin (see page 146)
- HP-UX XML Web Server Tools (unchanged for May 2005)

Installation

The following installation changes have been made in the initial HP-UX 11i v2 release (October 2003):

- Products are now separately installable into their own directory under `/opt/hpws/`.

NOTE Shared documentation, such as Migration Guides and FAQs, are located at `/opt/hpws/hp_docs` and are included in the HP-UX Webmin-based Admin product.

Table 7-1 Locations of Apache Products

Product	Location
HP-UX Apache-based Web Server	`/opt/hpws/apache`
HP-UX Tomcat-based Servlet Engine	`/opt/hpws/tomcat`
HP-UX Webmin-based Admin	`/opt/hpws/webmin`
HP-UX XML Web Server Tools	`/opt/hpws/xmltools`

- After installing, use the `README` and `GETTING_STARTED` documents for details on prerequisites and starting each component. The `README` is located at `/opt/hpws/README`. The `GETTING_STARTED` document is found in multiple locations under each component directory (i.e., `/opt/hpws/apache/GETTING_STARTED`).
- Products do *not* start automatically after installation. Previously, Apache would try to start on port 80.

- For updates, new configuration files are delivered in the standard location if the existing one is unchanged or nonexistent. Otherwise, they are delivered in an alternate location, allowing the system administrator to incorporate the changes individually. Detailed information can be found in the `GETTING_STARTED` document.
- Filenames and variables have changed for the Resource Configuration (RC) files, located in the `/etc/rc.config.d/` directory.

Table 7-2 Resource Configuration Filenames

Product	Filename
HP-UX Apache-based Web Server	`hpws_apacheconf`
HP-UX Tomcat-based Servlet Engine	`hpws_tomcatconf`
HP-UX Webmin-based Admin	`hpws_webminconf`
HP-UX XML Web Server Tools	`hpws_xmltoolsconf`

Installation Requirements

The following requirements must be fulfilled before certain components/features will work. See the following documentation section for the location of further information.

- Building Apache DSOs using `apxs` depends on Perl installed at `/opt/perl/bin/perl`.
- Fast Perl scripts and Apache modules written in Perl require `mod_perl` to be configured and Perl 5.8.0 (available with the Operating Environment) to be installed.
- HP-UX Tomcat-based Servlet Engine and HP-UX XML Web Server Tools require the HP-UX Software Developer's Kit (SDK) for Java 1.3 or later. If your Web application uses Java Server Pages (JSPs) then you will also need the SDK for Java 1.3 or later so you can compile the JSPs.
- HP-UX Webmin-based Admin depends on Perl 5 or later.

Documentation

Bundled documentation (Release Notes, Admin Guides, User Guides, Migration Guides and FAQs) now install into `/opt/hpws/hp_docs`. These documents can be accessed through HP-UX Apache-based Web Server, HP-UX Tomcat-based Servlet Engine, and HP-UX Webmin-based Admin by browsing to **`http://yourserver.com/hp_docs`** on the appropriate port (i.e., for Webmin on port 10000, the URL should be: **`http://yourserver.com:10000/hp_docs`**).

NOTE Shared documentation, such as Migration Guides and FAQs, are located at `/opt/hpws/hp_docs` and are included in the HP-UX Webmin-based Admin product.

The latest information can also be found on the product Web site:
`http://www.hp.com/go/webserver`

HP-UX Apache-based Web Server

HP-UX Apache-based Web Server combines Apache with numerous popular modules from other Open Source projects and provides HP value-added features for the HP-UX platform:

- Scripting capabilities: PHP, `mod_perl`, CGI
- Content management: WebDAV, FrontPage Server Extensions 2002
- Security: authentication through an LDAP server, Webproxy, Chrooted environment, SSL and TLS support

Summary of Change

HP-UX Apache-based Web Server has been updated to v.2.0.53.00 as primarily a security and bug fix release. For details of the following changes, refer to the *HP-UX Web Server Suite Release Notes*, available `/opt/hpws/hp_docs` or at the product Web site at **`http://www.hp.com/go/webserver`**:

- Apache upgraded to 2.0.53, plus defect fixes
- `mod_perl 1.99_10` now using Perl 5.8.2
- Supports the Node and Host Name Expansion product[1]
- Other enhancements, as described in the *HP-UX Web Server Suite Release Notes*

Impact

There are no impacts other than those listed previously.

Compatibility

This release is binary-compatible with Apache 2.0.50 and greater. All the modules compiled with Apache 2.0.50 or greater will continue to work with this version since the Apache API has not changed.

Performance

Performance is similar to previous HP-UX Apache-based Web Server releases.

Documentation

See “Documentation” on page 144.

Obsolescence

Not applicable.

1. See “Node and Host Name Expansion” on page 125.

HP-UX Tomcat-based Servlet Engine

HP-UX Tomcat-based Servlet Engine provides customers with Java-based extensions for dynamic content generation via Servlets and JavaServer Pages (JSPs).

Summary of Change

This release of HP-UX Tomcat-based Servlet Engine v4.1.29.04 is primarily a bug fix release, with Commons-DBCP upgraded to 1.2.1.

Impact

HP-UX Tomcat-based Servlet Engine v4.1.29.04 provides an open source security bug fix.

Compatibility

There are no known compatibility issues.

Performance

There are no known performance issues.

Documentation

See “Documentation” on page 144.

Obsolescence

Not applicable.

HP-UX Webmin-based Admin

HP-UX Webmin-based Admin is a configuration and administration graphical user interface (GUI) with extensive enhancements for the HP-UX Apache-based Web Server.

Summary of Change

The May 2005 release of HP-UX Webmin-based Admin is primarily a security and bug fix release. Webmin has been upgraded to version 1.070.03.

Please refer to the *HP-UX Web Server Suite Release Notes* for details. (To learn how to locate this document, see “Documentation” on page 144.)

Impact

There are no impacts.

Compatibility

There are no compatibility issues.

Performance

There are no performance issues.

Documentation

See “Documentation” on page 144.

Obsolescence

Not applicable.

Netscape Directory Server for HP-UX

The Netscape Directory Server (NDS) for HP-UX is a powerful and scalable distributed directory server based on the industry-standard Lightweight Directory Access Protocol (LDAP). NDS provides the way to build a centralized and distributed data repository. It uses the directory services as a common, network-accessible location to store shared data such as user and group account, server identification, and access control information.

In addition, NDS can be extended to support your entire enterprise with a global directory service that provides centralized management of all your enterprise's resource information.

Summary of Change

The Netscape Directory Server B.06.11.30.001 for HP-UX provides defect fixes, as well as a minor packaging change for Software Distributor (SD). For more information about these fixes, refer to the *Netscape Directory Server B.06.11.30 for HP-UX Release Notes*, available in the “Internet and Security Solutions” section at **http://docs.hp.com**.

Impact

This new version of Netscape Directory Server contains defect fixes, as well as a minor packaging change.

Compatibility

There are no known compatibility issues.

Performance

There are no known performance issues.

Documentation

For a more detailed description of the changes, please refer to the following documentation in the “Internet and Security Solutions” section at **http://docs.hp.com**:

- *Netscape Directory Server B.06.11.30 for HP-UX Release Notes* (E1204, part number J4258-90022)
- *Netscape Directory Server 6.1 Configuration, Command, and File Reference*

- *Netscape Directory Server 6.1 Deployment Guide*
- *Netscape Directory Server 6.1 Administrator's Guide*
- *Netscape Directory Server 6.1 Schema Reference*
- *Netscape Directory Server 6.1 Plug-In Programmer's Guide*

Obsolescence

Not applicable.

8 Security

What is in This Chapter?

This chapter covers changes and enhancements to security services, including the following:

HP-UX 11i Security Containment

HP-UX 11i Security Containment provides the next generation of security features including the following:

- Compartments
- Fine-grained privileges
- HP-UX Role-Based Access Control (HP-UX RBAC)
- HP-UX Auditing System
- Standard Mode Security Extensions

HP-UX 11i Security Containment is only available on the Web at **`http://software.hp.com`** and is expected to release in the near future.

Summary of Change

- Compartments provide isolation between unrelated resources to prevent damage to a whole system if a compartment is penetrated. Applications configured in compartments have restricted access to resources outside their configured compartments.
- Fine-grained privileges let you grant processes only the privileges needed for a specific task, only for the time needed to complete the task. Privilege-aware applications can elevate their privileges to the required level for an operation and lower it after the operation is complete.
- HP-UX Role-Based Access Control (HP-UX RBAC) lets you group common or related tasks into roles. Once roles are created, you assign users to a role or set of roles that enable them to run the commands defined by those roles. RBAC allows users to perform tasks previously requiring root privileges, without granting the user full root privileges.
- HP-UX Auditing System,[1] with the installation of the Standard Mode Security Extensions (SMSE) product, provides the selective recording of events for analysis and detection of security breaches. Security containment makes auditing features available on standard mode systems. Auditing was previously available only in trusted mode.
- Standard Mode Security Extensions (SMSE)[2] (available on Software Pack) include several security attributes previously set on a system-wide basis, that can now be configured on a per-user basis. A new user database stores per-user information to support security features such as password history, auditing, and time-of-day login restrictions. This per-user information allows you to configure security features uniquely for each user.

1. See “HP-UX Auditing System” on page 152.
2. See “HP-UX Standard Mode Security Extensions” on page 159.

Impact

By default, none of the features is active upon installation. You must manually activate containment features before use.

Compatibility

When configuring Security Containment, you must ensure that the resources and permissions needed by the applications you wish to run are consistent with the Security Containment settings you chose. Failure to do so can result in application degradation or malfunction.

Performance

There may be a small performance degradation after manually activating the new features.

Documentation

- Refer to the following documents, available at **`http://docs.hp.com`**, for more information about HP-UX 11i Security Containment components and features:
  - *HP-UX Role-Based Access Control B.11.23.02 Release Notes*
  - *HP-UX Standard Mode Security Extensions Release Notes*
  - *HP-UX 11i Security Containment Administrator's Guide*
  - *HP-UX 11i Security Containment Release Notes*
- Further information can be found in the following manpages:
  - *privileges* (3)
  - *privileges* (5)
  - *compartments* (4)
  - *compartments* (5)
  - *rbac* (5)
  - *audit* (5)
  - *security* (4)
  - *userdb* (4)

  In addition, many system call manpages have been revised to reflect support for fine-grained privileges.
- See also “HP-UX Auditing System” on page 152 and “HP-UX Standard Mode Security Extensions” on page 159.

Obsolescence

Not applicable.

HP-UX Auditing System

The purpose of the HP-UX Auditing System is to record security relevant events for analysis. This information helps you detect repeated attempts to breach security. Thus, the HP-UX Auditing System acts as a deterrent against system abuses and exposes potential security weaknesses.

Summary of Change

Previously, the HP-UX Auditing System was only supported on systems converted to trusted mode. By installing the Standard Mode Security Extensions bundle[1] (available on Software Pack), you can perform system audits in standard mode. The following enhancements are included:

- A more flexible form of audit IDs (called “audit tags”), uniquely identifies each login session and responsible user.
- Two new `libsec` routines, `getauduser()` and `setauduser()`, are similar to the `getaudid()` and `setaudid()` system calls. The new `libsec` routines manage the audit tags. Refer to the *getauduser* (3), *setauduser* (3), and *audit* (5) manpages.
- For applications that use PAM for authentication, the `pam_hpsec` PAM module transparently handles the per-session audit information. Refer to the *pam_hpsec* (5) manpage.
- The audit commands `audsys`, `audisp`, and `audevent` now support auditing in standard mode. Refer to the *audsys* (1M), *audisp* (1M), and *audevent* (1M) manpages.
- Commands like `login`, `cron`, and `ftpd` can now do self-auditing in standard mode.
- Standard mode audit user selection information is stored in a per-user configuration user database (which is similar to `/tcb` in trusted mode). Refer to the *userdb* (4) manpage.
- The `userdbset` command specifies which users are to be audited in standard mode. This functionality is equivalent to the `audusr` command in trusted mode. Refer to the *userdbset* (1M) manpage.

Impact

Customers who desire to have the auditing feature in standard mode can install the `StdModSecExt` bundle, which is available via Web release and on the HP-UX 11i v2 May 2005 Software Pack.[2] The `StdModSecExt` bundle contains the Standard Mode Security Extensions.

Compatibility

There are no behavior changes visible to a customer who is using auditing in trusted mode.

1. See “HP-UX Standard Mode Security Extensions” on page 159.
2. See “Software Pack (Optional HP-UX 11i v2 Core Enhancements)” on page 28 and “HP-UX Standard Mode Security Extensions” on page 159.

Performance

There are no known performance issues.

Documentation

For further information, refer to the following manpages:

- *audit* (5)
- *audusr* (1M)
- *getauduser* (3)
- *setauduser* (3)
- *pam_hpsec* (5)
- *pam.conf* (4)

See the following elsewhere in this document:

- "Software Pack (Optional HP-UX 11i v2 Core Enhancements)" on page 28
- "HP-UX 11i Security Containment" on page 150
- "HP-UX Standard Mode Security Extensions" on page 159

Also refer to the *HP-UX Standard Mode Security Extensions Release Notes* at **http://docs.hp.com**.

Obsolescence

Not applicable.

HP-UX Host Intrusion Detection System

HP-UX Host Intrusion Detection System (HIDS) Release 3.1 is a host-based HP-UX security product for HP computers running HP-UX 11i. HP-UX HIDS Release 3.1 enables security administrators to proactively monitor, detect, and respond to attacks targeted at specific hosts. Since there are many types of attacks that can bypass network-based detection systems, HP-UX HIDS Release 3.1 complements existing network-based security mechanisms, bolstering enterprise security.

Summary of Change

Since the September 2004 release of HP-UX 11i v2, HIDS has been updated to version 3.1. Changes include the following:

- HIDS Release 3.0 (initially delivered via the Web at **http://software.hp.com**):
  - Performance improvement: Significant reduction in CPU consumption and better performance throughput by the HP-UX HIDS Release 3.0 `idscor` correlator process.

  - — Template consolidation and property changes in HIDS Release 3.0: Prior to this version of HIDS, the functionality of the “Monitor Logins/Logouts” template and the “Monitor Start of Interactive Sessions” overlapped each other. This overlapping functionality has been rectified in HIDS Release 3.0 and the two templates have been consolidated into a single template called the “Monitoring Logins/Logouts” template.
  - — Filtering of alerts: HP-UX HIDS provides a number of new template properties for better filtering of unwanted alerts.
  - — Reducing alert volume: The default template setting for out-of-the-box configurations has been fine-tuned to reduce the alert volume.
  - — Automating HP-UX HIDS deployment and management processes: A command-line interface tool, `idsadmin`, is supported to automate the HIDS deployment and management process.
  - — Alert Description: HP-UX HIDS provides descriptive alert messages to assist in developing more comprehensive filtering within template properties.
  - — Migration Utilities: New conversion utilities are available to migrate HP-UX HIDS Release 2.*x* customizations to the new HP-UX HIDS Release 3.0 template format to reduce deployment efforts.
  - — Using OpenSSL for securing agent-admin communication: HP-UX HIDS now has a dependency on the OpenSSL product[1] available in the HP-UX Operating Environments (as well as at **`http://software.hp.com`**). The main benefit is that any SSL-related vulnerability fixes can be made readily available to HP-UX HIDS customers without the need for a new release of HIDS.
  - — Reducing System Reboot: The HP-UX HIDS bundle has been split into two products, namely `IDS` and `IDS-KERN`, to reduce the probability of a system reboot for future HP-UX HIDS updates.

- Version 3.1 (delivered both on the Web and with the May 2005 release of HP-UX):

  HP-UX HIDS Release 3.1 contains fixes to a number of defects reported against v3.0, as well as a number of enhancements:

  - — Defect fixes are mainly focused on addressing issues with the `idscor` process terminating abnormally.
  - — Enhancements include better filtering capabilities and additional alert information in order to facilitate more automated response.

Impact

HP-UX HIDS Release 3.0 offers better performance and CPU utilization, many enhancements as well as defect fixes. HP-UX HIDS Release 3.1 is a maintenance release containing defect fixes, as well a few enhancements. To learn more about these fixes and enhancements, refer to the *HP-UX HIDS Release Notes*.

Compatibility

HP-UX HIDS Release 3.1 is backward compatible with Release 3.0. It is not backward compatible with Release 2.0, Release 2.1, Release 2.2, and Release 1.0.

1. See also “OpenSSL” on page 162.

Performance

HP-UX HIDS Release 3.0 provides significant reduction in CPU consumption and better performance throughput by the HIDS `idscor` correlator process. HP-UX HIDS Release 3.1 performance is not changed, and the performance remains same as in Release 3.0.

Documentation

For further information, refer to the following:

- Manpages (directory path `/opt/ids/share/man/man1m`):
  - *IDS_checkAdminCert* (1M)
  - *IDS_checkAgentCert* (1M)
  - *IDS_checkInstall* (1M)
  - *IDS_genAdminKeys* (1M)
  - *IDS_genAgentCerts* (1M)
  - *IDS_importAgentKeys* (1M)
  - *idsadmin* (1M)
  - *idsagent* (1M)
  - *idsgui* (1M)
- Documents (available at **`http://docs.hp.com/en/internet.html#HP-UX%20Host%20Intrusion%20Detection%20System`**):
  - *HP-UX Host Intrusion Detection System Release 3.0 Release Notes*
  - *HP-UX Host Intrusion Detection System Release 3.1 Release Notes*
  - *HP-UX Host Intrusion Detection System Administrator's Guide, Software Release 3.0*
  - *HP-UX Host Intrusion Detection System Administrator's Guide, Software Release 3.1*
  - *HP OpenView Operations SMART Plug-In for HP-UX HIDS* (Available at the HP Openview Management Software site at **`http://openview.hp.com`**. Choose **Downloads**, then **Smart Plug-ins**.)

Obsolescence

Effective June 1, 2005, the support for Release 1.0 of HP-UX HIDS will be discontinued. HP recommends that all customers using HP-UX HIDS 1.0 upgrade to Release 3.0/Release 3.1 immediately.

HP-UX IPFilter

The security product, HP-UX IPFilter version A.03.05.11.01, provides system firewall capabilities by filtering IP packets to control traffic in and out of a system. HP-UX IPFilter includes support for Static Linking, Gigabit Ethernet, Auto Port Aggregation (APA), and Virtual Local Area Network (VLAN).

Summary of Change

HP-UX IPFilter version A.03.05.11.01 includes defect fixes and performance enhancements.

Impact

There is no significant impact.

Compatibility

There are no known compatibility issues.

Performance

There are no significant performance issues.

Documentation

For further information, refer to the following:

- Manpages:

ipf (4)	packet filtering kernel interface
ipf (5)	IP packet filter rule syntax
ipf (8)	alters packet filtering list for packet input/output
ipl (4)	data structure for IP packet log device
ipmon (8)	monitors `/dev/ipl` for logged packets
ipfstat (8)	reports on packet filter statistics and filter list
ipftest (1)	test packet rules with arbitrary input

- Documents (available at **`http://docs.hp.com/hpux/internet/index.html#HP-UX%20IPFilter`**):
  - *HP-UX IPFilter version A.03.05.09 Administrator's Guide*
  - *HP-UX IPFilter A.03.05.11.01 Release Notes*

Obsolescence

Not applicable.

HP-UX Secure Shell

HP-UX Secure Shell A.03.91.009 is based on OpenSSH 3.9p1. The client/server architecture supports the SSH-1 and SSH-2 protocols and provides secured remote login, file transfer, and remote command execution. The product is available for HP-UX 11.0, 11i v1, and 11i v2.

Summary of Change

Following are the new features in HP-UX Secure Shell A.03.91.009:

- `sshd re-exec` for each new connection
- Permission and ownership checks for program configuration files
- *sftp* (1) interface improvements
- Extended `chroot` support
- Built to support optional language extensions
- Built with `sftplogging` patch
- New configuration directives in `sshd_config` (server):
  - *AcceptEnv*
  - *MaxAuthTries*
  - *LogSftp*
  - *SftpLogFacility*
  - *SftpLogLevel*
  - *SftpPermitChmod*
  - *SftpPermitChown*
  - *SftpUmask*
- New configuration directives in `ssh_config` (client):
  - *ControlMaster*
  - *ControlPath*
  - *IdentitiesOnly*
  - *SendEnv*

HP-UX Secure Shell A.03.91.009 also contains the following features, which were introduced in HP-UX Secure Shell A.03.81.000:

- Use of untrusted cookies for X11-forwarding
- Support for sending Application Layer Keep-Alive messages to the server
- The `/etc/moduli` file updated
- Support for GSSAPI replaced with GSSAPI-With-MIC

Impact

There are no impacts other than those described previously.

Compatibility

There are no known compatibility issues.

Performance

There are no known performance issues.

Documentation

For more information, refer to the *HP-UX Secure Shell A.03.91.002/003 Release Notes* at **http://www.docs.hp.com** under the section “Internet and Security Solutions.”

Obsolescence

Not applicable.

HP-UX Security Attributes Configuration

The HP-UX Security Attributes Configuration product (bundle `SecConfig`) is used to configure system-wide and per-user values of security attributes of local users and NIS users. This product is newly introduced in HP-UX 11i v2 May 2005 release.

You can use the HP-UX Security Attributes Configuration tool to perform the following tasks:

- Configure systemwide values of security attributes.
- Configure per-user values of security attributes of local users.
- Configure per-user values of security attributes of NIS users.

For a list of security attributes that can be configured, see the *security* (4) manpage.

NOTE To use the HP-UX Security Attributes Configuration tool, you must install the HP-UX Standard Mode Security Extensions bundle on an HP-UX system. For more information, see “HP-UX Standard Mode Security Extensions” on page 159.

Summary of Change

The HP-UX Security Attributes Configuration product is newly introduced in the HP-UX 11i v2 May 2005 release and has the following new features in this version:

- Launchpoint from HP-UX System Administration Manager (SAM), HP Systems Insight Manager (SIM)[1] and HP System Management Homepage (SMH).[2] You can also launch the tool by executing the secweb command.
- Web-based Graphical User Interface (GUI) and Terminal User Interface (TUI) is available.
- User-friendly way of configuring systemwide values and per-user values of security attributes of local users and NIS users.
- Preview commands that support the GUI actions, prior to execution.

Impact

A new tool is available to configure systemwide and per-user values of security attributes of local users and NIS users.

Compatibility

There are no known compatibility issues.

Performance

There are no known performance issues.

Documentation

A new manpage, *secweb* (1M), has been introduced for the HP-UX 11i v2 May 2005 release. Also refer to the *HP-UX Security Attributes Configuration Release Notes* (available at **http://docs.hp.com**) and to the product on-line help for more information.

For a list of security attributes that can be configured, see the *security* (4) manpage. Also see the *HP-UX Standard Mode Security Extensions Release Notes*, available at **http://docs.hp.com**.

Obsolescence

Not Applicable.

HP-UX Standard Mode Security Extensions

The HP-UX Standard Mode Security Extensions security features include enhancements or changes to be used in standard mode that were previously available only in trusted mode systems.

1. See “HP Systems Insight Manager” on page 118.
2. See “HP System Management Homepage” on page 117.

The software is in the StdModSecExt bundle and is available at HP Software Depot at **http://software.hp.com** and on Software Pack (SPK) for HP-UX 11i v2 May 2005. For more information about SPK, see “Software Pack (Optional HP-UX 11i v2 Core Enhancements)” on page 28.

Summary of Change

Several security features previously available only in trusted mode are now available on standard mode systems.[1] In addition, several security attributes can now be configured with a system-wide default or with a per-user value.

The following security features are now available in standard mode:

- Auditing user and system activities.
- Account locking after too many authentication failures.
- Displaying the last successful and unsuccessful login.
- Preventing the re-use of passwords in the password history.
- Preventing logins with null passwords.
- Restricting logins to specific time periods.
- Expiring inactive accounts.

The above security features have been implemented by the following HP-UX changes:

- The auditing system.
- The /etc/default/security configuration file (system-wide security defaults).
- The /etc/pam.conf configuration file and the PAM libraries.
- The libsec routines.
- The addition of a user database for per-user configuration.

Also see “HP-UX Auditing System” on page 152 and “HP-UX 11i Security Containment” on page 150.

Impact

The HP-UX Standard Mode Security Extensions bundle can be installed on HP-UX 11i v2 September 2004 or later.

Each of the security features is optionally configured. The HP-UX Standard Mode Security Extensions bundle does not change systems running in trusted mode.

The following products or software are related to HP-UX Standard Mode Security Extensions:

- The HP-UX Security Attributes Configuration product configures system-wide and per-user values of security attributes. It includes graphical and terminal user interfaces. This product requires the StdModSecExt bundle to be installed on the same HP-UX system. See “HP-UX Security Attributes Configuration” on page 158 and also refer to the *HP-UX Security Attributes Configuration Release Notes* at **http://docs.hp.com**.

1. These features are also available when using the shadow password file.

- The HP-UX 11i Security Containment software provides the next generation of security features including compartments, fine-grained privileges, Role-based Access Control, and Standard Mode Security Extensions. The `StdModSecExt` bundle is also included with the HP-UX Security Containment bundle. See "HP-UX 11i Security Containment" on page 150 and also refer to the *HP-UX Security Containment Release Notes* at **`http://docs.hp.com`**.

Compatibility

If you choose to load only the May 2005 version of this feature, without doing a complete update to the May 2005 version of HP-UX 11i v2, you must first load the September 2004 version of HP-UX 11i v2.

Performance

There are no known performance issues.

Documentation

- For further information, see the product Web page at **`http://www.software.hp.com/portal/swdepot/displayProductInfo.do?productNumber=StdModSecExt`**.
- The following documents, available at **`http://docs.hp.com/en/internet.html`**, describe the features of the HP-UX Standard Mode Security Extensions:
  - *HP-UX 11i Security Containment Administrator's Guide*
  - *HP-UX Standard Mode Security Extensions Release Notes* (5991-0791)
- The following related documentation is available at **`http://docs.hp.com`**:
  - *HP-UX Security Attributes Configuration Release Notes* (5991-1005)
  - *HP-UX Security Containment Release Notes* (5991-1125)
- The following manpages have been revised:
  - *audusr* (5) Describes the audusr command which selects users to audit.
  - *audit* (5) Describes the HP-UX auditing system which provides a mechanism to audit users and processes.
  - *pam_acct_mgmt* (3) Describes the `pam_acct_mgmt()` function which performs Pluggable Authentication Module (PAM) account validation procedures.
  - *pam.conf* (4) Describes the `/etc/pam.conf` configuration file for PAM modules.
  - *pam_hpsec* (5) Describes the `hpsec` service module which implements extensions specific to HP-UX for authentication, account management, password management, and session management.
  - *security* (4) Describes the security defaults configuration file `/etc/default/security` and attributes.
  - *useradd* (1M) Adds a new user login to the system.
  - *userdel* (1M) Deletes a user login from the system.
  - *usermod* (1M) Modifies a user login on the system.

- The following new manpages are installed with the HP-UX Standard Mode Security Extension software:
  - *getauduser* (3) Retrieves the accountable user for the current process. Refer also to *audit* (5).
  - *setauduser* (3) Starts auditing the current process as owned by a given user. Refer also to *audit* (5).
  - *userdbck* (1M) Verifies or fixes per-user information in the user database. Refer also to *userdb* (4).
  - *userdbget* (1M) Displays per-user information residing in the user database. Refer also to *userdb* (4).
  - *userdbset* (1M) Modifies per-user information in the user database. Refer also to *userdb* (4).
  - *userdb* (4) Describes the user database (`/var/adm/userdb`) that stores per-user information.
- See also the following sections in this HP-UX Release Notes:
  - “HP-UX Auditing System” on page 152
  - “HP-UX Security Attributes Configuration” on page 158
  - “HP-UX 11i Security Containment” on page 150

Obsolescence

Not applicable.

OpenSSL

OpenSSL A.00.09.07e is based on the open source product OpenSSL 0.9.7e, which offers a general purpose cryptography library and implementation of the Secure Sockets Layer (SSLv2/v3) and Transport Layer Security (TLS v1) protocols.

Summary of Change

OpenSSL A.00.09.07e automatically generates a self-signed host certificate and a private key. The host certificate is stored as `/opt/openssl/certs/hosts.pem`, and the private key of the host certificate as `/opt/openssl/private/hostkey.pem`.

Impact

There are no impacts other than those described previously.

Compatibility

There are no known compatibility issues.

Performance

There are no known performance issues.

Documentation

For more information, refer to the *OpenSSL A.00.09.07-e Release Notes* at **http://www.docs.hp.com** under the section “Internet and Security Solutions.”

Obsolescence

Not applicable.

9 Commands and System Calls

What is in This Chapter?

This chapter includes information about new and changed commands and system calls, including the following:

The hostname Command

The *hostname* (1) command is part of the core operating system. This command is used to set or display the name of the current host system.

Summary of Change

As part of the Node and Host Name Expansion (NodeHostNameXpnd), the `hostname` command can set and display the name of the current host system to more than the previously allowed 64 bytes. You may now configure the system to allow these limits to be expanded to 255 bytes. This capability is available starting with the HP-UX 11i v2 May 2005 update.

The default system configuration allows host names up to 64 bytes in length. The optional NodeHostNameXpnd product bundle (available on Software Pack) must be installed and the appropriate configuration options enabled to allow up to 255 bytes. All relevant documentation (manpages and product documents) should be understood before enabling the configuration options.

Impact

The *hostname* (1) command may set or display the host name up to 255 bytes.

Compatibility

The default configuration options, allowing host names up to 64 bytes, ensures compatibility with all HP-UX versions.

Performance

There is no change in performance.

Documentation

For further information, see the *hostname* (1) manpage.

Also see the following related information in this document:

- “Software Pack (Optional HP-UX 11i v2 Core Enhancements)” on page 28
- “Node and Host Name Expansion” on page 125
- “The setuname Command” on page 167
- “The uname Command” on page 168
- “Common Desktop Environment (CDE)” on page 184

Obsolescence

Not applicable.

The setuname Command

The *setuname* (1M) command is part of the core operating system. This command is used to change machine information.

Summary of Change

As part of the Node and Host Name Expansion (NodeHostNameXpnd), the `setuname` command, by using the appropriate options, can modify the value for the system name and/or node name to more than the previously allowed 8 bytes. You can configure the system to allow these limits to be expanded to 255 bytes. This capability is available starting with the HP-UX 11i v2 May 2005 update.

The optional NodeHostNameXpnd product bundle (available on Software Pack) must be installed and the appropriate configuration options enabled to allow up to 255 bytes. All relevant documentation (manpages and product documents) should be understood before enabling the configuration options.

Impact

The *setuname* (1M) command can set system name up to 255 bytes.

Compatibility

The default configuration options, allowing node names up to 8 bytes, ensures compatibility with all HP-UX versions.

Performance

There is no change in performance.

Documentation

For further information, see the *setuname* (1M) manpage.

Also see the following related information in this document:

- “Software Pack (Optional HP-UX 11i v2 Core Enhancements)” on page 28
- “Node and Host Name Expansion” on page 125
- “The hostname Command” on page 166
- “The uname Command” on page 168
- “Common Desktop Environment (CDE)” on page 184

Obsolescence

Not applicable.

The uname Command

The *uname* (1) command is part of the core operating system. This command is used to display information about computer system and to set a node name.

Summary of Change

As part of the Node and Host Name Expansion (NodeHostNameXpnd), the uname command can set and display the current node name (system name) to more than the previously allowed 8 bytes. You may now configure the system to allow these limits to be expanded to 255 bytes. This capability is available starting with the HP-UX 11i v2 May 2005 update.

The default system configuration allows node names up to 8 bytes in length. The optional NodeHostNameXpnd product bundle (available on Software Pack) must be installed and the appropriate configuration options enabled to allow up to 255 bytes. All relevant documentation (manpages and product documents) should be understood before enabling the configuration options.

Impact

The *uname* (1) command may set or display the node name up to 255 bytes.

Compatibility

The default configuration options, allowing node names up to 8 bytes, ensures compatibility with all HP-UX versions.

Performance

There is no change in performance.

Documentation

For further information, see the *uname* (1) manpage.

Also see the following related information in this document:

- “Software Pack (Optional HP-UX 11i v2 Core Enhancements)” on page 28
- “Node and Host Name Expansion” on page 125
- “The hostname Command” on page 166
- “The setuname Command” on page 167
- “Common Desktop Environment (CDE)” on page 184

Obsolescence

Not applicable.

10 Libraries and Programming

What is in This Chapter?

This chapter covers a variety of changes of particular interest to programmers, such as changes to compilers, editors, and libraries, including the following:

HP MLIB

HP MLIB contains mathematical software and computational kernels for engineering and scientific applications involving linear equations, least squares, eigenvalue problems, singular value decomposition, vector and matrix computations, convolutions, and Fourier Transforms. MLIB has six components: VECLIB, LAPACK, ScaLAPACK, SuperLU DIST, SOLVERS, and VMATH.

Summary of Change

New features for version 9.0 include the following:

- Support for arbitrary length FFTs
- FFT performance enhancements
- Support for VMATH, CXML, and BCS

Impact

The impact of the HP MLIB update is improved performance.

Compatibility

HP MLIB 9.0 is supported on PA-RISC 2.0 11i v1 (or later) and Itanium 2 11i v1.6 (or later). There are no differences in default behavior or functionality across PA-RISC and Itanium®-based architectures. There are no regressions from previous releases.

Performance

There are no known performance issues.

Documentation

For further information, refer to the following:

- *mlib* (3M) manpage installed at `/opt/mlib/share/man`
- Web site at **`www.hp.com/go/mlib`**
- *User's Guide* and release notes at **`http://docs.hp.com/hpux/dev/index.html#Performance%20Tools%20and%20Libraries`**

Obsolescence

Not applicable.

HP MPI

HP MPI version 2.1.1 is a high-performance implementation of the Message Passing Interface standard. HP MPI complies fully with the 1.2 standard and provides full MPI-2 functionality. HP MPI provides an application programming interface and software libraries to support parallel, message-passing applications that are efficient, portable, and flexible.

Summary of Change

HP MPI version 2.1.1 includes the following changes:

- Support for the following interconnects:
  - InfiniBand on Intel® Itanium®
  - HyperFabric2
  - TCP/IP on clusters
- Visual MPI for debugging and analysis
- Improved gather performance for TCP/IP
- Improved all-to-all performance
- Improved `ssh` support
- Improved socket progression for TCP/IP communication

Impact

There are no impacts other than those listed previously.

Compatibility

There are no known compatibility issues.

Performance

There are no known performance issues.

Documentation

For further information, refer to the following:

- Manpages are installed in `/opt/mpi/share/man`. Manpages for HP MPI utilities are located in `man1*`. Manpages for the HP MPI library are located in `man3*`.
- The *HP MPI User's Guide (Ninth Edition)* is available at **`http://docs.hp.com/hpux/pdf/B6060-96018.pdf`** and from the **`http://www.hp.com/go/mpi`** Web site.
- The *HP MPI V2.0 for HP-UX Release Note* is available at **`http://docs.hp.com/hpux/pdf/B6060-96014.pdf`**and from the **`http://www.hp.com/go/mpi`** Web site.

Obsolescence

Not applicable.

Java 2 Standard Edition Platform

Java™ 2 Standard Edition (J2SE™) products for HP-UX provide solutions to develop or deploy Java applications with the best performance on HP-UX servers and workstation.

The Java 2 section covers the following topics:

HP-UX Software Development Kit and Runtime Environment for the Java 2 Standard Edition Platform

The Java 2 Standard Edition for HP-UX 11i provides the Java 2 programming tools and runtime environment which allow you to deploy Java technology with the best performance on PA-RISC and Itanium®-based systems running HP-UX 11i.

Summary of Change

HP-UX Software Development Kit and Runtime Environment for the Java 2 Standard Edition Platform (SDK) and (RTE) versions 1.3 and 1.4 have been updated to provide the most current Java technology.

Impact

You will have the most current Java technology.

Compatibility

There are no known compatibility issues.

Performance

There are no known performance issues.

Documentation

For the most up-to-date information, refer to **http://www.hp.com/go/java**.

Obsolescence

HP-UX Software Development Kit and Runtime Environment for the Java 2 Standard Edition Platform version 1.3 has been deprecated and is planned for future obsolescence.

Java for HP-UX PA-RISC Add-On C++ Libraries for SDK and RTE

Java for HP-UX Add-on Standard C++ Runtime libraries are for the Software Development Kit (SDK) (product **T1456AAaddon**) and for the Runtime Environment (RTE) for the Java 2 Platform (product **T1457AAaddon**). Java developers on PA-RISC will need these C++ libraries if they are using the ANSI Standard C++ runtime (`-AA`) option in an application that loads Java. (See the following "Documentation" section for the location of further information.)

Summary of Change

As part of the whole Java package, the Add-on Standard C++ Runtime libraries have been updated to coincide with the updating of SDK and RTE versions 1.3 and 1.4.[1]

Impact

Customers with Itanium®-based systems are not affected. Java developers on PA-RISC will need these C++ libraries if they are using the ANSI Standard C++ runtime (`-AA`) option in an application that loads Java.

Compatibility

There are no known compatibility issues. The Add-on libraries simply bring PA-RISC functionality up to par with Itanium®-based systems.

Performance

There are no known performance issues.

Documentation

For further information, please read the release notes in the SDK and RTE software. Or for the most up-to-date information, go to the Web at **`http://www.hp.com/go/java`** and select "information library" in the left navigation bar.

Obsolescence

No plans for obsoleting this product at this time.

Runtime Plug-in (JPI) for Mozilla for the Java 2 Platform

The Runtime Plug-in (JPI) for HP-UX, Java™ edition, allows you to use the most up-to-date version of the HP-UX Java Runtime Environment (RTE) with Mozilla.

1. See "HP-UX Software Development Kit and Runtime Environment for the Java 2 Standard Edition Platform" on page 172.

Summary of Change

- This release includes later versions of the Plug-in 1.3 and Plug-in 1.4, which are compatible with the Software Development Kit (SDK) 1.3 and SDK 1.4 in HP-UX 11i v2 May 2005.
- Netscape is now no longer supported. Only Mozilla is supported with this release:
  - For Plug-in 1.3, Mozilla for HP-UX versions 1.2.1.01 through 1.6.0.01 is the required browser. (Mozilla version 1.7.3 is not supported on Java 1.3.1.*x*.)
  - For Plug-in 1.4, Mozilla for HP-UX version 1.2.1.01 through 1.7.3 is supported.

  Mozilla 1.6.0.01 is currently included in HP-UX 11i v2. This version and later versions of Mozilla can be downloaded free from **`http://www.hp.com/products1/unix/java/mozilla/index.html`**.

Impact

- With this release, you will have the most current Java technology.
- The Netscape Web browser is no longer supported with Plug-in 1.3 and 1.4.

Compatibility

There are no known compatibility issues.

Performance

There are no known performance issues.

Documentation

Always refer to **`http://www.hp.com/go/java`** for most current information on Java technology for HP-UX.

Obsolescence

The Runtime Plug-in (JPI) for HP-UX, Java™ edition, version 1.3 has been deprecated and is planned for future obsolescence.

ObsJava12

`ObsJava12` removes previously-installed Java version 1.2 on your system.

Summary of Change

If Java 1.2 exists, `ObsJava12` will automatically remove it from your system. After removing Java 1.2, `ObsJava12` removes itself.

Impact

There are no impacts. The removal of Java 1.2 is done automatically.

Compatibility

There are no known compatibility issues.

Performance

There are no known performance issues.

Documentation

There is no other documentation.

Obsolescence

Not applicable.

Perl

Perl is a high-level programming language created and enhanced by the Open Source community. Perl takes the best features from other languages, such as C, awk, sed, sh, and BASIC, among others, and at least a dozen other tools and languages.

Summary of Change

Perl 5.8.2 build 808 corresponds to the Perl 5.8.2 source code release and includes the following:

- Better Unicode support
- New I/O implementation
- New thread implementation
- Better numeric accuracy
- Safe Signals
- Many new modules
- More extensive regression testing

Significant changes that have occurred in the 5.8.2 release are documented in `perldelta`. This document can be viewed by entering `man perldelta`.

Impact

There are no impacts other than those listed above.

Compatibility

Perl 5.8 is not binary compatible with earlier releases of Perl. XS modules have to recompiled. (Pure Perl modules should continue to work.) The major reason for the discontinuity is the new IO architecture called PerlIO. PerlIO is the default configuration because without it many new features of Perl 5.8 cannot be used. In other words, you just have to recompile your modules containing XS code.

Performance

There are no known performance issues.

Documentation

For further information, refer to the `perldelta` manpage and the following Web sites:

- **`www.perl.org`**
- **`www.activestate.com`**
- **`http://learn.perl.org`**

Obsolescence

Not applicable.

Portability Package

The HP-UX 11i v2 Portability Package, version B.11.23.0505, makes migration from Tru64 UNIX and Sun Microsystems Solaris easier by delivering select Tru64 UNIX Application Programming Interfaces (APIs), as well as enhancements to existing APIs, into HP-UX 11i v2.

This product (bundle name `PortPkg`) is available on Software Pack (SPK) for HP-UX 11i v2 May 2005. (For more information about SPK, see “Software Pack (Optional HP-UX 11i v2 Core Enhancements)” on page 28.)

Summary of Change

The Portability Package consists of the following:

- The LibcExt product, which provides a new set of APIs, manpages, and header files. The APIs are `flock()`, `memcntl()`, `mvalid()`, `setenv()`, `unsetenv()`, `setlinebuf()`, `seteuid()`, `setegid()`. More information about these APIs can be found in the respective manpages after installation.
- Patch for shared `mmap` of `/dev/zero`: HP-UX 11i v2 used to support only private `mmap()` of `/dev/zero`. This patch adds support for shared mappings.

  Previously in HP-UX 11i a shared `mmap()` of `/dev/zero` would fail with `EINVAL`, as documented. Applications ported from other operating systems had to replace shared `mmap()` call to `/dev/zero` to `MAP_ANONYMOUS`. With this patch, applications already ported using `MAP_ANONYMOUS` will continue to work as expected. For new applications being ported that include a shared `mmap()` call to `/dev/zero`, they no longer have to change their sources.
- Patch to provide the previously unavailable *getdtablesize* (2) manpage (`/usr/share/man/man2.Z/getdtablesize.2`).

- Patch to update the *mkdir* (2) manpage (`/usr/share/man/man2.Z/mkdir.2`) to include changes for the `ENAMETOOLONG` return value returned by the *mkdir* (2) system call.

Impact

- The LibcExt product will aid in migration from Tru64 UNIX and Sun Microsystems Solaris.
- Shared `mmap()` of `/dev/zero` will succeed and behave as a shared `MAP_ANONYMOUS` object. This will help you to port your applications to HP-UX and maintain source compatibility.
- The *getdtablesize* (2) manpage provides information about the `getdtablesize` command.
- The *mkdir* (2) manpage is more up to date.

Compatibility

If you choose to load only the May 2005 version of this feature, without doing a complete update to the May 2005 version of HP-UX 11i v2, you must first load the September 2004 version of HP-UX 11i v2.

Performance

There are no known performance issues.

Documentation

For further information, see the following manpages:

- *zero* (7)
- *getdtablesize* (2)
- *mkdir* (2)

In addition, the manpages for LibcExt are included as part of the product. You can view these manpages by using the `man` command with any of the following API names as the argument:

- *flock* (2)
- *memcntl* (2)
- *mvalid* (2)
- *setenv* (3)
- *unsetenv* (3)
- *setlinebuf* (3)
- *seteuid* (2)
- *setegid* (2)

Obsolescence

The LibcExt product will not be released or supported for HP-UX 11i v3. However, the contents of this product will be fully integrated as part of C Library (`libc`). The new header files and the library will be disabled in future releases of HP-UX. However, a zero byte file for `libcext.*` will be delivered on HP-UX 11i v3 and then will be discontinued in future releases.

Software Transition Kit

The Software Transition Kit (STK) is a collection of tools and documents designed to help transition applications from various operating systems, such as Tru64 UNIX or Sun Microsystems Solaris, or from earlier versions of HP-UX to the latest version of HP-UX on the PA-RISC or the Itanium®-based platform.

The STK tools scan source code to identify compatibility issues between source and destination operating systems, and provide sound advice to resolve them. The STK reference documentation contains white papers, best practices, guidelines, usage guides, and hyperlinks to extensive on-line developer's documentation.

The STK products are available on the Application Release CD or can be downloaded from the following Web site:

`http://www.hp.com/go/STK`

Installation instructions for all STK products can be found on this Web site.

Termcap and Curses Interfaces

Historically, HP-UX has supported three different interfaces for terminal manipulation: Termcap (`libtermcap`, `libtermlib`), HP curses (`libHcurses`), and X/Open curses (`libxcurses`). Several of these libraries pre-date a 64-bit HP-UX release. Applications developers should use X/Open curses (`-lcurses`) which is defined as part of the UNIX95 standard.

Summary of Change

HP-UX 11i v1.5 removed system archive libraries for HP Integrity platforms. This included the Termcap and HP curses libraries. These libraries continue to be available as 32-bit applications on HP 9000 (PA-RISC) platforms; 64-bit versions of these libraries are not available. A shared library version of the HP curses (`libHcurses.sl`) is provided for binary compatibility for applications running on HP 9000 servers and under Aries on HP Integrity servers.

Applications utilizing these libraries should migrate to the standard X/Open curses interfaces. The Termcap (`libtermcap`, `libtermlib`) and HP curses (`libHcurses`) interfaces were deprecated in HP-UX 10.20 and will be removed in a future release.

Impact

Because system archive libraries are not provided in HP-UX 11i v2 for Itanium®-based platforms, you should ensure that application makefiles do not specify archive system libraries. Instead, applications should use shared libraries. While native archive libraries are provided on HP-UX 11i v2 for HP 9000 (PA-RISC) platforms, it is recommended that you use shared libraries. Shared libraries have the following benefits:

- Shared libraries avoid binding architecture dependencies into the application. This is especially important for PA-RISC applications running on Itanium®-based systems.
- Defect fixes are picked up automatically when a library is patched.
- The performance difference between archive and shared libraries is decreasing as new run-time architectures are optimized for shared libraries.

Compatibility

Makefiles specifying archived libraries will have to be modified to use shared libraries. Applications utilizing the legacy interfaces of Termcap or HP curses will need to be migrated to the X/Open curses interfaces.

Performance

There are no known performance issues.

Documentation

The white paper “Migrating HP curses applications to Xcurses” is included with the HP-UX Software Transition Kit. The transition kit also includes information on migrating your source base from archive libraries to shared libraries. The latest version of the transition kit is available at **`http://www.hp.com/go/STK`**.[1]

Obsolescence

The classic HP curses library, libHcurses, and Termcap libraries will be obsolete in a future release.

1. See also “Software Transition Kit” on page 178.

11 Internationalization

What is in This Chapter?

This chapter usually describes internationalization functionality. Topics in this chapter are unchanged for the May 2005 release of HP-UX 11i v2.

For a summary of changes in previous releases of HP-UX 11i v2, see the chapter Chapter 3, “What is New at a Glance,” on page 35.

12 Other Functionality

What is in This Chapter?

This chapter describes other new and changed operating-system software functionality, including the following:

Common Desktop Environment (CDE)

Common Desktop Environment (CDE) 2.1 is an environment for interacting with your workstation. When CDE is running on your system, it is said to be your system's desktop.

Summary of Change

As part of the Node and Host Name Expansion (NodeHostNameXpnd) product bundle[1] (now available on Software Pack), support for expanded nodenames and hostnames has been added to X11, Xt, Motif, CDE, and Audio.

- The input text fields of `dtstyle` and `dtcm` are enabled to get the maximum expanded hostname.
- In ToolTalk, the `nodename` value is changed to the first component of the system hostname.
- All the X11, Xt, Motif, CDE and Audio libraries and components that use filenames containing a hostname are modified to create/read files containing the ipaddress if the name of the file exceeds 255 bytes.
- All the CDE applications which display messages with the hostname in frames, dialogs, buttons are changed so that the messages are left-aligned and the hostname is truncated. The truncation is such that the initial characters of the hostname are visible. The number of characters shown depends on the window size.
- All the relevant manpages have been modified to inform users about these changes.

Impact

If the nodename is set to a value different than the first component of the hostname, the ToolTalk Application Programming Interface (API) returns the first component of the hostname instead of the nodename.

Compatibility

In the machines where support for the expanded hostnames and nodenames is not available, CDE cannot make remote actions involving hostnames with the expanded name.

Performance

There are no known performance issues.

1. See “Node and Host Name Expansion” on page 125.

Documentation

For further information regarding the support for the Node and Host Name Expansion feature, refer to the manpages for the following:

- `dtterm`
- `dthelpprint`
- `dtwm`
- `mwm`
- `dtsession`
- `dtappgather`

Also see “Node and Host Name Expansion” on page 125.

Obsolescence

Not applicable.