

HP-UX 11i Version 2 June 2007 Release Notes

HP 9000 and HP Integrity Servers



Manufacturing Part Number: 5992-2872

June 2007, Edition 2

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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. Each document in the series describes what is new, changed, deprecated, or obsoleted since the previous release of HP-UX 11i v2 (or, in the case of the initial release, since HP-UX 11i v1.6).

For the most recent documents in this series, see the HP-UX 11i v2 documentation at <http://www.docs.hp.com/hpux/os/11iv2>. Documents in this series are also available on the Instant Information media.

To ensure that you receive any 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 June 2007 Release Notes*
June 2007, Edition 2, MPN 5992-2872

Previous Documents in This Series

- *HP-UX 11i Version 2 June 2007 Release Notes*, Edition 1, MPN (retired and replaced by Edition 2)
- *HP-UX 11i Version 2 September 2006 Release Notes*, Edition 1, MPN 5991-5535
- *HP-UX 11i Version 2 June 2006 Release Notes*, Edition 1, MPN 5991-5320
- *HP-UX 11i Version 2 March 2006 Release Notes*, Edition 2, MPN 5991-6741
- *HP-UX 11i Version 2 March 2006 Release Notes*, Edition 1, MPN (retired and replaced by Edition 2)
- *HP-UX 11i Version 2 December 2005 Release Notes*, Edition 1, MPN 5991-2710
- *HP-UX 11i Version 2 May 2005 Release Notes*, Edition 1, MPN 5991-1101
- *HP-UX 11i Version 2 September 2004 Release Notes*, Edition 2, MPN (5992-2852)
- *HP-UX 11i Version 2 September 2004 Release Notes*, Edition 1, MPN (retired and replaced by Edition 2)
- *HP-UX 11i Version 2 March 2004 Release Notes*, Edition 1, MPN 5990-6739
- *HP-UX 11i Version 2 Release Notes (October 2003)* Edition 3, MPN (5992-2854)
- *HP-UX 11i Version 2 Release Notes (October 2003)* Edition 2, MPN (retired and replaced by Edition 3)
- *HP-UX 11i Version 2 Release Notes (September 2003)*, Edition 1, MPN (retired and replaced by Edition 2)

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Please direct comments regarding this guide to:

Hewlett-Packard Company
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3404 East Harmony Road
Fort Collins, Colorado 80528-9599

Or, use the form at the following Web site to send us feedback:

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

Typographic Conventions

We use the following typographical conventions.

<i>audit</i> (5)	An HP-UX manpage. <i>audit</i> is the name and 5 is the section in the <i>HP-UX Reference</i> . On the Web and on the Instant Information media, 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 <i>man</i> (1).
<i>Book Title</i>	The title of a book. On the Web and on the Instant Information media, it may be a hot link to the book itself.
<i>Emphasis</i>	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.
User Input	Commands and other text that you type.
<i>Variable</i>	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.

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What is in This Chapter?

This chapter will 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 June 2007 Release Notes? (see page 10)
- Where Should I Begin? (see page 11)
- Locating Release Notes for Previous Versions of HP-UX (see page 12)
- Other Sources of Information about This Release (see page 13)
- What is in the Remaining Chapters? (see page 15)

What is the Purpose of the HP-UX 11i Version 2 June 2007 Release Notes?

This document is part of a series. Each document in the series describes what is new, changed, deprecated, or obsoleted since the previous release of HP-UX 11i v2 (or, in the case of the initial release, since HP-UX 11i v1.6).

The *HP-UX 11i Version 2 June 2007 Release Notes* describes what is new, has changed, or has been deprecated or obsoleted in HP-UX 11i v2 since the HP-UX 11i v2 September 2006 Operating Environment update.

As with other HP-UX release notes, the *HP-UX 11i Version 2 June 2007 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 33 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 June 2007 Release?”, in particular, will give you a general overview of how this release differs from the September 2006 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 to 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/>.

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.
 - 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/>.
 - Information about HP-UX 11i v1 release is available at <http://www.docs.hp.com/hpux/os/11i/>.

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 Administration Guide

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

Software Distributor Administrator's Guide

nPartition Administrator's Guide

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 "I/O Cards and Networking Software" 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://hp.com/go/softwaredepot>

HP Software Releases and Media:
<http://www.hp.com/software/releases/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://hp.com/go/hp-ux>

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 Update 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 four Operating Environments, along with information about Software Pack and about compatibility issues.
- Chapter 3, “What is New at a Glance,” on page 33, 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, “Hardware-Specific Information,” on page 91, presents information regarding supported systems, networking and mass storage cards and drivers, as well as other information that is server-specific.
- Chapter 5, “General System Administration,” on page 109, includes information of particular interest to system administrators.
- Chapter 6, “Disk and File Management,” on page 157, presents information regarding directory, file system, and disk management.
- Chapter 7, “Internet and Networking,” on page 163, covers changes to networking functionality and Internet services.
- Chapter 8, “Security,” on page 177, covers changes and enhancements to security services.
- Chapter 9, “Commands and System Calls,” on page 193, includes information about new and changed commands and system calls.
- Chapter 10, “Libraries and Programming,” on page 197, provides information of particular interest to programmers, including changes to compilers, editors, and libraries.
- Chapter 11, “Internationalization,” on page 203, presents information about text fonts and converters relating to various international languages.
- Chapter 12, “Other Functionality,” on page 205, includes additional applications or functionality in the Operating Environments.

What is in This Chapter?

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

- Welcome to HP-UX 11i v2 June 2007 Update Release (see page 18)
- HP-UX 11i Release Names and Release Identifiers (see page 19)
- HP-UX 11i v2 Software and Driver Bundle Types (see page 20)
- HP-UX 11i v2 Operating Environments (see page 21)
 - Overview (see page 21)
 - HP-UX 11i v2 Foundation Operating Environment (see page 21)
 - HP-UX 11i v2 Enterprise Operating Environment (see page 24)
 - HP-UX 11i v2 Mission Critical Operating Environment (see page 25)
 - HP-UX 11i v2 Technical Computing Operating Environment (see page 25)
- Software Pack (Optional HP-UX 11i v2 Core Enhancements) (see page 27)
- HP-UX 11i v2 Compatibility (see page 28)
 - Compatibility on HP-UX 11i for HP 9000 and Integrity Servers (see page 28)
 - Introduction (see page 28)
 - Compatibility Across Operating System Releases and Hardware Platforms (see page 28)
 - Compatibility within HP-UX 11i Virtualization Solutions (see page 28)
 - Compatibility between Architecture Families (see page 29)
 - Support (see page 29)
 - For More Information (see page 29)
 - Definition of Terms and Levels of Compatibility (see page 29)
 - Compatibility Issues or Exceptions in HP-UX 11i v2 June 2007 (see page 30)
 - Support of Products (see page 31)

Welcome to HP-UX 11i v2 June 2007 Update Release

The June 2007 update release of HP-UX 11i v2 continues to support both the HP 9000 and HP Integrity server families. This Enterprise update release offers the full range of HP-UX Operating Environments (OEs) and capabilities.

HP's Business Critical Servers group 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)
- 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 June 2007 update, 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

Before updating your system with any individual patches, patch bundles, or products released from September 2004 forward, you must consult the current *Read Before Installing or Updating to HP-UX 11i Version 2* and the *HP-UX 11i Version 2 Installation and Update Guide*. Both are available at <http://www.docs.hp.com/hpux/os/11iV2>.

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
HP-UX 11i v3	B.11.31	Intel® Itanium® PA-RISC

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.11.23.0706 HP-UX Mission Critical Operating Environment  
Component
```

The above revision string represents the following:

B.11.23 = HP-UX 11i v2

0706 = June 2007 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 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 for HP-UX, and Mozilla Application Suite. This OE is bundled as `HPUX11i-OE`. For more details, see “HP-UX 11i v2 Foundation Operating Environment” on page 21.
- **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 25.

IMPORTANT

HP-UX 11i v2 May 2005 was last release that included the Minimal Technical OE (MTOE). After May 2005, the HP-UX 11i v2 MTOE is no longer available. If you have questions, contact your HP sales representative.

-
- **HP-UX 11i v2 Technical Computing OE (TCOE)** — This OE contains 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 25.

IMPORTANT

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

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 33.)

Always-Installed Features¹

- Base-VXVM (VERITAS Volume Manager)
- BUNDLE11i
- CommonIO
- Disks and File Systems (fswcb)
- Event Monitoring Service
- FEATURE11i
- FDDI (PCI)
- FibreChannel (PCI)
- GigEther-00 (PCI)
- GigEther-01 (PCI)
- HP CIFS Client
- HP CIFS Server
- HP Instant Capacity (iCAP, formerly iCOD)
- HP WBEM Services for HP-UX
- HP-UX Accounts for Users and Groups
- HP-UX Kernel Configuration
- HP-UX Peripheral Device Tool (pdweb)
- HP-UX Security Attributes Configuration
- HP-UX WBEM Fibre Channel Provider
- HP-UX WBEM LVM Provider
- HP-UX WBEM SCSI Provider
- HWEnable11i
- IETHER-00 (PCI/PCI-X/PCIE)
- Logical Volume Manager (LVM)
- nPartition Provider
- Obsolescence Bundle
- ONC+
- Online Diagnostics
- OpenSSL
- PAM Kerberos
- PRMKernelSW (not available on TCOE)
- PRMLibraries (not available on TCOE)
- Quality Pack Patch Bundle
- RAID-01
- Runtime Plug-in (JPI) for Mozilla for the Java™ 2 Platform v1.4
- SAM-NNC
- scsiU320-00
- SerialSCSI-00
- Software Distributor (SD)
- SWGETTOOLS
- SysMgmtBASE
- System Administration Manager (SAM)
- System Fault Management (SysFaultMgmt)
- Update-UX

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

- USB-00
- WBEM-LAN-00

Default-Installed Features

- Distributed Systems Administration Utilities
- Dynamic Root Disk
- FibrChanl-02
- Firefox
- Firefox Source
- GTK
- GTK Source
- GTK+ Libraries
- HP Global Workload Manager Agent (Trial version)
- HP Integrity Virtual Machines Provider
- HP Integrity VM Support Library (VMGuestLib)
- HP System Management Homepage
- HP-UX Bastille
- HP-UX IPFilter
- HP-UX Java Runtime Environment (JRE) 5.0
- HP-UX Java Development Kit (JDK) for the Java™ 2 Platform Standard Edition (J2SE) 5.0
- HP-UX Secure Shell
- HP-UX Software Assistant
- HP-UX Software Development Kit and Runtime Environment for the Java 2 Platform Standard Edition v1.4
- 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/JDK and RTE/JRE (PA-RISC only) 1.4 and 5.0
- Judy Libraries
- LDAP-UX Integration
- Mozilla Application Suite
- Mozilla Source
- Partition Manager
- Perl
- ProviderDefault (includes HP Application Discovery Agent, HP-UX WBEM File System Provider, HP-UX WBEM IOTree Indication Provider, HP-UX WBEM RAIDSA Provider, and HP-UX WBEM SAS Provider)
- Sec00Tools
- Thunderbird
- Thunderbird Source
- Utilization Provider
- vPar Provider

Selectable Features

- 10 Gigabit Ethernet
- ATM-00
- Base-VXFS
- EnableVxFS 4.1
- HP OnlineJFS 3.5 (available on EOE and MCOE only)

- HP Pay per use
- HP Systems Insight Manager
- HP-UX Host Intrusion Detection System (HIDS) (not available on TCOE)
- HP-UX iSCSI Software Initiator
- HyperFabric
- Ignite-UX
- Java Out-of-Box
- Mobile IPv6
- Netscape Directory Server
- Red Hat Directory Server for HP-UX
- PCI MUX
- 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 21), 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 33.)

Always-Installed Features¹

- High Availability Monitors
- MirrorDisk/UX
- GlancePlus Pak
- HP OnlineJFS 4.1 (B3929EA)
- HP Process Resource Manager

Default-Installed Features

- See “Default-Installed Features” on page 23

Selectable Features

- HP OnlineJFS 3.5 (B3929DA) (EOE and MCOE only)
- Also see “Selectable Features” on page 23

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

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 33.)

Always-Installed Features¹

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

Default-Installed Features

- See “Default-Installed Features” on page 23

Selectable Features

- HP OnlineJFS 3.5 (B3929DA) (EOE and MCOE only)
- Also see “Selectable Features” on page 23

IMPORTANT

HP-UX 11i v2 May 2005 was last release that included the Minimal Technical OE (MTOE). After May 2005, the HP-UX 11i v2 MTOE is no longer available. If you have questions, contact your HP sales representative.

HP-UX 11i v2 Technical Computing Operating Environment

The Technical Computing Operating Environment contains all the base functionality that is common to the other three OEs, including the base 64-bit HP-UX operating system, network drivers, and other always-installed functionality. From the December 2005 release and forward, the Technical Computing OE for HP-UX 11i v2 is available only for technical servers.

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 33.)

Always-Installed Features¹

- HP 3D Technology for the Java 2 Standard Edition Platform (Itanium®-based systems only)
- HP Message Passing Interface (MPI)
- HP MLIB

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

- HP-UX 3D Graphics Run Time Environment and Developer's Kit (Workstations not supported)
- Runtime Plug-in (JPI) for Mozilla for the Java™ 2 Platform v1.4
- Technical System Configuration (TechSysConf)
- Also see "Always-Installed Features" on page 22

Default-Installed Features

- See "Default-Installed Features" on page 23

Selectable Features

- See "Selectable Features" on page 23

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

The HP-UX 11i v2 Software Pack (SPK) media 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://hp.com/go/softwaredepot>.
- 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 June 2007 release of the SPK media delivers the following features. For more information, see the indicated pages:

- DUMPAAEnable (see page 111)
- HP-UX Enhanced Publickey-LDAP (see page 165)
- HP-UX Role-based Access Control (see page 187)
- HP-UX Standard Mode Security Extensions (see page 191)
- LoginNLS (see page 194)
- `trufgrep` Command (see page 195)
- `usermod` Command Enhancement (Restricted Movement of Home Directories) (see page 195)

NOTE

If you choose to load only the June 2007 version of these SPK features, without doing a complete update to the June 2007 version of HP-UX 11i v2, you must first load the September 2004 version of HP-UX 11i v2.

HP-UX 11i v2 Compatibility

Compatibility on HP-UX 11i for HP 9000 and Integrity Servers

Introduction

Hewlett-Packard (HP) understands your need for investment protection. By providing multiple levels of compatibility between operating system versions, between hardware platforms, on virtual machines, and even between chip architectures, we believe the HP-UX operating system provides the most comprehensive investment protection in the industry. (See “Definition of Terms and Levels of Compatibility” on page 29 for a definition of levels of compatibility.)

Compatibility Across Operating System Releases and Hardware Platforms

For “Well-behaved” user space applications Hewlett-Packard (see “Definition of Terms and Levels of Compatibility” on page 29 for a definition of “Well-behaved” and other terms):

- Maintains forward data, source, build environment, and binary compatibility across all hardware platforms of the same architecture family (e.g., Integrity or HP 9000) which are supported by the same version of HP-UX;
- Provides forward data, source, build environment, and binary compatibility across HP-UX versions on HP 9000 servers and Integrity servers on their respective architectures. This is true for 32bit or 64bit applications on either architecture family;
- Delivers new features and improved performance with each new HP-UX release. Binary compatibility across Operating System versions applies to legacy features (features that were present in the earlier release) and often still holds true for new features. There are some instances, however, where applications may be required to recompile in order to use or leverage a new feature.

See the release notes for each version of HP-UX for information on new features that may require changes to applications.

Compatibility within HP-UX 11i Virtualization Solutions

“Well-behaved” applications built on HP-UX 11i are binary compatible to run within HP-UX Virtual Partitions (vPars) on the same architecture family. No changes, recompilation or re-certification is necessary.

“Well-behaved” applications built on HP-UX 11i Integrity are binary compatible to run within an HP Integrity Virtual Machine (VM). This binary compatibility applies to applications with no specific device dependencies and to applications that depend only on devices currently virtualized by Integrity VM. Most applications do not have specific device dependencies. However, if your application has specific device dependencies, please refer to the *HP Integrity Virtual Machines QuickSpecs* for details. You can view the document at

http://h18000.www1.hp.com/products/quickspecs/12715_div/12715_div.PDF

Compatibility between Architecture Families

In addition to the compatibility provided within an architecture family, HP-UX 11i on HP 9000 servers is data, source, and build environment compatible with HP-UX 11i on Integrity servers. Build environments and source files can be moved from HP 9000 servers to Integrity servers and be rebuilt without modification.

Application binaries that were built on HP-UX on HP 9000 servers are binary compatible, with some limitations, with HP-UX on HP Integrity servers when running through the Aries Dynamic Code Translator. The use of Aries can be completely transparent. For more information about Aries, see <http://www.hp.com/go/aries>.

Support

HP is committed to providing investment protection via compatibility as outlined above. Any owner of application code that meets the criteria for compatibility, who has encountered a compatibility failure as defined by this document, should contact HP through a special support line (for North America) at 1-800-249-3294 and use option 2. Help is also available alternatively by sending an e-mail to dspp.dev@hp.com. Please identify the problem as a “compatibility failure.”

For More Information

- <http://www.hp.com/go/hpux11i>
- <http://www.hp.com/go/integrity>

Definition of Terms and Levels of Compatibility

There are multiple types of compatibility that need to be defined:

- Forward Compatibility means that there is compatibility between a version and a later version. It does not mean or include compatibility going from the later version to the previous version. All references to compatibility in this document are for forward compatibility only.
- Build environment compatibility means that application build environments (makefiles, script files, etc.) can be moved and used unchanged from the original system to the target system.
- Source compatibility refers to the ability to compile the same application code source file on an original system and a compatible system with different versions of the HP compiler.
- Binary compatibility refers to the ability to compile an application on a specific solution (architecture, hardware platform, operating system version) to produce a binary file. That binary file, without modification, can be run on the solution where it was created and it can be on a target solution which is binary compatible.
- Data compatibility means that the data format on the different targets is the same.
- “Well-behaved” User Space Applications:

HP-UX provides compatibility for applications that are user space (as opposed to kernel intrusive) applications that are “well behaved.” A “well behaved” user space application is an application that adheres to the following characteristics:

- Uses only documented public application programming interfaces (APIs) (Documented interfaces are those found in the system manual [man] pages or at <http://docs.hp.com>)
- Is not a kernel intrusive application
- Adheres to standard development practices (for example: a shared library cannot be dependent on an archive library, etc.)
- Does not use features that are specifically documented as having platform architecture or configuration limitations
- Has no software dependencies on specific types of hardware (e.g., specific mass storage devices or specific I/O or networking adapters)
- Does not decompose an HP-UX product and then reuse the results of the decomposition (for example: extracting and using a module from a system library, or copying a system library or command from one release to another, etc.)

Compatibility Issues or Exceptions in HP-UX 11i v2 June 2007

Compatibility issues or exceptions have been noted for the following products or features that have been updated in June 2007. For details, see the indicated pages.¹

Hardware-Specific Information (see page 91)

- USB-00 (see page 102)

General System Administration (see page 109)

- HP Integrity Virtual Machines Provider (VM Provider) (see page 118)
- HP Application Discovery (see page 122)
- HP Serviceguard (see page 131)

Internet and Networking (see page 163)

- Browsers (see page 164)

Security (see page 177)

- HP-UX Bastille (see page 178)
- HP-UX Host Intrusion Detection System (see page 179)
- Install-Time Security (see page 184)

Commands and System Calls (see page 193)

- LoginNLS (see page 194)

1. 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.

Libraries and Programming (see page 197)

- Perl (see page 200)

NOTE

Before updating your system with any individual patches, patch bundles, or products released from September 2004 forward, you must consult the current *Read Before Installing or Updating to HP-UX 11i Version 2* and the *HP-UX 11i Version 2 Installation and Update Guide*. Both are available at <http://docs.hp.com/en/oshpux11iv2.html>.

Support of Products

For information about the support of products not listed 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://hp.com/go/softwaredepot>
- HP IT Resource Center: <http://itrc.hp.com>

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 June 2007 Release? (see page 34)
- What is New in the September 2006 Release? (see page 40)
- What is New in the June 2006 Release? (see page 44)
- What is New in the March 2006 Release? (see page 47)
- What is New in the December 2005 Release? (see page 51)
- What is New in the May 2005 Release? (see page 55)
- What is New in the September 2004 Release? (see page 60)
 - What is New in September 2004 for Customers Migrating from HP-UX 11i v1? (see page 61)
 - What is New in September 2004 for Existing Customers of HP-UX 11i v2? (see page 70)
- What is New in the March 2004 Release? (see page 77)
- What is New in the Initial (October 2003) HP-UX 11i v2 Release? (see page 80)

What is New in the June 2007 Release?

In the following summaries, you can obtain a general picture of how the June 2007 release of HP-UX 11i v2 differs from the September 2006 release of HP-UX 11i v2.

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

Chapter 4: “Hardware-Specific Information” (see page 91)

- **CommonIO bundle:** Updated with quality improvements. (See “SerialSCSI-00” on page 101.)
- **Hardware Enablement Patch Bundle for HP-UX 11i v2 (HWEnable11i):** Includes new support for PCI-Express I/O adapters in HP Integrity Servers, and HP-UX support for HP servers with PA8900 processors and the sx2000 chipset. (See “Hardware Enablement Patch Bundle for HP-UX 11i v2” on page 92.)
- **HP Instant Support Enterprise Edition (ISEE):** Updated to version to incorporate defect fixes. (See “HP Instant Support Enterprise Edition” on page 93.)
- **Networking and Mass Storage Drivers (see page 94)**
 - **10GigEther-00:** Updated to enable future products. (See “10GigEthr-00” on page 96.)
 - **FibrChanl-00 (HP PCI Tachyon TL/TS/XL2 Fibre Channel Driver):** Updated with several quality and performance enhancements for the `td` driver, as well as defect fixes. (See “FibrChanl-00 (HP PCI Tachyon TL/TS/XL2 Fibre Channel Driver)” on page 98.)
 - **FibrChanl-01 (Fibre Channel Mass Storage Driver for HP-UX 11i v2):** Updated to incorporate defect fixes. (See “FibrChanl-01 (Fibre Channel Mass Storage Driver for HP-UX 11i v2)” on page 99.)
 - **New: FibrChanl-02 (Fibre Channel Mass Storage Driver for HP-UX 11i v2):** Supports a new set of PCIe fibre channel host bus adapters, starting with the AD299A. The driver name is `fc1p`, which is default-installed. (See “FibrChanl-02 (Fibre Channel Mass Storage Driver for HP-UX 11i v2)” on page 103.)
 - **IEther-00:** PCI Express (PCIe) technology enabled on HP-UX 11i v2 to support PCIe dual-port cards. New `lanadmin` option to enable writing VPD `asset_tag` on `eeprom`. HP strongly recommends that the default values of four tunables not be changed. (See “IEther-00” on page 95.)
 - **RAID-01:** Updated with quality improvements and support for Instance Provider. (See “RAID-01” on page 100.)
 - **scsiU320-00:** Updated with quality improvements. (See “scsiU320-00” on page 101.)
 - **SerialSCSI-00:** Updated with quality improvements, new HBA firmware, and support for Instance Provider. (See “SerialSCSI-00” on page 101.)
 - **USB-00:** Updated to version C.01.04.03 to incorporate defect fixes. (See “USB-00” on page 102.)
- **Utility Pricing Solutions (see page 106)**

- HP Instant Capacity (iCAP): Updated to version B.11.23.08.01.01.x with update to the required version of nPartition Provider, defect fixes, modifications to the installation procedure, and more. (See “HP Instant Capacity” on page 107.)

Chapter 5: “General System Administration” (see page 109)

- Distributed Systems Administration Utilities: Updated to version 1.4 to incorporate defect fixes. (See “Distributed Systems Administration Utilities” on page 111.)
- **New:** DUMPAAEnable: Version B.11.23.0609.01. Enables high-availability features for HP's Active-Active Disk Arrays when configured as dump devices. Available on Software Pack. (See “DUMPAAEnable” on page 111.)
- **New:** Dynamic Root Disk (DRD): An HP-UX system administration toolset used to clone an HP-UX system image to an inactive disk for software maintenance and recovery. (See “Dynamic Root Disk” on page 113.)
- Enterprise Cluster Master Toolkit: Updated to version B.04.01. Enhanced Oracle toolkit, README file of each toolkit in the ECMT bundle. Includes support for HP Apache, HP CIFS and Oracle 9i and 10g with Cluster File System (CFS) 5.0, and more. (See “Enterprise Cluster Master Toolkit” on page 114.)
- Event Monitoring Services: Enhanced to support Web Based Enterprise Management (WBEM) notifications. Also includes defect fixes. Bundle name changed from B67609BA to EventMonitoring. (See “Event Monitoring Services” on page 115.)
- Feature Enablement Patch Bundle: FEATURE11i bundle consists of all its previous patches plus new enablement patches for Dynamic Root Disk, vPars, and VxFS products. (See “Feature Enablement Patch Bundle (Feature11i)” on page 116.)
- High Availability Monitors: Updated to support the update of Event Monitoring Service. (See “High Availability Monitors” on page 117.)
- HP Integrity Virtual Machines Provider (VM Provider): Upgrade from A.01.20 to A.03.00 provides support for Windows guests in addition to HP-UX guests. (See “HP Integrity Virtual Machines Provider (VM Provider)” on page 118.)
- HP Integrity Virtual Machines (VMGuestLib): Upgrade from version A.01.20 to A.03.00 includes support for Windows guests. (See “HP Integrity Virtual Machines (VMGuestLib)” on page 119.)
- HP OpenView GlancePlus Pak: Updated to version 4.60 with enhancements including (for OVPA) support for HP Virtual Machine 2.0, configurable logging intervals, additional logging thresholds, flush interval, and (for GlancePlus) `gpm` has been renamed as `xglance`, ability to monitor HP Virtual Machine 2.0 guests from the HPVM host system, and more. (See “HP OpenView GlancePlus Pak” on page 119.)
- HP Partitioning and Virtual Server Environment (see page 121)
 - **New:** HP Application Discovery: Application Discovery agent (`AppDiscAgent`) is default-installed on the OE media. The agent securely supplies data to Application Discovery server at intervals that can be set by a system administrator. (See “HP Application Discovery” on page 122.)

- HP Global Workload Manager: Updated to version A.03.00.00.x with several changes, including: conditional policies that take effect based on Serviceguard events; enablement of use of Temporary Instant Capacity (TiCAP) resources on the policy level; support for Hyper-Threading; new `gwlmsstatus` command; and more. (See “HP Global Workload Manager” on page 123.)
- HP Process Resource Manager: Now provides an interface inside HP Systems Insight Manager; `xprm` interface has been removed. (See “HP Process Resource Manager” on page 125.)
- HP-UX Virtual Partitions: Updated to version A.04.04. Provides support for HP 9000 servers based on the HP sx2000 chipset, support for SCSI tape boot and recovery within a vPars A.04.04 environment for supported HP Integrity servers. Purchased separately. (See “HP-UX Virtual Partitions” on page 126.)
- nPartition Provider: Updated to version B.01.03 with defect fixes. (See “nPartition Provider” on page 126.)
- PRMKernelSW: Formerly PRM Libraries, now known as PRMKernelSW, which contains only the PRM kernel fileset, `PRM-Sw-Krn`. (See “PRMKernelSW (formerly PRM Libraries)” on page 127.)
- PRMLibraries: Now contains PRM API. Previous content of this product is now in the PRMKernelSW product. (See “PRMLibraries” on page 128.)
- Utilization Provider: Updated to version A.01.06.xx.xx to include defect fixes and support for new features of the VSE Management Software. Now provides support for Application Discovery and ServiceGuard failover. (See “Utilization Provider” on page 129.)
- vPar Provider: Provides defect fixes for improving product performance. (See “vPar Provider” on page 130.)
- HP Serviceguard: Updated to version A.11.18. Changes include new, streamlined package-creation process; explicit support for external scripts; general-purpose support for package dependencies on the same node; general-purpose support for multi-node packages (volume groups must be mounted in shared mode); and more. Bundle name changed from T1905BA to T1905CA. (See “HP Serviceguard” on page 131.)
- HP Serviceguard NFS Toolkit: Updated to version A.11.23.07 with fix for a problem with `hanfs.sh` script and a new white paper that describes how Serviceguard NFS Toolkit works with the Cluster File System in a Serviceguard environment. (See “HP Serviceguard NFS Toolkit” on page 132.)
- HP System Management Homepage for HP-UX: Updated to version A.2.2.6.x to incorporate defect fixes. (See “HP System Management Homepage” on page 133.)
- HP Systems Insight Manager: Updated with support for HP VSE Management Software 3.0 products; enhancement to better identify associations between systems when those systems convert to a different subtype; and change in the name of orphan systems. (See “HP Systems Insight Manager” on page 134.)
- HP WBEM Services for HP-UX: Updated to version A.02.05.x, which is a major update to version A.02.00 and is based on OpenPegasus 2.5 source base and CIM Schema 2.9. Key differentiators include association providers, internationalization support for CIM operations, CIM schema upgrade, and more. Bundle name changed from B8465BA to `WBEMSVCS`. (See “HP WBEM Services for HP-UX” on page 136.)

- **HP-UX Kernel Configuration:** Now available as a tool in the HP System Management Homepage. TUI is no longer ObAM-based. (See “HP-UX Kernel Configuration” on page 137.)
- **HP-UX WBEM Fibre Channel Provider:** Updated to version 11.23.0706. New Consolidated Status Provider (CSP), new Indication Provider, and contains defect fixes. (See “HP-UX WBEM Fibre Channel Provider” on page 139.)
- **New:** **HP-UX WBEM File System Provider:** Makes available file system information. The FSProvider instruments the *HPUX_HFS*, *HP_LOFS*, *HP_CDFS*, *HP_VxFS*, *HP_NFS*, *HP_MountPoint* and *HPUX_Mount* classes. (See “HP-UX WBEM File System Provider” on page 139.)
- **New:** **HP-UX WBEM IOTree Indication Provider:** Enables management clients to subscribe to WBEM indications. Indication consumers can receive indications whenever there is a state change in the hot swappable slots of the PCI-IO sub-system. (See “HP-UX WBEM IOTree Indication Provider” on page 140.)
- **HP-UX WBEM LAN Provider for Ethernet Interfaces:** Delivers two new providers: HP-UX LAN Indication Provider and LAN Consolidated Status Provider. Installation of DLPI patch *PHNE_35545* is recommended. (See “HP-UX WBEM LAN Provider for Ethernet Interfaces” on page 141.)
- **HP-UX WBEM LVM Provider:** Updated to version 11.23.008 to incorporate defect fixes. (See “HP-UX WBEM LVM Provider” on page 143.)
- **New:** **HP-UX WBEM RAIDSA Provider:** Used by client applications to determine information about Smart Array HBAs present on the system. (See “HP-UX WBEM RAIDSA Provider” on page 144.)
- **New:** **HP-UX WBEM SAS Provider:** Used by client applications to determine information about SAS HBAs present on the system. (See “HP-UX WBEM SAS Provider” on page 145.)
- **HP-UX WBEM SCSI Provider:** Updated to version 11.23.0706. Supports Consolidated Status Provider feature and contains defect fixes. (See “HP-UX WBEM SCSI Provider” on page 145.)
- **Ignite-UX:** Updated to version *C.7.2.xx*. This is the final Ignite-UX release supporting HP-UX 11.00 installation and recovery. Significant changes to the default system configuration for HP-UX 11i v2 have been made to support software added to HP-UX after initial release, better handle larger mass storage devices and support future updates to other HP-UX releases. Will now recover the Memory File System (MemFS) configuration. Has introduced the ability to block particular paths and protocols during inventory. An example script has been added to simplify creation of recovery DVD media. Support for new hardware and defect fixes. (See “Ignite-UX” on page 146.)
- **ObsIOTreePro:** Upon update from HP-UX 11i v1 to HP-UX 11i v2, will remove the ISU IOTree Provider product and will retain the core IOTree Indication Provider product. (See “HP-UX WBEM IOTree Indication Provider” on page 140.)
- **Obsolescence Bundle:** Used during an update, automatically removes obsolete or incompatible products and/or drivers. (See “Online Diagnostics” on page 149.)

- **Online Diagnostics:** Updated to support Emulex PCI-e Fibre Channel Mass Storage Adapters AD299A and AD355A. The new monitor for these cards (`dm_fc1p_adapter`) is included in this release for Itanium®-based systems. Other I/O devices, as well as new systems and storage arrays are also supported. (See “Online Diagnostics” on page 149.)
- **Quality Pack Patch Bundles:** Updated for the HP-UX 11i v2 (B.11.23) June 2007 release. (See “Quality Pack Patch Bundles” on page 151.)
- **Software Distributor:** Updated to incorporate defect fixes. (See “Software Distributor” on page 152.)
- **Software Package Builder:** Updated to incorporate defect fixes, including quality improvements to the manpage and graphical user interface (GUI). (See “Software Package Builder” on page 152.)
- **System Fault Management:** Updated with changes including new providers, the choice of the `SFMIndicationProvider` instead of EMS Hardware Monitors on Itanium®-based systems, the ability to view indications generated by the High Availability Monitors, and more. (See “System Fault Management” on page 154.)
- **Update-UX:** Updated to reflect defect fixes. There are no new features or functionality in `update-ux`. (See “Update-UX” on page 156.)

Chapter 6: “Disk and File Management” (see page 157)

- **HP CIFS Client:** Updated to version A.02.02.01 with support for MS Distributed File System (DFS) and new configuration parameters; and other features. (See “HP CIFS Client” on page 158.)
- **HP CIFS Server:** Updated to 3.0g version A.02.03.01. Based on Samba 3.0.22 with 3.0.23 selected fixes. Also includes fixes and enhancements provided in HP CIFS Server 3.0f version A.02.03. Enhancements include Winbind code re-design and TDB memory map support. (See “HP CIFS Server” on page 160.)

Chapter 7: “Internet and Networking” (see page 163)

- **Firefox and FirefoxSrc:** Updated to version 1.5.0.8. Fixes several security vulnerabilities reported by the Mozilla Foundation. (See “Browsers” on page 164.)
- **New: HP-UX Enhanced Publickey-LDAP:** Enhanced with the `newkey/chkey` commands and the `getpublickey/getsecretkey` APIs. Available on Software Pack. (See “HP-UX Enhanced Publickey-LDAP” on page 165.)
- **HP-UX Web Server Suite** (see page 167)
 - **HP-UX Apache-based Web Server:** Updated to version 2.0.58.01 as primarily a security/defect fix release. (See “HP-UX Apache-based Web Server” on page 168.)
 - **HP-UX Tomcat-based Servlet Engine:** Tomcat upgraded to version 5.5.20.00. (See “HP-UX Tomcat-based Servlet Engine” on page 168.)
 - **HP-UX Webmin-based Admin:** Updated as primarily a defect fix release. Webmin upgraded to 1.070.09. (See “HP-UX Webmin-based Admin” on page 169.)
 - **HP-UX XML Web Server Tools:** XML Web Server tools upgraded to version 2.03. (See “HP-UX XML Web Server Tools” on page 169.)

- **LDAP-UX Integration:** Updated to version B.04.10. Provides defect fix and new features, including Dynamic Group Support, *PAM_AUTHZ* enhancements, and more. (See “LDAP-UX Integration” on page 170.)
- **Mozilla:** Updated to 1.7.13.01. Contains security fixes. (See “Browsers” on page 164.)
- **Netscape Directory Server for HP-UX:** Updated to B.06.21.50. Contains defect fixes in addition to new features provided in version B.06.21, including support for four-way multi-master replication, support for fine-grained password policy, and more. (See “Netscape Directory Server for HP-UX” on page 172.)
- **Red Hat Directory Server for HP-UX:** Updated to version B.07.10.20.20 to provide defect fixes. (See “Red Hat Directory Server for HP-UX” on page 174.)
- **Thunderbird and ThunderbirdSrc:** Updated to 1.5.08.00. Fixes several security vulnerabilities reported by the Mozilla Foundation. (See “Browsers” on page 164.)

Chapter 8: “Security” (see page 177)

- **HP-UX Bastille:** With version 3.0.x, new enhancements, capabilities, features, and benefits (including *bastille_drift* analysis) represent additional items that Bastille will be able to lock down, additional usability improvements, and a new ability for Bastille to ensure that each cluster node has a consistent set of security settings. Bundle name changed from B6849AA to *HPUXBastille*. (See “HP-UX Bastille” on page 178.)
- **HP-UX Host Intrusion Detection System:** Updated to version 4.1. Supports an alert volume reduction feature; enables the generation of customized and consolidated alert reports that are easy to view and print; provides a tuning tool that reduces the time and effort to deploy and maintain Surveillance Schedules; and more. (See “HP-UX Host Intrusion Detection System” on page 179.)
- **HP-UX IPFilter:** Updated to version A.03.05.14 with Filtering for IPv6 packets equivalent to IPv4 packet filtering while maintaining IPv4 support; Stateful filtering for TCP (limited stateful filtering for UDP and ICMPv6); IPv6 fragmentation support (the ability to block fragmented traffic); and other changes. (See “HP-UX IPFilter” on page 181.)
- **HP-UX Security Attributes Configuration:** Defects are fixed in this release. (See “HP-UX Security Attributes Configuration” on page 183.)
- **Install-Time Security:** Includes the bundles *Sec00Tools*, *Sec10Host*, *Sec20MngDMZ*, and *Sec30DMZ*. Updated to version 1.4.x with new questions/configuration, diagnostic daemon configure to local-only use (not network), and *syslog* local-only. (See “Install-Time Security” on page 184.)
- **OpenSSL:** Updated to version A.00.09.071.003. Incorporates defect fixes. If OpenSSL A.00.09.08d is enabled, additional security features are available. (See “OpenSSL” on page 185.)
- **HP-UX Role-based Access Control:** Updated to version B.11.23.04 with introduction of a set of “privilege shells,” integration with HP System Management Homepage, integration with select commands, and defect fixes. Available on Software Pack. (See “HP-UX Role-based Access Control” on page 187.)
- **HP-UX Secure Shell:** Updated to version A.04.40.011. Features include change to *ssh* *ControlMaster* directive for Connection Sharing; improved performance for remote-to-local and local-to-remote file transfers; and features introduced in OpenSSH4.4p1. (See “HP-UX Secure Shell” on page 188.)

- **New:** HP-UX Software Assistant: A command-line based tool that consolidates and simplifies patch management and security bulletin management on HP-UX systems. (See “HP-UX Software Assistant” on page 189.)
- HP-UX Standard Mode Security Extensions: Version B.11.23.02 introduces integration with HP-UX Role-based Access Control, allowing more granular access controls. In addition, also introduces the `userstat` command for querying the status of user account information. Available on Software Pack. (See “HP-UX Standard Mode Security Extensions” on page 191.)

Chapter 9: “Commands and System Calls” (see page 193)

- **New:** LoginNLS: Version B.11.23.01. Provides French Native language support for `login` (1). Available on Software Pack. (See “LoginNLS” on page 194.)
- **New:** TRUFGREP: Provides a new command - `trufgrep` (1), which searches the input text files for a pattern. Uses a different algorithm to implement `fgrep` (1). Available on Software Pack. (See “trufgrep Command” on page 195.)
- **New:** `usermod` Command Enhancement (Restricted Movement of Home Directories): With this enhancement, `usermod` (1M) can selectively prevent the movement of home directories with the `-m` option. Available on Software Pack. (See “usermod Command Enhancement (Restricted Movement of Home Directories)” on page 195.)

Chapter 10: “Libraries and Programming” (see page 197)

- HP MPI: Updated to version 2.2.5 with MPI-2 name publishing support, new `mpirun` option `-netaddr`, and new environment variables. (See “HP MPI” on page 198.)
- HP-UX Java Development Kit and HP-UX Java Runtime Environment for the Java™ 2 Platform Standard Edition (JDK/JRE): Versions 1.4 and 5.0 (1.5) of the JDK/JRE, Add-ons, and Plugins updated to incorporate defect fixes. (See “Java JDK/JRE for HP-UX” on page 199.)
- Perl: Updated to version 5.8.8 build 817.1 with improvements to performance, changes to several commands, defect fixes, and much more. (See “Perl” on page 200.)

Chapter 11: “Internationalization” (see page 203)

- No changes in this release.

Chapter 12: “Other Functionality” (see page 205)

- No changes in this release.

What is New in the September 2006 Release?

In the following summaries, you can obtain a general picture of how the September 2006 release of HP-UX 11i v2 differs from the June 2006 release of HP-UX 11i v2. For further information, see the indicated chapters in the *HP-UX 11i Version 2 September 2006 Release Notes*, available in its most current version at <http://www.docs.hp.com/hpux/os/11iV2/>.

The following summaries are not exhaustive, so HP strongly recommends that you consult the *HP-UX 11i Version 2 September 2006 Release Notes* for information that is not included here.

September 2006 Release Notes, Chapter 4: “Hardware-Specific Information”

- **CommonIO Bundle:** Updated with packaging changes.
- **Hardware Enablement Patch Bundle for HP-UX 11i v2 (HWEEnable11i):** Includes future HP-UX support for PCI-Express I/O adapters, in addition to the latest changes for the new Dual-Core Intel® Itanium® 2 processors in the following HP servers.
- **Networking and Mass Storage Drivers**
 - **FibrChan1-01:** Updated with quality and diagnostic improvements.
 - **GigEther-01:** Updated to version 11.23.0609 to pre-enable future technology.
 - **IEther-00:** Updated to version 11.23.0609 to pre-enable future technology.
 - **New Product:** **PCIMUX-00:** Supports the AD278A and AD279A cards.
 - **RAID-01:** Updated with quality and diagnostic improvements, and defect fixes.
 - **scsiU320-00:** Updated with quality and diagnostic improvements for Ultra320 SCSI solutions.
 - **SerialSCSI-00:** Updated with quality improvements.
 - **USB-00:** Updated to version C.01.04.01 with quality improvements. Now supports the A6869A and A6869B cards.
- **Utility Pricing Solutions**
 - **HP Instant Capacity:** Updated to version B.11.23.08.00.01 to incorporate defect fixes related to powered-off cells and remote complexes.
 - **HP Pay per use:** Updated to version B.11.23.08.00.01 to incorporate a defect fix.

September 2006 Release Notes, Chapter 5: “General System Administration”

- **Distributed Systems Administration Utilities:** Updated to V1.2 with updated and enhanced features to `csync_wizard`, enhanced consolidated logging, and a new command, `cwall`, as well as other changes.
- **Feature Enablement Patch Bundle (FEATURE11i):** Added new patches for HP Integrity Virtual Machines (HPVM), HPDesktopDev, and Veritas products.
- **HP Integrity Virtual Machines Provider (VMProvider):** Updated to version A.01.20.69 with support for Windows on Integrity as well as HP-UX guests.
- **HP Integrity VM Support Library (VMGuestLib):** Updated to version A.01.20.69 to incorporate defect fixes.
- **HP Partitioning**
 - **HP Global Workload Manager:** Updated to version A.02.50.00.x with ability to nest partitions (with gWLM managing resources for all the partition types); ability to display and compare previous configurations; and ability to use Java JRE/JDK 1.4.2 or Java 1.5 (5.0); as well as other changes.

- HP Process Resource Manager: Updated to version C.03.02 with HP System Management Homepage integration, ability to map UNIX groups to PRM groups, and extended regular expressions in alternate names for application records.
- HP-UX Virtual Partitions: Provides tape device support on version A.04.03. Purchased separately.
- HP-UX Workload Manager: Updated to version A.03.02 with ability to map UNIX groups to workload groups, extended regular expressions in alternate names for application records, and other changes.
- HP-UX Workload Manager Toolkits: Updated to version A.01.10 with the removal of Pay Per Use Toolkit, including its `utilitydc` command. Bundle name has changed from T1302AA to WLMToolkits.
- nPartition Provider: Updated to version B.23.01.06.02 with the ability to enable and disable Hyper-Threading for nPartitions whose cells have processors that are Hyper-Threading-capable.
- PRMKernelSW (formerly PRM Libraries): Name has changed from “PRM Libraries” to “PRMKernelSW.” No other changes.
- PRMLibraries: Updated to version C.03.02. Now contains the PRM API. Bundle name is PRMLibraries. Previous content now in the PRMKernelSW product.
- HP Serviceguard NFS Toolkit: Updated to version A.11.23.06 with a fix for a problem with the HA-NFS File Lock Migration script, `nfs.flm`.
- HP System Management Homepage: Updated to version A.2.2.4.x to incorporate defect fixes.
- HP Systems Insight Manager: Updated with support for HP BladeSystem C-Class blade and enclosure, delivery of the HP BladeSystem Integrated Manager 2.1, and defect fixes.
- HP WBEM Services for HP-UX: Updated to version A.02.00.11 to incorporate defect fixes.
- HP-UX IPQoS: Will be removed by the Obsolescence Bundle upon update from HP-UX 11i v1 to HP-UX 11i v2. To continue using, you can download the HP-UX IPQoS product for HP-UX 11i v2 free from Software Depot.
- HP-UX WBEM Fibre Channel Provider: Updated to version 11.23.0609.02 to incorporate defect fixes.
- HP-UX WBEM LVM Provider: Updated to version 11.23.007 to incorporate defect fixes.
- HP-UX WBEM SCSI Provider: Updated to version 11.23.050 to incorporate defect fixes, as well as new functionality to provide more management information to the upper layers.
- Ignite-UX: Updated to version C.6.9.x with support for system recovery and system cloning of systems using VxFS 5.0 and VxVM 5.0 (cold install of systems with VxFS 5.0 and VxVM 5.0 not supported); compression of install kernels on B.11.23; support for new hardware enabled by the HP-UX release.
- Online Diagnostics

- OnlineDiag Bundle: Updated with support for legacy functionality of PCI-express host bridge adapter on Zx2 platforms, as well as support for other, future cards.
- SysFaultMgmt (System Fault Management): Updated with support for new platforms and to incorporate defect fixes.
- Quality Pack Patch Bundle: Included in this release as a superset of the March 2006 HP-UX 11i v2 Quality Pack. Not updated in June 2006.
- System Administration Manager: *sam* (1M) command has been deprecated and is planned for future obsolescence.
- Software Distributor: Updated to incorporate defect fixes.
- Update-Ux: Updated to incorporate defect fixes. No new features or functionality.
- Utilization Provider: Updated to version A.01.04.x to incorporate defect fixes.

September 2006 Release Notes, Chapter 6: “Disk and File Management”

- Disks and File Systems: Updated to provide defect fixes and an improved GUI.
- EnableVxFS Bundle: Now supports VxFS 5.0 as well as VxFS 4.1.
- HP CIFS Client: Updated to version A.02.02 with support for MS Distributed File System (DFS), the HP CIFS Client DLKM feature, and new configuration parameters.
- HP CIFS Server: Updated to 3.0e (version A.02.02.01) with minor enhancements and defect fixes.
- HP OnlineJFS 3.5: Updated to improve product quality. Now customer-selectable on all OEs.
- HP OnlineJFS 4.1: Base-VXVM 4.1 is no longer a prerequisite for HP OnlineJFS 4.1. Now always-installed on the EOE and MCOE only.

September 2006 Release Notes, Chapter 7: “Internet and Networking”

- **New Products:** Firefox/Firefox Source: Web browser includes Firefox 1.5.x changes from the Mozilla Foundation. Fixes several security vulnerabilities reported in Firefox 1.5.0.0 from the Mozilla Foundation.
- **New Products:** GTK/GTK Source: Added to support FireFox/Thunderbird.
- GTK+ Libraries: Updated to incorporate a packaging change.
- Mozilla Web Browser: Updated to version 1.7.12.01.x to incorporate a packaging change.
- **New Products:** Thunderbird/Thunderbird Source: Supported email client on HP-UX, provides online browsing and searching tools for HP-UX Integrity and PA-RISC customers.

September 2006 Release Notes, Chapter 8: “Security”

- PAM Kerberos: Now delivered on the HP-UX 11i v2 Operating Environments. Version 1.24 includes a new error message for *pamkrbval* (1M), better troubleshooting, and other changes. Bundle name has changed from J5849AA to PAMKerberos.

- HP-UX Secure Shell: Updated to version A.04.30.007 to incorporate defect fixes.

September 2006 Release Notes, Chapter 9: “Commands and System Calls”

- No changes in this release.

September 2006 Release Notes, Chapter 10: “Libraries and Programming”

- Java 2 Standard Edition Platform
 - HP-UX Java Development Kit and HP-UX Java Runtime Environment for the Java™ 2 Platform Standard Edition (JDK/JRE): Versions 1.4 and 5.0 (1.5) of the JDK/JRE, Add-ons, and Plugins updated to incorporate packaging changes.
 - ObsJava12 (Obsolescence for Java 1.2) and ObsJava13 (Obsolescence for Java 1.3): Updated to incorporate packaging changes.
 - Java Out-of-Box: Updated to version 2.03.07 to incorporate packaging changes.
- Perl: Updated to version 5.8.3 build 809 to incorporate defect fixes.

September 2006 Release Notes, Chapter 11: “Internationalization”

- No changes in this release.

September 2006 Release Notes, Chapter 12: “Other Functionality”

- No changes in this release.

What is New in the June 2006 Release?

In the following summaries, you can obtain a general picture of how the June 2006 release of HP-UX 11i v2 differs from the March 2006 release of HP-UX 11i v2. For further information, see the indicated chapters in the *HP-UX 11i Version 2 June 2006 Release Notes*, available in its most current version at <http://www.docs.hp.com/hpux/os/11iV2/>.

The following summaries are not exhaustive, so HP strongly recommends that you consult the *HP-UX 11i Version 2 June 2006 Release Notes* for information that is not included here.

June 2006 Release Notes, Chapter 4: “Hardware-Specific Information”

- **New Bundle:** CommonIO: Contains common files that are used for multiple drivers. Currently contains infrastructure components for SerialSCSI-00.
- Hardware Enablement Patch Bundle for HP-UX 11i v2 (HWEnable11i): Includes patches for HP servers with the Dual-Core Intel® Itanium® 2 processors.
- HP Instant Support Enterprise Edition: Updated to version A.03.95.057 to incorporate defect fixes.
- Networking and Mass Storage Drivers
 - FibrChan1-01: Includes fixes and support for the newly released AB379A card.

- GigEther-01: Includes changes to Checksum Offload. Supports PCI Error Handling.
- iEther-00: Includes changes to Checksum Offload. Supports PCI Error Handling.
- RAID-01: Updated with quality and diagnostic improvements and defect fixes.
- scsiU320-00: Updated with quality and diagnostic improvements for Ultra320 SCSI solutions. Now always-installed.
- SerialSCSI-00: Updated with quality improvements.
- Utility Pricing Solutions
 - HP Instant Capacity: Updated to version B.11.23.08.00.xx with support for Global Instant Capacity, terminology changes, command enhancements, and other changes.
 - HP Pay per use: Updated to version B.11.23.08.00.xx with terminology changes, support for HP Integrity Virtual Machines, command enhancement, and other changes.

June 2006 Release Notes, Chapter 5: “General System Administration”

- Feature Enablement Patch Bundle (FEATURE11i): Added new patches for HP Integrity Virtual Machines (HPVM).
- HP Integrity Virtual Machines Provider (VMProvider): Updated to version A.01.20 with build and MOF changes to work with the latest WBEM Services, a new interface to get only the IDs of the VMs, and additions to get more VxVM information from each VM.
- HP Integrity VM Support Library (VMGuestLib): Updated to version A.01.20 to incorporate a very minor packaging change.
- HP Partitioning
 - HP Global Workload Manager: Updated to version A.02.00.00.x. Now part of the HP Virtual Server Environment (VSE) Management Software suite, can now manage virtual machines created using the HP Integrity Virtual Machines software, and has other changes.
 - nPartition Provider: Updated to version B.23.01.06.01 to resolve problems and limitations.
 - Partition Manager: Updated to version B.23.02.01.03 to resolve problems and limitations.
 - vPar Provider: Updated to incorporate defect fixes.
- **New Product:** HP Serviceguard WBEM Providers: Will provide current Serviceguard cluster configuration, membership, and status information to Common Information Model (CIM) clients using HP WBEM Services on HP-UX platforms.
- HP System Management Homepage: Updated to version A.2.2.3 to incorporate defect fixes.
- HP WBEM Services for HP-UX: Updated to version A.02.00.10 to incorporate defect fixes.
- HP-UX Kernel Configuration: Updated to incorporate defect fixes.

- **Ignite-UX:** Ignite-UX 11i v1 (B.11.11) installation kernel now includes the 4 GB patch to support files on ISO9660 media (CDFS) that are greater than 2 GB in size. SAS support is introduced, as well as the use of `ssh` for the creation of recovery images, providing enhanced security.
- **Online Diagnostics**
 - **OnlineDiag Bundle:** Updated to support AD279A, AD278A, AB345C, and AB286C cards, as well as pre-enables future cards. The new Serial-Attached SCSI (SAS) Mass Storage Adapter Monitor (`dm_sas_adapter`) is included for Itanium®-based systems.
 - **SysFaultMgmt Bundle:** Updated version introduces new indication provider `SFMIndicationProvider`, which replaces some EMS monitors; provides LED reporting on Field Replaceable Units; and other changes, including defect fixes.
- **Quality Pack Patch Bundle:** Not updated in June 2006 release. March 2006 QPK was carried forward into this release. Next QPK update will occur in the September 2006 release.
- **Software Distributor:** Updated to incorporate defect fixes.
- **Update-UX:** Updated to reflect defect fixes. No new features or functionality.
- **Utilization Provider:** Updated to version A.01.03 to include defect fixes.

June 2006 Release Notes, Chapter 6: “Disk and File Management”

- **EnableVxFS Bundle:** Now a customer-selectable product in the June 2006 release of HP-UX 11i v2 (formerly, was always-installed).
- **VERITAS File System (HP JFS/HP OnlineJFS):** HP OnlineJFS 4.1 (B3929EA): Updated to incorporate a defect fix. Base-VXVM 4.1 is now a prerequisite for HP OnlineJFS 4.1.

June 2006 Release Notes, Chapter 7: “Internet and Networking”

- **GTK+ Libraries:** Updated to incorporate a packaging change.
- **HP-UX Web Server Suite**
 - **HP-UX Apache-based Web Server:** Updated to v.2.0.55.03 as primarily a security/bug fix release.
 - **HP-UX Tomcat-based Servlet Engine:** Updated to version 5.5.9.04 to incorporate defect fixes.
 - **HP-UX Webmin-based Admin:** Updated to version 1.070.07 as primarily a bug fix release.
- **Mozilla Web Browser:** Updated to version 1.7.12.01.01 to incorporate a packaging change.

June 2006 Release Notes, Chapter 8: “Security”

- **HP-UX OpenSSL:** Updated to provide more stringent error checking and general defect fixes.
- **HP-UX Role-based Access Control:** Updated with a usability enhancement known as “Hierarchical Roles” that allows you to define relationships between roles. Also includes defect fixes.

- **HP-UX Secure Shell:** Updated to version A.04.20.009 with High Performance Enabled SSH/SCP and Auth Selection patches, new configuration directives in the server, increase in the default size of RSA and DSA keys, delayed compression, and other changes.
- **SecurityExt Bundle:** Updated to version B.11.23.02 with update of HP-UX Role-based Access Control and new manpages. Available on Software Pack.

June 2006 Release Notes, Chapter 9: “Commands and System Calls”

- No changes in this release.

June 2006 Release Notes, Chapter 10: “Libraries and Programming”

- **HP MPI:** Updated to version 2.2 with C++ bindings, new `mpirun` command line options, MPI-2 supported ROMIO, CPU bind support, signal propagation, scalability, and new environment variables.
- **Java 2 Standard Edition Platform**
 - **HP-UX Java Development Kit and HP-UX Java Runtime Environment for the Java™ 2 Platform Standard Edition (JDK/JRE):** Versions 1.4 and 5.0 (1.5) of the JDK/JRE, Add-ons, and Plugins updated to incorporate defect fixes as well as packaging changes.
 - **Java Out-of-Box:** Updated to version 2.03.05 to incorporate packaging changes.
- **Perl:** Updated to version 5.8.3 build 809. Includes changes to the hash code, to the Perl API, and to some C macros, as well as other changes.

June 2006 Release Notes, Chapter 11: “Internationalization”

- No changes in this release.

June 2006 Release Notes, Chapter 12: “Other Functionality”

- No changes in this release.

What is New in the March 2006 Release?

In the following summaries, you can obtain a general picture of how the March 2006 release of HP-UX 11i v2 differs from the December 2005 release of HP-UX 11i v2. For further information, see the indicated chapters in the *HP-UX 11i Version 2 March 2006 Release Notes*, available in its most current version at <http://www.docs.hp.com/hpux/os/11iV2/>.

The following summaries are not exhaustive, so HP strongly recommends that you consult the *HP-UX 11i Version 2 March 2006 Release Notes* for information that is not included here.

March 2006 Release Notes, Chapter 4: “Server-Specific Information”

- **Hardware Enablement Patch Bundle:** New servers with the sx2000 chipset now qualified.

- HP Instant Support Enterprise Edition: Updated to version A.03.95.043 to incorporate defect fixes.
- Networking and Mass Storage Drivers
 - HyprFabrC-00: Updated to support large user count. Erratum: At the initial release of HP-UX 11i v2, the `/opt/clic/bin/clic_probe` superseded the `/opt/clic/bin/clic_ping` utility.
 - scsiU320-00: Updated to version B.11.23.0603 with disablement of Quick Arbitration and Selection (QAS), significantly reducing the occurrence of any SCSI-related issues seen in a mixed speed disk configuration.
 - SerialSCSI-00: Updated with quality improvements. Added in December 2005 to support future cards.
 - USB-00: Updated to version C.01.03.01 with various quality improvements from previous releases, a dynamically managed device file system, and USB mass storage encryption support.
- **New Product:** PCI Error Handling: Allows an HP-UX system to avoid a Machine Check Abort (MCA) or a High Priority Machine Check (HPMC) if a PCI error occurs. Now available on Software Pack media.

March 2006 Release Notes, Chapter 5: “General System Administration”

- Distributed Systems Administration Utilities: Updated to incorporate defect fixes. Now delivered as a default-installed product on all OEs, including the TCOE.
- Enterprise Cluster Master Toolkit: Included documentation for version B.03.00 has been updated to include support for the VERITAS Cluster File System (CFS) in selected HP Serviceguard Storage Management Suite bundles.
- Feature Enablement Patch Bundle (FEATURE11i): Added new patches for VERITAS and Infiniband.
- HP Partitioning
 - HP Global Workload Manager: CMS updated to version A.01.01.02 with changes, new features, and defect fixes for a more robust product. The CMS is now delivered via HP Software Depot at <http://hp.com/go/softwaredepot>.
 - HP Process Resource Manager: Updated to version C.03.01 with integration with HP SIM and ability to control shared memory. Now works inside HP Integrity Virtual Machines.
 - HP-UX Virtual Partitions: Updated to version A.04.02 with flexible administration capabilities, additional CPU support, and customer-requested fixes. Purchased separately.

NOTE

Correction: HP-UX Virtual Partitions version A.04.02 does not provide tape device support on PA-RISC servers and DRD integration, as was previously documented in the *HP-UX 11i v2 March 2006 Release Notes*.

- HP-UX Workload Manager: Updated to version A.03.01 with more flexibility in process placement, more workload groups, and more management combinations.

- HP-UX Workload Manager Toolkits: Updated to version A.01.09 with an SAP Toolkit to simplify integration between SAP and WLM.
- PRM Libraries: PRM-Sw-Krn fileset has been updated to version C.01.04 to incorporate defect fixes.
- HP Serviceguard: Included documentation for version A.11.17 has been updated to include support for the VERITAS Cluster File System (CFS) in selected HP Serviceguard Storage Management Suite bundles.
- HP Serviceguard NFS Toolkit: Updated to incorporate a defect fix.
- HP System Management Homepage: Updated to version A.2.2.2 with defect fixes as well as improved event and hardware management.
- HP Systems Insight Manager: Updated with support for integration with HP Storage Essentials Enterprise Edition, integration with HP ProLiant Essentials Virtual Machine Management Pack, and integration with HP ProLiant Essentials Server Migration Pack.
- HP WBEM Services for HP-UX: Updated to version A.02.00.09 to incorporate defect fixes.
- HP-UX Accounts for Users and Groups tool: Updated to incorporate defect fixes.
- HP-UX WBEM Fibre Channel Provider: Updated to version 11.23.0603.02 to incorporate defect fixes. No new functionality.
- HP-UX WBEM LVM Provider: Updated to version 11.23.005 to incorporate defect fixes. No new functionality.
- HP-UX WBEM SCSI Provider: Updated to version 11.23.010 to incorporate defect fixes. No new functionality.
- Ignite-UX: Updated to version C.6.7.x with defect fixes and security improvements.
- Online Diagnostics
 - OnlineDiag Bundle: Updated to enable new HP servers.
 - **New Product:** SysFaultMgmt Bundle: Provides System Fault Management, a collection of tools for monitoring the health of HP servers and receiving information about hardware such as memory, CPU, power supplies, and cooling devices.
- Quality Pack Patch Bundle: Included in this release as a superset of the December 2005 HP-UX 11i v2 Quality Pack.
- Software Distributor: Updated to incorporate defect fixes.
- Update-UX: Updated to incorporate defect fixes.
- Utilization Provider: Updated to version A.01.01 to provide defect fixes which enable utilization data to be more reliable for resource partitions and systems that contain more than 255 active disks.

March 2006 Release Notes, Chapter 6: “Disk and File Management”

- HP CIFS Server: Updated to 3.0d (version A.02.02) with fixes and functionality from the new Samba base (version 3.0.14a), including support for the idmap_rid facility and support for publishing printers in an MS Windows 2000/2003 ADS domain, as well as other enhancements.

- HP OnlineJFS: Version 1.4 is now “customer-selectable” instead of “default-installed” as in the previous release.

March 2006 Release Notes, Chapter 7: “Internet and Networking”

- Mozilla for HP-UX: Updated to version 1.7.12.01 with enhancements including improved Asian font support, the Japanese Language Pack, and fixes for security vulnerabilities.
- **New Product:** Red Hat Directory Server for HP-UX: Version B.07.10.10 added to HP-UX 11i v2 with Windows user synchronization, get effective rights control, wide-area network replication, fractional replication, and other features.

March 2006 Release Notes, Chapter 8: “Security”

- HP-UX Host Intrusion Detection System: Updated to version 4.0 with new features and enhancements, including support for reduction of alert volume by aggregation, reduction of alert volume by monitoring only critical files, the ability to specify critical users, and more.
- HP-UX Security Attributes Configuration tool: Updated to incorporate defect fixes.
- OpenSSL: Has a new version number due to a packaging change. No change in functionality.

March 2006 Release Notes, Chapter 9: “Commands and System Calls”

- No changes in this release.

March 2006 Release Notes, Chapter 10: “Libraries and Programming”

- Java 2 Standard Edition Platform
 - HP 3D Technology for the Java™ 2 Standard Edition Platform: Upon installation of the OEs, v1.3 will be removed by the ObsJava13 bundle.
 - HP-UX Java Development Kit and HP-UX Java Runtime Environment for the Java™ 2 Platform Standard Edition (JDK/JRE): Version 5.0 updated to incorporate defect fixes. Now included in the TCOE. ObsJava13 bundle will remove SDK/RTE and Plug-In 1.3.
 - Java Out-of-Box: Updated to incorporate defect fixes.
- Perl: Updated to incorporate defect fixes.

March 2006 Release Notes, Chapter 11: “Internationalization”

- No changes in this release.

March 2006 Release Notes, Chapter 12: “Other Functionality”

- No changes in this release.

What is New in the December 2005 Release?

In the following summaries, you can obtain a general picture of how the December 2005 release of HP-UX 11i v2 differs from the May 2005 release of HP-UX 11i v2. For further information, see the indicated chapters in the *HP-UX 11i Version 2 December 2005 Release Notes*, available in its most current version at <http://www.docs.hp.com/hpux/os/11iv2/>.

The following summaries are not exhaustive, so HP strongly recommends you consult the *HP-UX 11i Version 2 December 2005 Release Notes* for information that is not included here.

December 2005 Release Notes, Chapter 2: “Introduction to HP-UX 11i Version 2”

- HP-UX 11i v2 Minimal Technical Operating Environment (MTOE): May 2005 was last release that included the Minimal Technical OE (MTOE). After May 2005, the HP-UX 11i v2 MTOE is no longer available.

December 2005 Release Notes, Chapter 4: “Server-Specific Information”

- Hardware Enablement Patch Bundle (HWEnable11i): Added support for hp BladeSystems Itanium BL60p servers. Several I/O driver bundles added or updated.
- HP Instant Support Enterprise Edition (ISEE): Updated to incorporate defect fixes and feature enhancements.
- Networking and Mass Storage Drivers
 - 10GigEthr-00: The ixgbe driver updated to version B.11.23.06 for December 2005. With the installation of separately available patches, the driver supports port-based steering multiqueue and TCP packet-reassembly in the driver.
 - FibrChanl-00: Updated to incorporate driver fixes.
 - FibrChanl-01: Updated to version B.11.23.04.01 with defect fixes and support for to-be-released AB378A and AB379A cards.
 - GigEther-00: Updated to incorporate defect fixes.
 - RAID-01: Updated to incorporate defect fixes.
 - scsiU320-00: Updated with quality and diagnostic improvements for Ultra320 SCSI solutions.
 - **New Product:** SerialSCSI-00: Added to the HP-UX 11i v2 Operating Environments to support cards that will be released in the future.
 - USB-00: Updated to version C.01.02.01 with quality improvements.
- Supported Systems: HP-UX 11i v2 not supported on HP Workstations.

December 2005 Release Notes, Chapter 5: “General System Administration”

- **New Product:** Distributed Systems Administration Utilities: Improves manageability of distributed systems and Serviceguard clusters.
- Enterprise Cluster Master Toolkit: Updated to version B.03.00 with defect fixes and Support for Cluster File System (CFS) in a Serviceguard A.11.17 environment.

- **Event Monitoring Services:** Updated to incorporate defect fixes. Will be deprecated post HP-UX 11i v3.
- **Feature Enablement Patch Bundle (FEATURE11i):** Provides new patches required for vPars, VERITAS products, Infiniband, and Serial SCSI functionality.
- **GlancePlus Pak:** Updated to version C.04.50 with elimination of the dependency of `ttd` to have `rpcbind` or `portmap` running; support for both HTTP and HTTPS-based single port communication; replacement of `perfalarm` by DCE-based alarm management daemon, `alarmgen`; new metrics and other enhancements.
- **High Availability Monitors:** Updated to support the update of Event Monitoring Service (EMS).
- **New Product:** HP Integrity Virtual Machines Provider: Allows HP Systems Insight Manager (SIM) to display information about HP systems that support HP Integrity Virtual Machines. Not invoked directly by the user.
- **New Product:** HP Integrity VM Support Library (`VMGuestLib`): Subset of the HP Integrity Virtual Machines API Library used by HP Integrity Virtual Machines Provider.
- **HP Partitioning**
 - **HP Global Workload Manager: Central Management Server (CMS),** one of the gWLM components that was delivered on the AR media, has been removed from the media.
 - **HP-UX Workload Manager:** Updated to version A.03.00.01 with cleaner installations and the ability to manage a complex with mixed architectures.
 - **nPartition Provider:** Updated to version B.23.01.05.01 to add support for new cell-based HP servers.
 - **Partition Manager v2.0:** Updated to version B.23.02.01.02 to add support for new cell-based HP servers, improvements under HP SIM and HP SMH, and defect fixes.
 - **New Product:** vPar Provider: Used by HP WBEM Services for HP-UX to extract information about virtual partitions on the system.
- **HP Serviceguard:** Updated to version A.11.17 with support for HP-UX 11i Security Containment, HP Fabric Clustering System for Infiniband, and Distributed Systems Administration Utilities. Includes enhanced security, a new command option, and a change in memory allocation, as well as other changes.
- **HP Serviceguard NFS Toolkit:** Updated to version A.11.23.04 to incorporate fixes for two defects.
- **HP System Management Homepage (SysMgmtWeb):** Updated to version 2.2.1.x with integration of SAM Web-based applications; support for legacy SAM X Launch; WBEM-based property pages for OS and software information.
- **HP Systems Insight Manager:** Updated to version 5.0 with numerous enhancements, including the ability to view more information and perform more tasks; new CLI commands; a First Time Wizard; support for Oracle databases; and other enhancements.
- **HP WBEM Services for HP-UX:** Updated to version A.02.00.08 to incorporate defect fixes.

- **New Product:** HP-UX Accounts for Users and Groups: Web-based tool (`ugweb`) allows the user to manage the local user accounts, NIS user accounts and groups.
- HP-UX Kernel Configuration: Now a plug-in tool in the HP System Management Homepage. TUI changed from previous ObAM-based TUI.
- HP-UX Peripheral Device Tool: Updated to version B11.23.05. The `waconf` (1M) command and the `WEB-ADM` fileset now obsolete and replaced by the HP System Management Homepage, which now integrates the HP-UX Peripheral Device Tool.
- **New Product:** HP-UX WBEM Fibre Channel Provider: Used by client applications to determine information about Fibre Channel HBAs and their properties.
- **New Product:** HP-UX WBEM LAN Provider for Ethernet Interfaces: Used by client applications to determine 100bt and Gigabit links available on the system and collect information about them.
- **New Product:** HP-UX WBEM LVM Provider: Used by client applications to determine information about the LVM via HP WBEM Services for HP-UX.
- **New Product:** HP-UX WBEM SCSI Provider: Used by client applications to determine information about SCSI HBAs present on the system.
- Ignite-UX: Updated to version C.6.5.x with updated documentation, defect fixes, enhancements, and support for VxVM 4.1. No longer supports HP-UX 11i v1.6 (B.11.22). For December 2005, available only on the AR DVD; it is not included in the December 2005 Operating Environments.
- Obsolescence Bundle: Upon update to December 2005, now removes MySQL in addition to other obsolete products.
- Online Diagnostics: Updated to include HPVM enablement, as well as integration of `slview` with HP System Management Homepage.
- Quality Pack Patch Bundle: Included in this release as a superset of the May 2005 HP-UX 11i v2 Quality Pack.
- Software Distributor: Updated to incorporate defect fixes.
- `SysMgmtBASE` bundle: First added to the HP-UX 11i v2 OEs in May 2005, provides the TUI framework for HP-UX Security Configuration tool and HP-UX Kernel Configuration. Updated in December 2005 to incorporate defect fixes.
- Software Package Builder: Updated to incorporate defect fixes.
- Update-UX: Updated to version B.11.23.0512.033. No longer supports update from HP-UX 11i v1.6 (B.11.22) to HP-UX 11i v2 December 2005 or later releases.
- **New Product:** Utilization Provider: Lightweight daemon (`utild`) records system-utilization data on a 5-minute interval.

December 2005 Release Notes, Chapter 6: “Disk and File Management”

- **New Product:** Disks and File Systems (`fsweb`): Provides a GUI to HP-UX system administration tasks.
- **New Bundle:** `EnableVxFS`: Provides libraries and commands for VXFS.
- HP CIFS Client: Updated to version A.02.01 with a substantially revised and improved code base.

- HP CIFS Server: Updated to 3.0c (version A.02.01.02), which is based on Samba 3.0.7 and provides minor enhancements and defect fixes, as well as the new features provided in HP CIFS Server 3.0a (version A.02.01).
- **New Product:** VERITAS File System (HP JFS/HP OnlineJFS): Version 4.1 now available with support for large file systems and large files, as well as other features.
- **New Product:** VERITAS Volume Manager (VxVM): Version 4.1 now available with enhancements including VERITAS Intelligent Storage Provisioning Service, Cross-Platform Data Sharing, and Storage Expert, as well as many other features.

December 2005 Release Notes, Chapter 7: “Internet and Networking”

- HP-UX Web Server Suite:
 - HP-UX Apache-based Web Server: Updated to version 2.0.54.03 as primarily a bug fix release.
 - HP-UX Tomcat-based Servlet Engine: Updated to version 5.5.9.03 with implementation of the Servlet 2.4 and JavaServer Pages 2.0 specifications. Designed to run on JDK and later versions.
 - HP-UX Webmin-based Admin: Updated to version 1.070.05 as primarily a bug fix release.
- **New Product:** LDAP-UX Integration product: Uses LDAP to centralize user, group and network information management in an LDAP directory. Provides functionality to support migration from the NIS or NIS+ environment to an LDAP environment.
- Mozilla for HP-UX: Updated to version 1.7.x with enhancements including improved Asian font support, the Japanese Language Pack, and fixes for security vulnerabilities.
- Netscape Directory Server for HP-UX: Updated to version B.06.21.30 with support for four-way multi-master replication, support for fine-grained password policy, new configuration attributes, and other features and defect fixes.

December 2005 Release Notes, Chapter 8: “Security”

- HP-UX 11i Security Containment provides a highly secure, easy to maintain, and backwards-compatible environment to deploy business applications. Now available on Software Pack media.
- HP-UX IPFilter: Updated to version A.03.05.12 with NOSYNC pre-enablement, RPC enhancements, and defect fixes.
- HP-UX Role-based Access Control: Allows you to distribute administrative responsibilities by creating roles with appropriate authorizations and assigning them to non-root users and groups. Now available on Software Pack media.
- HP-UX Secure Shell: Updated to version A.04.00.003 with address binding for port forwarding connections, remote binding control, hashing of host names and addresses, and other changes.
- **New Product:** HP-UX Security Attributes Configuration tool (*secweb*): Provides a GUI and TUI for configuring the system-wide and per-user values of security attributes of local and Network Information Service (NIS) users.

December 2005 Release Notes, Chapter 9: “Commands and System Calls”

- No changes in this release.

December 2005 Release Notes, Chapter 10: “Libraries and Programming”

- HP MLIB: Updated to version 9.4 with quality enhancements.
- HP MPI: Updated to version 2.1.1 with several enhancements, including additional supported interconnects, and improved gather performance for TCP/IP, alltoall performance and other improvements.
- Java 2 Standard Edition Platform:
 - HP-UX Software Development Kit and Runtime Environment for the Java™ 2 Standard Edition Platform (SDK/RTE) v1.3 and v1.4: Updated to incorporate defect fixes.
 - **New Product:** HP-UX JDK for the Java™ 2 Platform Standard Edition and HP-UX Java Runtime Environment (JDK/JRE) 5.0: New with the December 2005 release of HP-UX 11i v2.
 - Java Out-of-Box: Updated to incorporate defect fixes.
- Judy Libraries: Updated to version B.11.23.04.17 to incorporate packaging changes. Also now removes empty *MANPATH* file that was created at product installation.
- Perl 5.8.3 build 809: Includes better Unicode support and numeric accuracy, new I/O and thread implementation, and other changes.

December 2005 Release Notes, Chapter 11: “Internationalization”

- No changes in this release.

December 2005 Release Notes, Chapter 12: “Other Functionality”

- No changes in this release.

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 chapters in the *HP-UX 11i Version 2 May 2005 Release Notes*, available in its most current version at <http://www.docs.hp.com/hpux/os/11iV2/>.

The following summaries are not exhaustive, so HP strongly recommends that you consult the *HP-UX 11i Version 2 May 2005 Release Notes* for information that is not included here.

May 2005 Release Notes, Chapter 2: “Introduction to HP-UX 11i Version 2”

- 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.

- 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.
- Software Pack: SPK media with optional core enhancements now delivered for HP-UX 11i v2.

May 2005 Release Notes, Chapter 4: “Workstation- and Server-Specific Information”

- Hardware Enablement Patch Bundle (HWEEnable11i): Diagnostics qualified with new DAT and LTO tape drives, and updated for new I/O cards. Updated I/O driver bundles noted.
- HP Instant Support Enterprise Edition (ISEE): Updated to incorporate defect fixes and few feature enhancements.
- Networking and Mass Storage Drivers:
 - **New Product:** 10GigEthr-00: Adds support for the AB287A PCI-X 10 Gigabit Ethernet card. Now available as a selectable product in the OEs.
 - FibrChan1-01: Now supports the AB465A card.
 - GigEther-01: Now supports the AB465A card.
 - IEther-00: Now supports the AB290A and AB545A cards.
 - RAID-01: Updated to incorporate defect fixes.
 - scsiU320-00: Supports the A7173A card and now, the AB290A card.
 - USB-00 version C.01.00: Enables USB DVD boot support for future HP servers. Now an always-installed product for Itanium®-based servers.
- Utility Pricing Solutions:
 - 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.
 - 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.

May 2005 Release Notes, Chapter 5: “General System Administration”

- 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.
- Event Monitoring Services: Now supports the Node and Host Name Expansion feature that is available on Software Pack.
- **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.
- GlancePlus Pak: Updated to version C.03.86 with new `parm` file parameters and new metrics, as well as enhancements to `gpm` and `glance`.
- High Availability Monitors: Now supports the Node and Host Name Expansion feature.

- HP Partitioning:
 - **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.
 - 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.
 - **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.
 - HP-UX Workload Manager: Updated to version A.03.00 with more flexibility in resource management and more secure environments.
 - HP-UX Workload Manager Toolkits: Pay Per Use Toolkit and its `utilitydc` command now deprecated.
 - nPartition Provider: Upgraded to version B.11.23.01.04.00.x to incorporate defect fixes and performance improvements.
 - Partition Manager: Now runs as an application under HP System Management Homepage, which has several effects.
 - 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.
 - **New Product:** vPar Provider: Extracts information about virtual partitions on a system. Now delivered with HP-UX 11i v2.
- HP Servicecontrol Manager: Replaced by HP Systems Insight Manager.
- 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. Note that Serviceguard uses ports and services which may be disabled or blocked in certain Bastille configurations, security levels, or firewall configurations. Thus Serviceguard is incompatible with those specific configurations.
- HP Serviceguard NFS Toolkit: Updated to version A.11.23.03 with improved failover performance for `rpcbind` failures, as well as defect fixes.
- **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.
- **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.

- 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.
- Ignite-UX: Updated to version C.6.2.x with updated documentation, defect fixes, and enhancements.
- Kernel tunable `hdlpreg_hash_locks`: Deprecated and planned for future obsolescence.
- **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.
- Obsolescence Bundle: Now removes ObAM 5 and HP-UX Software Development Kit and Runtime Environment for the Java® 2 Standard Edition Platform (SDK/RTE) v1.2, in addition to other obsolete products, upon installation of HP-UX 11i v2 May 2005.
- 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.
- Quality Pack: Once again HP-UX 11i v2 includes Quality Pack, as will future releases of HP-UX 11i v2.
- Software Distributor: Updated with new versions of the `gzip` and `swpackage` commands to provide added capability and increased performance.
- Software Package Builder: Updated with product enhancements.
- Update-UX: Updated to reflect defect fixes. No new features or functionality.
- Upper Layer Module (ULM) Services: Deprecated.

May 2005 Release Notes, Chapter 6: “Disk and File Management”

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

May 2005 Release Notes, Chapter 7: “Internet and Networking”

- 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.
- HP-UX Web Server Suite:
 - HP-UX Apache-based Web Server: Updated to v.2.0.53.00 as primarily a security and bug fix release.

- 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.
- HP-UX Webmin-based Admin: Updated as primarily a security and bug fix release.
- Netscape Directory Server for HP-UX: Updated to version B.06.11.30.001 to provide defect fixes and a minor packaging change.

May 2005 Release Notes, Chapter 8: “Security”

- **New Product:** HP-UX 11i Security Containment: Provides the next generation of security features. Available on the Web at <http://hp.com/go/softwaredepot> and expected to be released in the near future.
- 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.
- HP-UX Host Intrusion Detection System: Upgraded to release 3.1 with better performance and CPU utilization, as well as many enhancements and defect fixes. HP-UX HIDS v2.x deprecated and planned for future obsolescence. You are strongly encouraged to upgrade to the latest version of HIDS.
- HP-UX IPFilter: Updated to version A.03.05.11.01 with defect fixes and performance enhancements.
- 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.
- **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.
- **New Bundle:** HP-UX Standard Mode Security Extensions: Enables new security features to be used in standard mode. Now available on Software Pack.
- OpenSSL: Updated to version A.00.09.07e with automatic generation of a self-signed host certificate and a private key.

May 2005 Release Notes, Chapter 9: “Commands and System Calls”

- 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.
- 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.
- 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.

May 2005 Release Notes, Chapter 10: “Libraries and Programming”

- 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.

- HP MPI: Updated to version 2.1.1 with support for InfiniBand on Intel® Itanium®, HyperFabric2, and TCP/IP on clusters. Includes improved gather performance for TCP/IP, and other improvements.
- Java 2 Standard Edition Platform:
 - 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.
 - Java for HP-UX Add-on Standard C++ Runtime Libraries: Updated to coincide with the updating of SDK and RTE.
 - 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.
 - ObsJava12: Added to remove previously-installed Java version 1.2.
- Perl 5.8.2 build 808: Includes better Unicode support and numeric accuracy, new I/O and thread implementation, and other changes.
- **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.
- 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 media.
- 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.

May 2005 Release Notes, Chapter 11: “Internationalization”

- No changes in this release.

May 2005 Release Notes, Chapter 12: “Other Functionality”

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

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 HP strongly recommends 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 61)
2. What is New in September 2004 for Existing Customers of HP-UX 11i v2? (see page 70)

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 70 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-obsolete `ShmemExtensions` product. Maximum for the `shmmnri` 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 (PPPo6).
- 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 `settone` and `settone_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 61.

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 `setttune` and `setttune_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` is now the supported `xterm` and is delivered under `/usr/bin/X11`. The X11R5-based `xterm` is no longer supported and has been moved to `/usr/contrib/bin/X11R5/`.
- 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 HP strongly recommends 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 HP strongly recommends 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: The `/opt/clic/bin/clic_probe` has superseded the `/opt/clic/bin/clic_ping` utility.
 - 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 not 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 `otsshowsaps` (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 stack 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 1.0.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-UX 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 `ioctl`s `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®2-based 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.

NOTE

The HP Wildebeest Debugger (WDB) has been updated since the initial release of HP-UX 11i v2. For the most current information, visit <http://www.hp.com/go/wdb>.

- 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.

What is in This Chapter?

This chapter describes hardware-specific information, including the following:

- Hardware Enablement Patch Bundle for HP-UX 11i v2 (see page 92)
- HP Instant Support Enterprise Edition (see page 93)
- Networking and Mass Storage Drivers (see page 94)
 - Always-Installed Networking Drivers (see page 95)
 - IETHER-00 (see page 95)
 - Selectable Networking Drivers (see page 96)
 - 10GigEthr-00 (see page 96)
 - Always-Installed Mass Storage Drivers (see page 97)
 - FibrChanl-00 (HP PCI Tachyon TL/TS/XL2 Fibre Channel Driver) (see page 98)
 - FibrChanl-01 (Fibre Channel Mass Storage Driver for HP-UX 11i v2) (see page 99)
 - RAID-01 (see page 100)
 - scsiU320-00 (see page 101)
 - SerialSCSI-00 (see page 101)
 - USB-00 (see page 102)
 - Default-Installed Mass Storage Drivers (see page 103)
 - FibrChanl-02 (Fibre Channel Mass Storage Driver for HP-UX 11i v2) (see page 103)
- Supported Systems (see page 104)
- Finding Firmware Information (see page 106)
- Utility Pricing Solutions (see page 106)
 - HP Instant Capacity (see page 107)

Hardware Enablement Patch Bundle for HP-UX 11i v2

The Hardware Enablement Patch Bundle for HP-UX 11i v2 (HWEEnable11i) provides patches required for new systems and for add-on hardware supported on HP-UX 11i v2, including I/O adapters and devices.

Summary of Change

The HWEEnable11i bundle includes new support for PCI-Express I/O adapters in HP Integrity Servers, and HP-UX support for HP servers with PA8900 processors and the sx2000 chipset. Minimal HP-UX support requires other HWE components from this OE Update release that includes diagnostics, I/O driver bundles, along with the Ignite-UX product. HP recommends a full update to the desired OE option from the latest 11i v2 OE Update release for full HP-UX support with the updated versions of the manageability and configuration tools.

The HWEEnable11i bundle includes patches for the following server models:

- HP Integrity BL860c blades with zx2 chipset and C-class enclosure
- HP Integrity rx2660 server (2 single-core processors) with zx2 chipset
- HP Integrity rx3600 server (2 dual-core processors) with zx2 chipset
- HP Integrity rx6600 server (4 dual-core processors) with zx2 chipset
- HP Integrity rx7640 server (8 sockets) with sx2000 chipset
- HP Integrity rx8640 server (16 sockets) with sx2000 chipset
- HP Superdome server (16 sockets) with sx2000 chipset
- HP Superdome server (32 sockets) with sx2000 chipset
- HP Superdome server (64 sockets) with sx2000 chipset
- HP rp7440 server (8 sockets) with PA8900 processors and sx2000 chipset
- HP rp8440 server (16 sockets) with PA8900 processors and sx2000 chipset

Impact

HP updates this bundle with required patches for new hardware. This bundle is updated for each release of the 11i v2 OE media. In addition to delivery on the HP-UX 11i v2 OE media, it is also available on the ITRC Web site: <http://itrc.hp.com>

Compatibility

There are no known compatibility issues.

Performance

There are no known performance issues.

Documentation

- The “bundle readme” document can be found on the OE media under the /DOCS/PATCH directory, or on the IT Resource Center Web site at <http://itrc.hp.com>.
- For further information, refer to the following Web sites:
 - <http://itrc.hp.com>
 - <http://hp.com/go/softwaredepot>
- Also refer to the latest editions of the following documents, available at <http://www.docs.hp.com/hpux/os/11iV2>:
 - *HP-UX 11i v2 Installation and Update Guide*
 - *Read Before Installing or Updating to HP-UX 11i v2*
 - *Patch Management User Guide for HP-UX 11.x Systems*

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

ISEE Client has been updated to version A.03.95.500.xx to incorporate defect fixes. For details, refer to the ISEE Training and Documentation Web site at <http://www.hp.com/learn/isee>.

Impact

There is no impact.

Compatibility

Before enabling or configuring Instant Support Enterprise Edition, 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 Instant Support Enterprise Edition 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 (see page 95)
- Selectable Networking Drivers (see page 96)
- Always-Installed Mass Storage Drivers (see page 97)

For the most current information on supported I/O cards, see the set of Support Matrixes available on the **I/O Cards and Networking Software** Web page at <http://www.docs.hp.com/en/netcom.html>. At the top of the page, click the link for the card technology you are interested in, then scroll down to the **Support Matrixes** heading. If a support matrix for your card technology is unavailable, check the card's user guide or release notes.

Always-Installed Networking Drivers

This release includes changes to the following always-installed networking driver. "Always-installed" means that the driver is automatically installed during HP-UX installation.

NOTE

The `HWEnable11i` bundle, which is normally installed by default on the 11i OE media, provides the patches that are required for the installation of these networking bundles. When updating an existing 11i system, you can install the `HWEnable11i` bundle *and* the desired networking bundle from the OE media in the same install session to meet software dependencies.

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.

IEther-00

The `IEther-00` bundle delivers the `iether` driver which supports selected Gigabit Networking Cards.

Summary of Change

- As of June 2007, the `iether` driver release enables PCI Express (PCIe) technology to support PCIe dual-port cards on HP-UX 11i v2.
- New `lanadmin` option to enable writing VPD `asset_tag` on eeprom.
- HP strongly recommends that the following four tunables not be changed from default values on any `iether` PCI-X cards. It has been found that certain combinations of these tunables (other than the default settings) could result in card hangs.

- `send_max_bufs`
- `recv_mas_bufs`
- `send_coal_ticks`
- `recv_coal_ticks`

HP will not be providing the option of changing these tunables for the new PCI-Express `iether` cards.

Impact

PCI Express (PCIe) technology is now enabled on HP-UX 11i v2 to support PCIe dual-port cards.

For the most up-to-date information on what is changed from one release to the next, see the `IEther-00` driver's release history. It is located on <http://docs.hp.com> under **I/O Cards and Networking Software** and then under **1000Base-T and 1000Base-SX (Gigabit Ethernet)**. For information about supported cards, see the *HP-UX Ethernet Driver Support Matrix*, available at the same location.

Compatibility

There are no known compatibility issues.

Performance

There are no known performance issues.

Documentation

Additional documentation is available on <http://www.docs.hp.com> (navigate to **I/O Cards and Networking Software**, then to **1000Base-T and 1000Base-SX (Gigabit Ethernet)**). For information about supported cards, see the *HP-UX Ethernet Driver Support Matrix*, available at the same location.

Obsolescence

Not applicable.

Selectable Networking Drivers

This release includes changes to the following selectable networking drivers. “Selectable” means that the drivers are not automatically installed, but can be selected during installation.

For the most current information on supported I/O cards, see the set of Support Matrixes available on the **I/O Cards and Networking Software** Web page at <http://www.docs.hp.com/en/netcom.html>. At the top of the page, click the link for the card technology you are interested in, then scroll down to the **Support Matrixes** heading. If a support matrix for your card technology is unavailable, check the card's user guide or release notes.

10GigEthr-00

The `10GigEthr-00` bundle supplies the `ixgbe` driver.

Summary of Change

The HP-UX 11i v2 release of June 2007 updates the 10GigEther-00 bundle to enable future products.

Impact

The 10GigEther-00 bundle supports the AB287A 10 Gigabit Ethernet network card.

Compatibility

There are no known compatibility issues.

Performance

There are no known performance issues.

Documentation

For related 10 Gigabit Ethernet documents on the HP's Web site, please see <http://docs.hp.com>; look under **I/O Cards and Networking Software** and then under **10 Gigabit Ethernet**.

To see what is changed from one release to the next, see the 10GigEther-00 driver's release history. It is located on <http://docs.hp.com> under **I/O Cards and Networking Software** and then under **10 Gigabit Ethernet**.

For the list of supported systems, please see the *HP-UX Ethernet Driver Support Matrix* located on <http://docs.hp.com> under **I/O Cards and Networking Software** and then under **10 Gigabit Ethernet**.

Obsolescence

Not applicable.

Always-Installed Mass Storage Drivers

This release includes changes to the following always-installed mass storage drivers. "Always-installed" means that the drivers are automatically installed during HP-UX installation.

NOTE

The `HWEnable11i` bundle, which is normally installed by default on the 11i OE media, provides the patches that are required for the installation of these mass storage bundles. When updating an existing 11i system, one can install the `HWEnable11i` bundle and the desired mass storage bundle from the OE media in the same install session to meet software dependencies.

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.

For the most current information on supported I/O cards, see the set of Support Matrixes available on the **I/O Cards and Networking Software** Web page at <http://www.docs.hp.com/en/netcom.html>. At the top of the page, click the link for the card technology you are interested in, then scroll down to the **Support Matrixes** heading. If a support matrix for your card technology is unavailable, check the card's user guide or release notes.

FibrChanl-00 (HP PCI Tachyon TL/TS/XL2 Fibre Channel Driver)

The HP PCI Tachyon TL/TS/XL2 Fibre Channel (td) driver manages the A6795A and A5158A PCI single-port host bus adapters (HBAs) that utilize the Tachyon TL/TS and XL2 chips respectively.

Summary of Change

The B.11.23.0706 version of FibrChanl-00 driver includes the following changes:

- The td driver has been changed to report the event of a link going down when an FC cable is disconnected.
- Changes have been made in the td driver to make sure that the diagnostic event #23 (Fibre Channel driver has gone into non-participating mode) with severity *SERIOUS* does not get reported erroneously by the EMS framework.
- Allows non-root user processes to load the SNIA HBA API library.
- Support has been added in SNIA API to display the Serial Number for an FC card.
- The example program `/opt/snias/demos/snias_demo.c` has been modified to correctly display the port information for dual port FC HBAs.
- Changes have been made in the td driver to make sure that the Fabric World Wide Name (WWN) for an HBA does not contain a stale value, when the topology of the HBA is changed from fabric to private loop.
- Support for PA-RISC build has been added in the makefile `/opt/snias/demos/makefile.demo`.
- Formerly, Base-VXVM logs error in `/etc/rc.log` due to presence of extraneous characters in the configuration file `/etc/hba.conf`. This has been corrected in this version of the td driver.

Impact

- The event "Fibre Channel Driver received Link Dead Notification" will be logged by the td driver when an FC cable is disconnected.
- In earlier versions of the td driver, the diagnostic event #23 (Fibre Channel driver has gone into non-participating mode) with severity *SERIOUS* would get reported by the EMS framework even when a Tachyon XL2 card is functional in fabric topology. This is corrected in the current version of the td driver.
- An application that attempts to load the SNIA HBA API library as a non-root user will be able to load successfully.
- Support is added in SNIA API to display the Serial Number for a FC card, obtained from the Vital Product Data (VPD) of the card.

- The example program `/opt/snua/demos/snua_demo.c` now correctly displays the port information for dual port FC HBAs.
- The Fabric WWN for an FC card gets cleared and shows up as `00:00:00:00:00:00:00:00` when fabric connection is removed and the card is connected to a storage device in private loop topology.
- The makefile `/opt/snua/demos/makefile.demo` now support PA-RISC build.
- Extraneous characters have been removed in the configuration file `/etc/hba.conf` to ensure that Base-VXVM does not log error in `/etc/rc.log`. The above changes/defects fixes are already available in HP-UX 11i v3.

Compatibility

There are no known compatibility issues.

Performance

There are no known performance issues.

Documentation

Complete Fibre Channel documentation is available on <http://www.docs.hp.com> (navigate to **I/O Cards and Networking Software**, then to **Fibre Channel**) or directly at <http://www.docs.hp.com/hpux/netcom/index.html#Fibre%20Channel>:

- Support Guide: The *HP Fibre Channel Support Guide* includes an adapter overview, installation details, adapter configuration, troubleshooting and maintenance information, additional features, and regulatory information.
- Installation Guide: Software and hardware installation information for specific HBAs.
- Support Matrix: The *Support Matrix* includes a matrix of Fibre Channel adapters, supported hardware platforms, Operating Systems, Driver Bundle Versions, and minimum PDC/Firmware requirements.
- White Paper: White Papers can also be found in this section.

Obsolescence

Not applicable.

FibrChanl-01 (Fibre Channel Mass Storage Driver for HP-UX 11i v2)

FibrChanl-01 is the software bundle employed by Fibre Channel adapter cards using the `fcd` driver.

Summary of Change

FibrChanl-01 has been updated to incorporate defect fixes. For details, see the *FibrChanl-01 (fcd) Fibre Channel Mass Storage Driver Release Notes (11.23)* (MPN J6374-90053), available at <http://docs.hp.com/en/netcom.html#Fibre%20Channel>.

Impact

There is no impact.

Compatibility

There are no known compatibility issues.

Performance

There are no known performance issues.

Documentation

For further information, see the following documents, available on the Instant Information media and at <http://docs.hp.com/en/netcom.html#Fibre%20Channel>:

- *FibrChanl-01 (fcd) Fibre Channel Mass Storage Driver Release Notes (11.11)* (MPN J6374-90054)
- *FibrChanl-01 (fcd) Fibre Channel Mass Storage Driver Release Notes (11.23)* (MPN J6374-90053)
- *HP Fibre Channel Mass Storage Adapters Support Guide* (MPN J6374-90055)

Information about supported cards can also be found in the support matrixes available at <http://docs.hp.com/en/netcom.html#Fibre%20Channel>.

Obsolescence

Not applicable.

RAID-01

The RAID-01 bundle delivers the driver `ciss` for the A7143A, A9890A, A9891A and P400 controllers.

Summary of Change

The RAID-01 bundle has been updated with quality improvements and support for Instance Provider.

Impact

There are no impacts.

Compatibility

There are no known compatibility issues.

Performance

There are no known performance issues.

Documentation

For further information on specific changes in this release, see the *RAID-01 (ciss) HP Smart Array Controller Driver Release Notes*. For further information on supported cards, see the *HP Smart Array RAID Controllers Support Matrix*. These documents are available at <http://docs.hp.com/en/netcom.html> (navigate to **Smart Array (RAID)**).

Obsolescence

Not applicable.

scsiU320-00

The scsiU320-00 bundle delivers the driver `mpt` for the A7173A and AB290A controllers.

Summary of Change

The scsiU320-00 bundle has been updated with quality improvements.

Impact

There are no impacts.

Compatibility

There are no compatibility issues.

Performance

There are no performance issues.

Documentation

For further information on specific changes in this release, see the *HP-UX Ultra320 SCSI mpt Driver Release Notes*. For further information on supported cards, see the *HP Ultra320 SCSI Host Bus Adapter Support Matrix*. These documents are available at <http://docs.hp.com/en/netcom.html> (navigate to **SCSI Host Bus Adapters**).

Obsolescence

Not applicable.

SerialSCSI-00

The SerialSCSI-00 bundle delivers the driver `sasd`.

The `CommonIO` bundle is currently a common library for SerialSCSI-00. It contains infrastructure components for SerialSCSI-00.

Summary of Change

The `SerialSCSI-00` driver bundle has been updated with quality improvements, new HBA firmware, and support for Instance Provider.

The `CommonIO` bundle has been updated with quality improvements.

Impact

There are no impacts.

Compatibility

There are no known compatibility issues.

Performance

There are no known performance issues.

Documentation

For further information on specific changes in this release, see the *HP SerialSCSI-00 (sasd) 8 Internal Port SAS Host Bus Adapter with RAID Driver Release Notes* and *HP Common IO Release Notes*. For further information on supported cards, see the *SAS Host Bus Adapters Support Matrix*. These documents are available at <http://docs.hp.com/en/netcom.html> (navigate to **SAS Host Bus Adapters**).

Obsolescence

Not applicable.

USB-00

The `USB-00` product (C.01.04.03) delivers the USB subsystem and device drivers.

Summary of Change

`USB-00`, version C.01.04.03, contains defect fixes.

Impact

The USB experience should be of higher quality - with less problems.

Compatibility

This 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`. Instead, applications should use the mouse and keyboard device special files provided in `/dev/deviceFileSystem`: `/dev/deviceFileSystem/keyboardMux` for keyboards attached to the USB and `/dev/deviceFileSystem/mouseMux` for mice attached to the USB.

Performance

There are no known performance issues.

Documentation

For further information about the USB product, see the USB READMEs in `/var/adm/sw/products`.

Obsolescence

Not applicable.

Default-Installed Mass Storage Drivers

This release includes changes to the following default-installed mass storage driver. “Default-installed” means the driver is installed by default during HP-UX installation. You can manually de-select the driver before you install or update system.

For the most current information on supported I/O cards, see the set of Support Matrixes available on the **I/O Cards and Networking Software** Web page at <http://www.docs.hp.com/en/netcom.html>. At the top of the page, click the link for the card technology you are interested in, then scroll down to the **Support Matrixes** heading. If a support matrix for your card technology is unavailable, check the card’s user guide or release notes.

FibrChanl-02 (Fibre Channel Mass Storage Driver for HP-UX 11i v2)

FibrChanl-02 is the new driver bundle (driver is named `fclp`), which will be supporting new PCI Express (PCIe) fibre channel host bus adapter cards. The first of these new cards will be the AD299A, which is being introduced in the June 2007 release.

IMPORTANT

Install all driver software and dependent patches before you install the adapter. For more information, see *FibrChanl-02 (fclp) Fibre Channel Mass Storage Driver for HP-UX 11i v2 Release Notes* available at

<http://docs.hp.com/en/netcom.html#Fibre%20Channel>

Information about supported cards can be found in the support matrixes available at

<http://docs.hp.com/en/netcom.html#Fibre%20Channel>

Summary of Change

FibrChanl-02 is being introduced in the June 2007 release to support a new set of PCIe fibre channel host bus adapters, starting with the AD299A. The driver name is `fclp`, which is default-installed.

Since this is a new product, there are no defect changes for this release.

Impact

FibrChan1-02 provides support for new PCIe fibre channel adapter cards.

Compatibility

There are no known compatibility issues.

Performance

There are no known performance issues.

Documentation

For further information, see the following documents, available at <http://docs.hp.com/en/netcom.html#Fibre%20Channel> (from <http://docs.hp.com>, navigate to **I/O Cards and Networking Software**, then to **Fibre Channel**):

- *Fibre Channel Mass Storage Adapter Installation Guide* — for AD299A
- *FibrChan1-02 (fclp) Fibre Channel Mass Storage Driver for HP-UX 11i v2 Release Notes*
- *Fibre Channel Mass Storage Adapter Support Guide* — for AD299A

For information about supported cards, see the support matrixes listed in their own subsection at <http://docs.hp.com/en/netcom.html#Fibre%20Channel>.

Obsolescence

Not applicable.

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 and HP Integrity servers, as well as the new PA-8900 processor.

NOTE

HP-UX 11i v2 is not supported on PA-RISC Workstations. HP recommends that PA-RISC Workstation customers use HP-UX 11i v1.

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

Additional information regarding HP 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 Servers

- HP 9000 rp24x0 and rp34x0 series
- HP 9000 rp44x0 and rp54x0 series
- HP 9000 rp74x0 and rp84x0 series
- HP rp7440 server (8 sockets) with PA8900 processors and sx2000 chipset
- HP rp8440 server (16 sockets) with PA8900 processors and sx2000 chipset
- HP 9000 Superdome server
- 64-bit A-Class, L-Class, and N-Class servers

Itanium®-based Servers

- HP Integrity cx2600 server
- HP Integrity rx16x0 server
- HP Integrity rx26x0 server
- HP Integrity rx3600 server
- HP Integrity rx4640 server
- HP Integrity rx5670 server
- HP Integrity rx6600 server
- HP Integrity rx76x0/rx86x0 servers

IMPORTANT

For information about a known problem involving the rx7640 and rx8640 servers and the automated management of nPartitions and virtual partitions on HP-UX 11i v2, see the *Read Before Installing or Updating HP-UX 11i v2 September 2006* at <http://docs.hp.com/hpux/os/11i/index.html>.

- HP Integrity Superdome server
- HP BladeSystems Itanium BL60p server
- HP Integrity BL860c blades with zx2 chipset and C-class enclosure
- HP servers with “Dual-Core Intel® Itanium (2) processor 9000 sequence”
 - HP Integrity rx2620 server (2 sockets) with zx1 chipset
 - HP Integrity rx4640 server (4 sockets) with zx1 chipset
 - HP Integrity rx7640 server (8 sockets) with sx2000 chipset
 - HP Integrity rx8640 server (16 sockets) with sx2000 chipset
 - HP Superdome server (16 sockets) with sx2000 chipset

- HP Superdome server (32 sockets) with sx2000 chipset
- HP Superdome server (64 sockets) with sx2000 chipset
- HP Integrity servers with new mixed PCI-X and PCI-express I/O backplane
 - HP Integrity rx2660 server (2 single-core processors) with zx2 chipset
 - HP Integrity rx3600 server (2 dual-core processors) with zx2 chipset
 - HP Integrity rx6600 server (4 dual-core processors) with zx2 chipset

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 **patch/firmware database**.

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

PPU is unchanged for the June 2007 update release.

HP Instant Capacity

The HP Instant Capacity (iCAP) version B.11.23.08.01.01 software (product number B9073BA) provides the ability to instantly increase or decrease processing capacity on specified HP Enterprise servers.

Summary of Change

iCAP has been updated to version B.11.23.08.01.01 to include the following new features and changes:

- update to the required version of nPartition Provider
- defect fix to the `icapmanage -x` command
- modifications to the installation procedure
- full implementation of Global Instant Capacity (GiCAP)
- changes to GiCAP grouping rules and `icapstatus` command output
- incorporate several defect fixes

For further information, see the *HP Instant Capacity (iCAP) Release Notes* at <http://docs.hp.com> (navigate to **Network and Systems Management**, then to **Utility Pricing Solutions**).

For information about changes to nPartition Provider, see “nPartition Provider” on page 126.

Impact

There are no impacts other than those previously listed.

Compatibility

There are no known compatibility issues.

Performance

There are no known performance issues.

Documentation

- Manpages:
 - `icap` (5)
 - `icapmanage` (1M)
 - `icapmodify` (1M)
 - `icapnotify` (1M)
 - `icapstatus` (1M)
- Web Sites:
 - HP Software Depot: <http://hp.com/go/softwaredepot>
 - Technical Documentation: <http://docs.hp.com>
- Documents:

For details on the HP Instant Capacity software product, see the *Instant Capacity User's Guide* and *Release Notes* located on the HP Web site: <http://docs.hp.com> (navigate to **Network and Systems Management**, then to **Utility Pricing Solutions**).

Obsolescence

Not applicable.

What is in This Chapter?

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

- Distributed Systems Administration Utilities (see page 111)
- DUMPAAEnable (see page 111)
- Dynamic Root Disk (see page 113)
- Enterprise Cluster Master Toolkit (see page 114)
- Event Monitoring Services (see page 115)
- Feature Enablement Patch Bundle (Feature11i) (see page 116)
- High Availability Monitors (see page 117)
- HP Integrity Virtual Machines Provider (VM Provider) (see page 118)
- HP Integrity Virtual Machines (VMGuestLib) (see page 119)
- HP OpenView GlancePlus Pak (see page 119)
- HP Partitioning and Virtual Server Environment (see page 121)
 - HP Application Discovery (see page 122)
 - HP Global Workload Manager (see page 123)
 - HP Process Resource Manager (see page 125)
 - HP-UX Virtual Partitions (see page 126)
 - nPartition Provider (see page 126)
 - PRMKernelSW (formerly PRM Libraries) (see page 127)
 - PRMLibraries (see page 128)
 - Utilization Provider (see page 129)
 - vPar Provider (see page 130)
- HP Serviceguard (see page 131)
- HP Serviceguard NFS Toolkit (see page 132)
- HP System Management Homepage (see page 133)
- HP Systems Insight Manager (see page 134)
- HP WBEM Services for HP-UX (see page 136)
- HP-UX Kernel Configuration (see page 137)
- HP-UX WBEM Fibre Channel Provider (see page 139)
- HP-UX WBEM File System Provider (see page 139)
- HP-UX WBEM IOTree Indication Provider (see page 140)
- HP-UX WBEM LAN Provider for Ethernet Interfaces (see page 141)

What is in This Chapter?

- HP-UX WBEM LVM Provider (see page 143)
- HP-UX WBEM RAIDSA Provider (see page 144)
- HP-UX WBEM SAS Provider (see page 145)
- HP-UX WBEM SCSI Provider (see page 145)
- Ignite-UX (see page 146)
- Obsolescence Bundle (see page 148)
- Online Diagnostics (see page 149)
- Quality Pack Patch Bundles (see page 151)
- Software Distributor (see page 152)
- Software Package Builder (see page 152)
- System Fault Management (see page 154)
- Update-UX (see page 156)

Distributed Systems Administration Utilities

Distributed Systems Administration Utilities (DSAU) v1.4 for HP-UX 11i v2 provides several tools to simplify managing groups of systems and Serviceguard clusters. DSAU has three components that operate across groups of systems and Serviceguard clusters:

- configuration synchronization tools for policy-based configuration management
- consolidated logging for centralized logging and log filtering
- command fanout for executing shell commands and distributing files

Summary of Change

Distributed Systems Administration Utilities has been updated to version 1.4 to incorporate defect fixes.

Impact

There is no impact.

Compatibility

There are no known compatibility issues.

Performance

There are no known performance issues.

Documentation

For further information see the products, manpages, as well as the following documents, located at <http://www.docs.hp.com/hpux/os/11iV2> (navigate to **System Administration**):

- *Distributed Systems Administration Utilities Release Notes*
- *Distributed Systems Administration Utilities User's Guide*

Obsolescence

Not applicable.

DUMPAAEnable

The product DUMPAAEnable, version B.11.23.0609.01, enables high-availability features for HP's Active-Active Disk Arrays when configured as dump devices.

The product Securepath, version A.3.0F.02F.00F or higher, is also required to be installed along with this product on the system, for enabling these features.

NOTE DUMPAAEnable is available on the Software Pack (SPK) media for June 2007. For more information about SPK, see “Software Pack (Optional HP-UX 11i v2 Core Enhancements)” on page 27.

Summary of Change

Summary

DUMPAAEnable provides the following features:

- **Active path configuration:**

An Active-Active device can be configured as a dump device through any of the paths to the device. If the path through which dump configuration is being attempted is currently offline, then an alternate active path will be used for configuration. The alternate path that is used for configuration can be displayed with the help of the new option, `-l`, to *crashconf*(1M). If all the paths to the device are offline, then configuration will fail.
- **Failover/Path change:**

If the path that was used for dump configuration goes offline, then an alternate active path will be automatically configured for dump. The current active path configured for dump can be displayed with the help of the `-l` option to *crashconf*(1M).
- **Duplicate device identification:**

An Active-Active device will have multiple device special files (`/dev/dsk/c#t#d#` files), one corresponding to each path to that device. Re-configuration of an existing Active-Active dump device through an alternate device special file will be detected and the configuration will fail.
- **Display live and configured path:**

The new option, `-l`, added to *crashconf*(1M) can be used to display both the user configured path and the current active path configured for dump.
- **LUN Collision:**

Dump devices under LUN collision are removed from the dump device list to avoid dump corruption.

Impact

Installing this product without the SecurePath Version A.3.0F.02F.00F will have no effect. Along with Securepath, this product increases the availability of dump.

Compatibility

This product has no impact to compatibility. A new option has been added to *crashconf*(1M) to return additional information pertinent for Active-Active devices.

Performance

There is no impact to system performance.

Documentation

For further information, see the *crashconf(1M)* manpage.

Obsolescence

HP-UX 11i v3 has native support for multi-pathing and the features provided by this product will be part of the base OS. Therefore this product will be discontinued for future releases of HP-UX.

Dynamic Root Disk

Dynamic Root Disk (DRD) is an HP-UX system administration toolset used to clone an HP-UX system image to an inactive disk for software maintenance and recovery.

System administrators use DRD to manage system images on HP PA-RISC and Itanium®-based systems.

DRD complements other parts of your total HP solution by reducing system downtime while installing and updating patches and other software.

DRD is supported on systems running HP-UX 11i v2 September 2004, or a more recent release of HP-UX 11i v2, with an LVM managed root volume.

Summary of Change

In June 2007, DRD is newly added to the HP-UX 11i v2 Operating Environments. It was previously released on the Web in January 2007.

IMPORTANT

Customers using DRD can download the latest version of the list of rare DRD unsafe patches from HP's IT Resource Center at ftp://ftp.itrc.hp.com/export/DRD/drd_unsafe_patch_list. For further information see the DRD **Information Library** or **Downloads and Patches** page of the DRD documentation site <http://docs.hp.com/en/DRD>.

Impact

DRD is now available on the HP-UX 11i v2 Operating Environments.

Compatibility

There are no known compatibility impacts.

Performance

There are no known performance impacts.

Documentation

Manpages are delivered as part of the product. Information, including the product overview, FAQ, Administrator's Guide, and Whitepapers, is available at the product Web site at <http://docs.hp.com/en/DRD>.

Obsolescence

Not applicable.

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

The following describes new and changed features for the Enterprise Cluster Master Toolkit Version B.04.01:

- Enhanced Oracle toolkit to facilitate quicker database service registration with the listener by starting listener before database.
- Enhancements to the README file of each toolkit in the ECMT bundle
- Support for HP Apache on CFS 4.1/5.0
- Support for HP Apache, HP CIFS and Oracle 9i and 10g with Cluster File System (CFS) 5.0
- Includes support for single fix for password-protected Listener Monitoring in Oracle toolkit.
- Support for Serviceguard A 11.18 version on HP-UX 11i v2

Impact

There are no impacts other than those previously described.

Compatibility

There are no known compatibility issues.

Performance

There are no known performance issues.

Documentation

For further information, see the *Enterprise Cluster Master Toolkit Version B.04.00 Release Notes* at

<http://docs/hp/com/hpux/ha>

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 has been enhanced to support Web Based Enterprise Management (WBEM) notifications. The user can now setup EMS for WBEM notifications. The WBEM support is in addition to the notifications that EMS already supports. The user can view the WBEM notifications by using Event Viewer in the HP System Management Homepage (HP SMH).
- A few defects are fixed to improve the product.
- The EMS bundle name has changed from B67609BA to EventMonitoring.

Impact

There is no impact.

Compatibility

There are no known compatibility impacts.

Performance

There are no known performance impacts.

Documentation

Event Monitoring Service Release Notes and *High Availability Monitors Release Notes* can be found on the Instant Information CD and at <http://www.docs.hp.com/en/ha>. *Using Event Monitoring Service* and *Using High Availability Monitors* user manuals are also available at <http://www.docs.hp.com/en/ha>.

Obsolescence

EMS will be obsoleted post HP-UX 11i v3 release. Post HP-UX 11i v3 release, EMS will be replaced with the Web-based Enterprise Management (WBEM) tool.

Feature Enablement Patch Bundle (Feature11i)

The FEATURE11i bundle consists of required patches that meet dependencies for new or updated software products. This patch bundle gets updated with new patches as needed for support of software products.

Summary of Change

For the June 2007 release, the FEATURE11i bundle consists of all its previous patches plus new enablement patches for DRD, vPars, and VxFS products.

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.

Compatibility

There are no known compatibility issues.

Performance

There are no known performance changes.

Documentation

- The “bundle readme” document can be found on the OE media under the /DOCS/PATCH directory, or on the IT Resource Center Web site at <http://itrc.hp.com>
- For further information, refer to the following Web sites:
 - <http://itrc.hp.com>
 - <http://hp.com/go/softwaredepot>

- Also refer to the latest editions of the following documents, available at <http://www.docs.hp.com/hpux/os/11iv2>:
 - *HP-UX 11i v2 Installation and Update Guide*
 - *Read Before Installing or Updating to HP-UX 11i v2*
 - *Patch Management User Guide for HP-UX 11.x Systems*

Obsolescence

Not applicable.

High Availability Monitors

HA Monitors help in providing high availability in an HP-UX environment by monitoring particular system resources and then informing target applications (for example, HP Serviceguard) when the resources they monitor are at critical user-defined values.

Summary of Change

HA Monitors has been updated to support the update of Event Monitoring Service (EMS). (For more information on EMS, see “Event Monitoring Services” on page 115.)

Impact

There is no impact.

Compatibility

There are no known compatibility issues.

Performance

There are no known performance issues.

Documentation

The following documents are available on the Instant Information media and at <http://docs.hp.com> (navigate to **High Availability**, then to **Event Monitoring Service and HA Monitors**):

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

Obsolescence

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

HP Integrity Virtual Machines Provider (VM Provider)

The HP Integrity Virtual Machines Provider (VM Provider), version A.03.00, is the HP-UX WBEM Services provider for Virtual Machines-related information on VM Host and guests. This product is used by HP Systems Insight Manager (SIM) to display information about HP systems that support HP Integrity Virtual Machines. It is also used by HP Integrity Virtual Machines Manager to visualize, configure and manage HP systems that support HP Integrity Virtual Machines. The VM Provider is only used through a WBEM interface. It is not invoked directly by the user.

Summary of Change

For the HP-UX 11i v2 June 2007 release, the VM Provider upgrade from A.01.20 to A.03.00 provides support for Windows guests in addition to HP-UX guests.

Impact

This product allows HP Systems Insight Manager (SIM) to display information about HP systems that support HP Integrity Virtual Machines.

Compatibility

If VMProvider, VMGuestLib, and HP Integrity Virtual Machines are already currently installed, upgrades of any of these three products require upgrades of the others such that all versions are compatible and all products function correctly.

Performance

There are no known performance issues.

Documentation

Complete information is in the HP Integrity Virtual Machines Installation, Configuration, and Administration manual, available at <http://docs.hp.com> under the **HP Virtual Server Environment (VSE)** collection.

Obsolescence

Not applicable.

HP Integrity Virtual Machines (VMGuestLib)

VMGuestLib is a subset of the HP Integrity Virtual Machines API Library used by Wbem Provider.

Summary of Change

For the HP-UX 11i v2 June 2007 release, the VMGuestLib upgrade from Version A.01.20 to A.03.00 includes support for Windows guests.

Impact

This product allows HP Systems Insight Manager (SIM) to display information about HP systems that support HP Integrity Virtual Machines.

Compatibility

If VMProvider, VMGuestLib, and HP Integrity Virtual Machines are already currently installed, upgrades of any of these three products require upgrades of the others such that all versions are compatible and all products function correctly.

Performance

There are no known performance issues.

Documentation

Complete information is in the HP Integrity Virtual Machines Installation, Configuration, and Administration manual, available at <http://docs.hp.com> under the **HP Virtual Server Environment (VSE)** collection.

Obsolescence

Not applicable.

HP OpenView GlancePlus Pak

GlancePlus Pak, version 4.60, integrates the HP OpenView 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 OVPA:
 - Support for HP Virtual Machine 2.0
Ability to monitor HP Virtual Machine (HPVM) version 2.0 guests from the HPVM host system. A new class of metrics, BYLS, is introduced for the HPVM host, to record the configuration and resource utilization metrics for the Virtual Machines.
 - Configurable Logging Intervals
 - Ability to configure the process interval between ranges of 5-60 seconds.
 - Ability to configure interval for other intervalized classes to 15, 30, 60, or 300 seconds.
 - Additional Logging Thresholds
Logging thresholds for process data. The *procthreshold* is equivalent to *threshold*, which was available with earlier releases. Logging thresholds for additional data classes (such as, application and device data) are added:
 - application data, *apptreshold*.
 - disk data, *diskthreshold*.
 - netif data, *bynetifthreshold*.
 - file system data, *fsthreshold*.
 - cpu data, *bycputhreshold*.
 - logical volumes, *lvthreshold*.
 - Flush Interval
 - Ability to request a data flush interval for application and device data classes.
 - Ability to record/log ALL instances of application and device data periodically, including instances which are considered “uninteresting” based on the threshold criteria specified.
- For GlancePlus:

This release of GlancePlus has the following features:

 - Supported on HP-UX 11i v1 and later
 - *gpm* has been renamed as *xglance*. *gpm* is retained for backward compatibility.
 - Ability to monitor HP Virtual Machine (HPVM) version 2.0 guests from the HPVM host system. A new class of metrics, BYLS, is introduced for the HPVM host, to record the configuration and resource utilization metrics for the Virtual Machines.
 - *glance* and *xglance* have new screens to support the BYLS class of metrics.

NOTE

HPVM 1.0 is not supported by HP OpenView Performance Agent (OVPA) and GlancePlus.

For a list of new metrics added in this release, refer to the Release Notes of each product (GlancePlus and Performance Agent) in `/opt/perf/ReleaseNotes/`, or at the following Web site: http://ovweb.external.hp.com/lpe/doc_serv/.

Impact

Refer to the Release Notes of each product (GlancePlus and Performance Agent) in `/opt/perf/ReleaseNotes/`, or at the following website: http://ovweb.external.hp.com/lpe/doc_serv/.

Compatibility

There are no known compatibility issues.

Performance

There are no known performance issues.

Documentation

See the documentation of each product (GlancePlus, Performance Agent) at the following site: http://ovweb.external.hp.com/lpe/doc_serv/.

Obsolescence

Not applicable.

HP Partitioning and Virtual Server Environment

HP offers a full line of hardware and software partitioning capabilities, including nPartitions, virtual partitions, and HP Integrity Virtual Machines. The HP Virtual Server Environment (VSE) builds on HP partitioning products and the VSE Management Software to help you maximize the use of your server resources in response to changing business needs.

The HP-UX Operating Environments include WBEM providers and agent software that enable your systems to operate in the VSE. The VSE Management Software is not included in the Operating Environments, but is available for download from the following Web site:

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

HP Application Discovery

HP Application Discovery (`amgr`), version 3.0.00, provides system administrators and operators with a convenient graphical user interface for browsing an inventory of applications and processes running within a computing network. Screens show the data by host and by application, and you can monitor resource usage at the level of individual processes within an application. In addition, Application Discovery provides automatic detection of several types of application events. It also provides a template editor so that you can define applications for discovery and addition to monitored and managed workloads in VSE Virtualization Manager.

Summary of Change

Version 3.0.00 of Application Discovery is newly integrated into the Virtual Server Environment, which is available from HP Software Depot at <http://hp.com/go/softwaredepot>. The Application Discovery agent (`AppDiscAgent`) is available with the software and here on the OE media.

AppDiscAgent

Starting with the June 2007 release, the Application Discovery agent is default-installed on the OE media, and is also available from the AR media.

Install `AppDiscAgent` on each managed system where you have applications and installed software that you want to inventory and monitor. The agent securely supplies data to Application Discovery server at intervals that can be set by a system administrator.

Defect fixes also have been incorporated into this release.

Impact

With Application Discovery, you will have expanded capability when defining workloads for resource management, and will have a view into application resource usage at a level not previously available.

Compatibility

Using `AppDiscAgent` 3.0.00 with previous versions of Application Discovery server is not supported.

`AppDiscAgent` 3.0.00 requires the presence of Web-Based Enterprise Management (WBEM) services, Secure Shell (SSH), and OpenSSL for correct operation and secure data transmission. Consult the *VSE Management Software Installation and Update Guide, Version A.03.00.00* for details (with the software or online at <http://docs.hp.com/en/vse.html>).

Performance

Application Discovery requires a “warmup period,” during which the agent collects the initial set of data for a managed node. The degree to which “warmup” affects memory usage by Application Discovery server on the central management system depends on the number of managed nodes that are inventoried at the same time.

Documentation

- Access the online help through the context-sensitive help button [?] in the Application Discovery user interface. A subset of this content is available in the *HP Application Discovery Getting Started Guide, Version 3.0.00*, which is available with the software and online at <http://docs.hp.com/en/vse.html>.
- The following manpages are included for installation with the product:
 - *agent_config* (1M) for controlling Application Discovery certificates from the managed node.
 - *amgr_remote_config* (1M) for configuring Application Discovery certificates from the CMS.
 - *amgrd* (1M) for controlling or modifying the operation of Application Discovery agent.
- Only English versions of the manpages and other documentation are included at this time.

Obsolescence

Not applicable.

HP Global Workload Manager

HP Global Workload Manager (gWLM), a component of the HP Virtual Server Environment (VSE) Suite, 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. In addition, gWLM provides both real-time and historical monitoring of the resource allocation. gWLM has three components:

- VSE Central Management Server, or CMS (VSEMgmt)
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 installed. (For the versions of HP SIM supported, see the *VSE Management Software Installation and Update Guide*, available at <http://docs.hp.com/en/netsys.html#HP%20Global%20Workload%20Manager>)
- Trial Agent (T2743AA)
Install the gWLM agent software on each system where you have workloads you want gWLM to manage. These systems are known as managed nodes. On HP-UX managed nodes, you place each workload in an nPartition (npar), a virtual partition (vpar), a virtual machine (created using HP Integrity Virtual Machines), a processor set (pset), or an fss group. gWLM manages your workloads by controlling the resource allocations to the npars, vpars, virtual machines, psets, or fss groups.
- License to Use, or LTU (T2762AA)
You can obtain the CMS and the agent free of charge. The A.03.00.00.x agent works for a period of 120 days. After the 120 days, the agent:
 - Cannot be restarted once it is stopped

- Refuses changes to deployed SRD configurations
- Refuses to deploy new SRD configurations

To continue using gWLM agents after a free-use period has ended, you must install a license on each managed node. It is also available as part of the VSE LTU (T2786AC), which enables you to use gWLM and all the other components of the VSE suite.

Summary of Change

This release of gWLM includes the following changes:

- Conditional policies that take effect based on Serviceguard events
- Enablement of use of Temporary Instant Capacity (TiCAP) resources on the policy level
- Support for Hyper-Threading
- New `gwmstatus` command
- Usability and performance enhancements
- Integration with GlancePlus
- Integration with the Application Discovery and Process Maps features of HP Integrity Essentials Virtualization Manager
- Support for Linux managed nodes has been removed

Impact

gWLM A.03.00.00.x provides more flexibility in managing your systems. Linux managed nodes are no longer supported.

Compatibility

There are no known compatibility issues.

Performance

gWLM improves performance system utilization when properly configured.

Documentation

For further information, see the following:

- Manpages:
The `gwm` (5) manpage provides an overview of gWLM and points to all the other manpages.
- Web site:
<http://www.hp.com/go/gwm>
- Documentation (available at
<http://docs.hp.com/en/netsys.html#HP%20Global%20Workload%20Manager>):
 - *HP Integrity Essentials Global Workload Manager User's Guide*
 - *VSE Management Software Installation and Update Guide*
 - *VSE Management Software Quick Start Guide*

Obsolescence

Not applicable.

HP Process Resource Manager

HP Process Resource Manager (PRM) C.03.03.01 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

HP PRM has been updated to version C.03.03.01 with the following changes:

- Now provides an interface inside HP Systems Insight Manager
- `xprm` interface has been removed

Impact

You must now use the SMH interface or the SIM interface instead of `xprm`.

Compatibility

There are no known compatibility issues.

Performance

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

Documentation

For further information, see the following:

- Manpages:
prm (5) manpage provides an overview of PRM and points to all the other manpages
- Web site:
<http://www.hp.com/go/prm> (“Information library” provides white papers)
- Documentation (available at
<http://docs.hp.com/hpux/ha/index.html#Process%20Resource%20Manager>):
 - *HP Process Resource Manager User's Guide*
 - *HP PRM Version C.03.03.01 Release Notes*

Obsolescence

Not applicable.

HP-UX Virtual Partitions

HP-UX Virtual Partitions (vPars) A.04.04 enables multiple instances of the HP-UX 11i v2 Operating Environment (OE) to run simultaneously on one server or within one nPartition, with each OE instance hosting its own set of applications in a isolated environment.

When vPars A.04.04 is available, it can be purchased at the HP-UX Virtual Partitions (T1335BC) Web site at Software Depot:

<http://software.hp.com/portal/swdepot/displayProductInfo.do?productNumber=T1335BC>

Summary of Change

vPars A.04.04 provides support for the following:

- HP 9000 servers based on the HP sx2000 chipset, including rp7440, rp8440, and HP 9000 Superdome (sx2000).
- SCSI tape boot and recovery within a vPars A.04.04 environment for supported HP Integrity servers.

For detailed info, please see the *HP-UX Virtual Partitions Release Notes for A.04.04*, available at <http://docs.hp.com/en/hpux11iv2.html#Virtual%20Partitions>.

Impact

There are no impacts other than those previously described.

Compatibility

There are no known compatibility issues.

Performance

There are no known performance issues.

Documentation

Software Depot Web Site:

<http://software.hp.com/portal/swdepot/displayProductInfo.do?productNumber=T1335BC>

Documents:

<http://docs.hp.com/en/hpux11iv2.html#Virtual%20Partitions>

Obsolescence

Not applicable.

nPartition Provider

The nPartition Provider, version B.01.03, 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 product is only used through a Wbem interface. It is not invoked directly by the user.

Summary of Change

nPartition Provider has been updated to version B.01.03 with several defect fixes that will improve the overall quality of the product.

Impact

There is no impact.

Compatibility

There are no known compatibility issues.

Performance

You should be aware of the following items that may affect performance:

- When managing a remote partitionable complex, the performance degrades when the connection traverses long network distances, e.g., managing a partitionable complex in California from a system in New York. Furthermore, when managing a remote system, performance can be improved by connecting to an nPartition Provider on the remote system, rather than connecting directly to the system's service processor.
- The nPartition provider maintains a cache of information about systems being managed. This cache is cleared when the nPartition Provider is unloaded by the CIM server. Performance may be reduced when managing a system for the first time, or immediately after the CIM server has been restarted. Subsequent management sessions of the same system will be faster.

Documentation

Complete information is in the nPartition provider product data sheet, installed as
`/opt/nparprovider/doc/nParProviderDataSheet.html`

Obsolescence

Not applicable.

PRMKernelSW (formerly PRM Libraries)

The PRM Libraries (B7697BA) is now known as PRMKernelSW. PRMKernelSW (version C.03.03.01) contains only the PRM kernel fileset, `PRM-Sw-Krn`.

Summary of Change

The version number for the `PRM-Sw-Krn` fileset is still C.01.04. The only change is that the fileset is now in PRMKernelSW.

Impact

There is no impact.

Compatibility

There are no known compatibility issues.

Performance

There are no known performance issues.

Documentation

For further information, see the following documentation, available at <http://docs.hp.com/hpux/ha/index.html#Process%20Resource%20Manager>:

- *HP Process Resource Manager User's Guide*
- *HP PRM Version C.03.03.01 Release Notes*

Obsolescence

Not available.

PRMLibraries

The PRMLibraries (B7697BA) product that contained only the PRM kernel fileset, PRM-Sw-Krn, is now known as PRMKernelSW. The PRMLibraries product (version C.03.03.01) now contains the PRM API.

Summary of Change

The previous content of this product is now in the PRMKernelSW product. This product now contains an API.

Impact

There is no impact.

Compatibility

There are no known compatibility issues.

Performance

There are no known performance issues.

Documentation

For further information, see the following documentation, available at <http://docs.hp.com/hpux/ha/index.html#Process%20Resource%20Manager>:

- *HP Process Resource Manager User's Guide*
- *HP PRM Version C.03.03.01 Release Notes*

Obsolescence

Not available.

Utilization Provider

The Utilization Provider version A.01.06.xx.xx is a lightweight daemon (*utild*) that records system-utilization data on a 5-minute interval. System-utilization data includes CPU, memory, disk, and network. This product also includes a WBEM provider for access to the utilization data.

Summary of Change

The Utilization Provider has been updated to version A.01.06.xx.xx to include defect fixes and support for new features of the VSE Management Software. Utilization Provider now provides support for Application Discovery and ServiceGuard failover.

The latest updates to the VSE Management Software agents and providers, including the Utilization Provider, can be downloaded from the HP VSE Managed Node Software Update Web site at

<http://vsegmt.external.hp.com/>

Impact

When Utilization Provider is installed, it launches the *utild* daemon, which consumes minimal CPU, memory, and disk resources. Up to 30 days of utilization data are kept in data files in */var/adm/util*. The total disk space used by these files should not exceed 20MB in the default *utild* installation.

The Virtual Server Environment (VSE) Management Software, running on an HP Systems Insight Manager Central Management Server, requires the Utilization Provider to be running on all managed systems. If the Utilization Provider is removed, the system cannot be managed by the VSE Management Software.

Compatibility

This version of the Utilization Provider depends on HP WBEM Services for HP-UX version A.02.00.11 or later.

Performance

The *utild* process wakes up every 5 minutes and discovers and records the four metrics (CPU, memory, disk, and network). This discovery has minimal impact on system performance.

Documentation

The *utild* daemon is described in the *utild* (1M) manpage. WBEM schema (MOF files) are installed in

/opt/util/mof

For more information about the VSE Management Software and Utilization Provider, see the VSE Management Software Web site at

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

Obsolescence

Not applicable.

vPar Provider

The HP-UX vPar Provider is a HP WBEM Services for HP-UX provider introduced in the HP-UX 11i v2 release for extracting information about virtual partitions on a system. As it is a read-only provider, clients cannot modify virtual partition configurations. This provider can be used through a Web-based Enterprise Management (WBEM) interface.

The vPar Provider always gets the data from the default virtual partition database located at `/stand/vpdb` or from the database where virtual partitions are booted from. The vPar Provider talks to the nPar Provider to get information of I/O assigned to virtual partitions and to determine whether or not it is running on an nPar. If the nPar Provider is down, then it will not provide this information.

The vPar Provider uses the namespace `root/cimv2/vpar`. The vPar Provider library and Managed Object Format (MOF) files are stored under `/opt/vparprovider/lib` and `/opt/vparprovider/mof` directories respectively.

The vPar Provider is delivered as a library (`/opt/vparprovider/lib/libHPVParProvider.1`) through the `vParProvider` bundle. It depends on the HP WBEM Services for HP-UX product. This release of vPar Provider is supported on all HP server systems that support HP-UX Virtual Partitions (vPars).

Summary of Change

This release of vPar Provider provides defect fixes for improving product performance.

Impact

There is no impact.

Compatibility

There are no known compatibility issues.

Performance

There are no known performance issues.

Documentation

The `/opt/vparprovider/doc` directory contains the *vPar Provider Release Notes* and data sheet.

Obsolescence

Not applicable.

HP Serviceguard

HP Serviceguard is a high availability software product for protecting mission critical applications from a wide variety of hardware and software failures. The current version is A.11.18.

Summary of Change

HP Serviceguard has been updated to version A.11.18 with the following changes:

- New, streamlined package-creation process
- Explicit support for external scripts
- Online changes to *HEARTBEAT_INTERVAL*, *NODE_TIMEOUT*, and *AUTO_START_TIMEOUT* cluster parameters supported
- Online addition and deletion of heartbeat and data network interfaces along with the corresponding *HEARTBEAT_IP* and *STATIONARY_IP* cluster parameters supported
- General-purpose support for package dependencies on the same node
- General-purpose support for multi-node packages (volume groups must be mounted in shared mode)
- Support for HP Integrity Virtual Machines (HPVM)
- Support for Veritas VxVM, CVM and CFS 5.0 from Symantec
- Bundle name changed from T1905BA to T1905CA

Impact

- New online capabilities improve cluster uptime
- Package configuration simplified, eliminating manual copying of package control script
 - Existing packages continue to run with full backward compatibility
 - New packages can be configured by either the old or the new method

Compatibility

- Some restrictions on Serviceguard rolling upgrade when Storage Management Suite upgrades are involved
- Changes to naming restrictions for a small number of package-configuration parameters may require changes to these names if existing packages are reconfigured
- Note that Serviceguard uses ports and services which may be disabled or blocked in certain Bastille configurations, security levels, or firewall configurations. Thus Serviceguard is incompatible with those specific configurations. For more information see the Compatibility section of the Release Notes for your version of Serviceguard at <http://docs.hp.com> (navigate to **High Availability**, then to **Serviceguard**).

Performance

No performance changes announced.

Documentation

For further information, see the following document, available at <http://docs.hp.com> (navigate to **High Availability**):

- *Managing Serviceguard User's Guide Serviceguard A.11.18 Release Notes*

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.11.23.07 includes a fix for a problem with the `hanfs.sh` script. (For further details, see the Serviceguard NFS Toolkit A.11.11.08 and A.11.23.07 Release Notes, located at <http://docs.hp.com/hpux/ha/index.html#Highly%20Available%20NFS>.)

Also included with this version is documentation for supporting the Cluster File System.

Impact

The new white paper, called “Serviceguard NFS Toolkit Support for Cluster File System,” describes how Serviceguard NFS Toolkit works with the Cluster File System in a Serviceguard environment.

Compatibility

There are no known compatibility issues.

Performance

There are no known performance issues.

Documentation

For further information, see the following documents, located at <http://docs.hp.com/hpux/ha/index.html#Highly%20Available%20NFS>:

- *Serviceguard NFS Toolkit A.11.11.06 and A.11.23.05 Administrator's Guide*
- *Serviceguard NFS Toolkit A.11.11.08 and A.11.23.07 Release Notes*
- "Serviceguard NFS Toolkit Support for Cluster File System"

Obsolescence

Not applicable.

HP System Management Homepage

HP System Management Homepage 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 for HP-UX has been updated to version A.2.2.6.x to incorporate defect fixes. For more information, see the *HP System Management Homepage Release Notes*, available at <http://www.docs.hp.com/en/netsys.html> (navigate to **System Administration**).

Impact

There is no significant change.

Compatibility

There are no known compatibility issues.

Performance

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

Documentation

- HP System Management Homepage manpages included with product:
 - *hpsmh* (1M)
 - *smhstartconfig* (1M)
- HP System Management Homepage Online Help included with product.

- The following documents are available at <http://www.docs.hp.com/en/netsys.html> (navigate to **System Administration**):
 - *HP System Management Homepage Installation Guide*
 - *HP System Management Homepage Release Notes*
 - *Next generation single-system management on HP-UX 11i v2 (B.11.23)*

Obsolescence

Not applicable.

HP Systems Insight Manager

HP Systems Insight Manager (HP SIM) is the foundation for HP's unified server-storage management strategy. It is a multiple operating system, hardware level management product that supports HP ProLiant, Integrity and HP 9000 servers, HP StorageWorks MSA, EVA, XP arrays, and third-party arrays. Through a single management view of Microsoft® Windows®, HP-UX 11iv1, HP-UX 11iv2, HP-UX 11iv3, and Red Hat, SuSE Linux, HP SIM provides the basic management features of system discovery and identification, single event view, inventory data collection, and reporting. The core HP SIM software uses Web Based Enterprise Management (WBEM) to deliver 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 workload management, capacity management, virtual machine management, and partition management through the HP Integrity Essentials enable you to pick the value-added software required to deliver complete lifecycle management for your hardware assets.

Summary of Change

HP SIM has been updated with the following:

- Support for HP VSE Management Software 3.0 products.

WARNING

When migrating from HP SIM 5.0 to 5.1 and you are using HP VSE Management Software 2.5 or earlier, you must migrate to HP VSE Management Software 3.0 BEFORE migrating to HP SIM 5.1. You must re-identify all systems already in the HP SIM database.

NOTE

This release of HP SIM does not support HP VSE Management Software 2.5 or earlier.

- This release has been enhanced to better identify associations between systems when those systems convert to a different subtype. For example, a standalone system that becomes a Virtual Machine, while retaining the same hostname and IP address.
- The name of orphan systems has changed from “Orphan-*<devKey>*” to “Orphan-*<devKey>*-*<oldID>*” for better recognizing which system becomes orphan.

Impact

There is no customer impact.

Compatibility

For information about supported operating systems, go to the HP Systems Insight Manager “Information Library” at <http://h18013.www1.hp.com/products/servers/management/hpsim/infolibrary.html>.

Performance

There are no known performance issues.

Documentation

All HP Systems Insight Manager documentation is available on the Web and 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 replaces ServiceControl Manager 3.0

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.

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

Summary of Change

HP WBEM Services for HP-UX, version A.02.05.x, is a major update to the HP WBEM Services for HP-UX, version A.02.00, previously released with HP-UX 11i v2. HP WBEM Services for HP-UX, version A.02.05.x, is based on OpenPegasus 2.5 source base and CIM Schema 2.9, whereas the HP WBEM Services for HP-UX, version A.02.00, released with the September 2006 HP-UX 11i v2 OE is based on OpenPegasus 2.4.2 source base and CIM Schema 2.7.

The following are key differentiators from version A.02.00 to A.02.05.x:

- Association providers
- Internationalization support for CIM operations
- CIM Schema Upgrade
- Out-of-Process Support
- Run-as-Requestor Support
- Certificate Based Authentication
- Email and Syslog indication handlers

In addition, the bundle name for HP WBEM Services for HP-UX has changed from B8465BA to WBEMsvcs.

Impact

HP WBEM Services for HP-UX allows you to manage your HP-UX systems with integrated solutions that optimize your infrastructure for greater operational efficiency.

Compatibility

There are no known compatibility issues.

Performance

There is no foreseen degradation in performance for this version of HP WBEM Services for HP-UX.

Documentation

- HP WBEM Services for HP-UX manpages included with product:
 - `cimmof.1`
 - `cimprovider.1`
 - `osinfo.1`
 - `wbemexec.1`
 - `cimauth.1m`
 - `cimconfig.1m`
 - `cimserver.1m`
 - `ssltrustmgr.1m`
 - `cimserverd.8`
- The following documents are available at <http://docs.hp.com> (navigate to **Network and Systems Management** then to **HP WBEM Services for HP-UX**):
 - *HP WBEM Services for HP-UX Release Notes*
 - *HP WBEM Services Software Developer's Kit Release Notes*
 - *HP WBEM Services for HP-UX System Administrator's Guide*
 - *HP WBEM Services Software Developer's Kit for HP-UX Provider and Client Developer's Guide*

Obsolescence

Not applicable.

HP-UX Kernel Configuration

The HP-UX Kernel Configuration tool allows the user to configure an HP-UX kernel, and to monitor consumption of kernel resources controlled by parameters. The user can configure the kernel using the Web-based user interface (`kcweb`), the text user interface, or the command-line interface.

The HP-UX Kernel Configuration tool can be used for:

- tuning the kernel tunables
- loading and unloading kernel modules
- configuring alarms
- viewing change logs

The HP-UX Kernel Configuration tool (`kcweb`) can be launched from SAM or from the HP System Management Homepage (HP SMH).

Summary of Change

In this release, the HP-UX Kernel Configuration tool is available as a tool in the HP System Management Homepage. When the user launches the Web-based kernel configuration tool from SAM, the HP-UX Kernel Configuration tool with a new look and feel opens from the HP System Management Homepage on the Web browser.

The text user interface (TUI) of kernel configuration has changed. It is no longer ObAM-based.

Impact

You will find that Kernel Configuration tool has a new look-and-feel GUI and TUI.

Compatibility

There are no known compatibility issues.

Performance

There are no known performance issues.

Documentation

Information is available in the white paper called “Managing Kernel Configurations in HP-UX 11i Version 2,” available at <http://docs.hp.com>.

Information is also available in the *Managing Systems and Workgroups* manual for this release, also available at <http://www.docs.hp.com>.

Information is available in the following online manpages:

- *kcalarm* (1M)
- *kcmd* (1M)
- *kconfig* (5)
- *kconfig* (1M)
- *kcmodule* (1M)
- *kctune* (1M)
- *kcdevice* (1M)
- *kcllog* (1M)
- *kcpath* (1M)
- *kcusage* (1M)
- *kcweb* (1M)
- *system* (4)

Obsolescence

Not applicable.

HP-UX WBEM Fibre Channel Provider

The Fibre Channel Provider is an HP-UX WBEM provider. It enables WBEM client applications to retrieve information about Fibre Channel HBAs on the system.

Summary of Change

The provider version has changed to 11.23.0706 from 11.23.0609.01.

- Feature Changes:
 - New Fibre Channel Consolidated Status Provider (CSP)
 - New Fibre Channel Indication Provider (IP)
- Other Changes:
 - Contains defect fixes

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 Fibre Channel provider product data sheet, available at the following location:

<http://www.docs.hp.com/en/netsys.html#HP%20WBEM%20Services>

Obsolescence

Not applicable.

HP-UX WBEM File System Provider

FSPProvider makes available file system information. The FSPProvider instruments the *HPUX_HFS*, *HP_LOFS*, *HP_CDFS*, *HP_VxFS*, *HP_NFS*, *HP_MountPoint* and *HPUX_Mount* classes.

Summary of Change

Summary

HP-UX WBEM File System Provider is newly delivered in the HP-UX 11i v2 Operating Environments for June 2007.

Impact

HP-UX WBEM File System Provider is now part of the HP-UX 11i v2 Operating Environments.

Compatibility

There is no known compatibility issue.

Performance

There is no known performance issue.

Documentation

Complete product information is available in FSPProvider product data sheet installed under `/opt/fsprovider/doc/HPUX_FSPProvider.pdf`

Obsolescence

Not applicable.

HP-UX WBEM IOTree Indication Provider

The IOTree Indication provider is a CIM Indication provider, which enables management clients to subscribe to WBEM indications. Indication consumers can receive indications whenever there is a state change in the hot swappable slots of the PCI-IO sub-system.

Summary of Change

IOTree Provider is newly delivered in the HP-UX 11i v2 Operating Environments in June 2007.

Features:

- The IOTree Indication Provider works in the Web-Based Enterprise Management (WBEM) environment.
- The provider supports the following indications:

- Slot Occupied
- Slot Emptied
- Slot Power Off
- Slot Power On
- Slot Driver Suspended
- Slot Driver Resumed

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 IOTreeIndication provider product data sheet, and the datasheet is available at the following location:

<http://www.docs.hp.com/en/netsys.html#HP%20WBEM%20Services>

Obsolescence

The IOTree Instance provider is shipped as an ISU on HP-UX 11i v1 OS, and the provider is part of the core OS on HP-UX 11i v2 OS. During upgradation of the OS from 11i v1 to 11i v2, the `ObsIOTreePro` script removes the IOTree Instance provider ISU and retains the core IOTree Instance provider.

HP-UX WBEM LAN Provider for Ethernet Interfaces

The LAN Consolidated Status Provider reports the consolidated health status of the Ethernet subsystem. Client applications can query the collection class and obtain the consolidated health status.

HP-UX LAN Provider (`WBEMP-LAN-00`) is a CIM Provider for Ethernet-based LAN technologies on HP-UX operating system. HP-UX LAN Provider uses CIM Schema v2.7. It consists of three providers: LAN Instance Provider, LAN Indication Provider and LAN Consolidated Status Provider.

- The Instance Provider provides information on LAN interfaces in the system. Client applications can use the LAN Instance Provider to determine all Ethernet LAN links available on the system (registered and known to HP-UX DLPI) and collect information about them.
- The HP-UX LAN Indication Provider delivers indications for events that occur on Ethernet interfaces. Client applications can receive indications based on events generated by Ethernet interfaces.
- The LAN Consolidated Status Provider reports the consolidated health status of the Ethernet subsystem. Client applications can query the collection class and obtain the consolidated health status.

Summary of Change

Two new providers are delivered into this release: HP-UX LAN Indication Provider and LAN Consolidated Status Provider.

CAUTION

LAN Indication Provider Causes Critical Resource Analysis to Return Data Critical Result

When the LAN Indication Provider is enabled, a Critical Resource Analysis (CRA) of an Ethernet interface will return a data critical result. The CRA is executed before replacing the PCI online card through SAM, `olrad`, or the PCI attention button.

What To Do

Install Data Link Provider Interface (DLPI) patch `PHNE_35545`. With this patch installed, CRA results will not be impacted by the LAN Indication Provider. DLPI patch `PHNE_35545` is available at the HP IT Resource Center: <http://itrc.hp.com>.

Without installing this patch you can still proceed with an online card replacement by performing the following: review the CRA report and determine if an online operation on the slot will be safe for the systems operation. If the output of `lanadmin -p <PPA>` shows only `cimprovagt` for the affected PPAs (Physical Point of Attachment) then it is safe to use `olrad`'s `force (-f)` option to proceed with the replacement. See the manpage `olrad (1M)` for more information on the `-f` option.

Impact

HP-UX LAN Provider now delivers three providers.

Installation of DLPI patch `PHNE_35545` is recommended.

Compatibility

There are no known compatibility issues.

Performance

There are no known performance issues.

Documentation

You can look up the following document installed on your system to find out more information about the LAN Provider module:

- `/opt/lanprovider/doc/HPUX_LANProvider.pdf`
- `/opt/lanprovider/doc/HPUX_LANIndProvider.pdf`
- `/opt/lanprovider/doc/HPUX_LANCSPPProvider.pdf`

Obsolescence

Not applicable.

HP-UX WBEM LVM Provider

The LVM Provider is an HP-UX WBEM provider. It enables WBEM client applications to retrieve information about the HP-UX LVM subsystem on the HP-UX server. The LVM provider supports *HPUX_VolumeGroup*, *HPUX_PhysicalVolume*, *HPUX_LogicalVolume*, and *HPUX_PhysicalVolumeGroup* classes and associates these classes.

Summary of Change

The LVM Provider has been updated to version 11.23.008 from 11.23.006 to incorporate defect fixes.

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 LVM provider product data sheet, and the data sheet is available at the following location:

<http://www.docs.hp.com/en/netsys.html#HP%20WBEM%20Services>

Obsolescence

Not applicable.

HP-UX WBEM RAIDSA Provider

HP-UX WBEM RAIDSA Provider is used by client applications to determine information about Smart Array HBAs present on the system. With this component you can retrieve details about the various attributes of Smart Array HBA.

The RAIDSA Provider is only used through a WBEM interface. It is not invoked directly by the user. It is a read-only provider.

Summary of Change

This is the first release of the RAIDSA Provider.

Impact

There is no impact.

Compatibility

There are no known compatibility issues.

Performance

There are no known performance issues.

Documentation

Complete information of the RAIDSA Provider is in the RAIDSA Provider Data Sheet, installed at `/opt/raidsaprovider/doc/RAIDSA_Inst_DataSheet.pdf`

Obsolescence

Not applicable.

HP-UX WBEM SAS Provider

HP-UX WBEM SAS Provider is used by client applications to determine information about SAS HBAs present on the system. With this component you can retrieve details about the various attributes of SAS HBAs.

Summary of Change

This is the first release of the SAS Provider.

Impact

There is no impact.

Compatibility

There are no known compatibility issues.

Performance

There are no known performance issues.

Documentation

Complete information of the SASprovider is in the SAS Provider Data Sheet, installed at `/opt/sas/provider/doc/SAS_Inst_DataSheet.pdf`

Obsolescence

Not applicable.

HP-UX WBEM SCSI Provider

The HP-UX WBEM SCSI Provider is an HP-UX WBEM provider for SCSI host-bus adapters (HBAs). The WBEM clients use the SCSI Provider to retrieve SCSI host-bus adapter attributes, such as port properties and host-bus adapter parameters.

Summary of Change

The provider version number has changed to 11.23.0706 from 11.23.050.

- Feature Changes:
 - Supports Consolidated Status Provider (CSP) feature
- Other Changes:

- Contains defect fixes

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 SCSI provider product data sheet, and the data sheet is available at the following location:

<http://www.docs.hp.com/en/netsys.html#HP%20WBEM%20Services>

Obsolescence

Not applicable.

Ignite-UX

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

- Install HP-UX 11.00, 11i v1 (B.11.11), 11i v2 (B.11.23), and 11i v3 (B.11.31) on multiple PA-RISC and/or Itanium-based clients on your network.
- Create custom installation configurations, or golden images, for use in multiple installations on clients.
- Recover HP-UX clients from tape or network, both locally and remotely.
- Manage and monitor multiple client installation sessions.

Summary of Change

Ignite-UX version C.7.2.xx contains the following new features:

- This is the final Ignite-UX release supporting HP-UX 11.00 installation and recovery. The Ignite-UX-11-00 bundle and its contents will not be provided in future releases.

- Significant changes to the default system configuration for HP-UX 11i v2 have been made to support software added to HP-UX after initial release, better handle larger mass storage devices and support future updates to other HP-UX releases. In particular, the default sizes of `/stand` and `/` have been increased. Default primary swap size has also been increased for some configurations. These changes are consistent with support for future update to HP-UX 11i v3.
- Ignite-UX will now recover the Memory File System (MemFS) configuration. The content is not recovered, but the file system configuration will be preserved.
- In response to the request to improve Ignite-UX I/O inventory performance, Ignite-UX has introduced the ability to block particular paths and protocols during inventory. See *instl_adm* (4).
- An example script has been added to simplify creation of recovery DVD media:
`/opt/ignite/data/scripts/examples/make_opticaldisc_recovery`.
- Supports new hardware enabled by the HP-UX release.
- This release also includes defect fixes.

Impact

There are no impacts other than those previously described.

Compatibility

There are no known compatibility issues.

Performance

There are no known performance issues.

Documentation

The Ignite-UX product Web site containing information and documentation can be found at <http://www.docs.hp.com/en/IUX/>

The following documents are available on the Information Library page at <http://www.docs.hp.com/en/IUX/infolib.html>

- *Ignite-UX Administration Guide*
- *Ignite-UX Custom Configuration Files*
- *Ignite-UX Release Notes*
- *Ignite-UX Reference*
- *Ignite-UX Frequently Asked Questions*

The following white papers are available on the Information Library page at <http://www.docs.hp.com/en/IUX/infolib.html>

- *Ignite-UX and SAS Devices*
- *Ignite-UX and MirrorDisk/UX*
- *Successful System Cloning using Ignite-UX*

- *Configuring Bastille to Operate with Ignite-UX*
- *Successful System Recovery using Ignite-UX*
- *Installing and Updating Ignite-UX*

Obsolescence

Not applicable.

Obsolescence Bundle

The Obsolescence Bundle product is used during an update when obsolete software on the system needs to be removed. This product is automatically selected for updates. During the update process the following obsolete or incompatible products and/or drivers are removed:

NOTE Note that other products not listed here may also be removed upon update to HP-UX 11i v2.

- ObsIOTreePro (IOTree Provider)

NOTE The IOTree Instance provider is shipped as an ISU on HP-UX 11i v1 OS, and the provider is part of the core OS on HP-UX 11i v2 OS. During upgradation of the OS from 11i v1 to 11i v2, the ObsIOTreePro script removes the IOTree Instance provider ISU and retains the core IOTree Instance provider.

- ObsIPQoS (HP-UX IPQoS Obsolescence Product)

NOTE HP-UX IPQoS will be removed by the Obsolescence Bundle upon update from HP-UX 11i v1 to HP-UX 11i v2. To continue using, you can download the HP-UX IPQoS product for HP-UX 11i v2 free from Software Depot at <http://hp.com/go/softwaredepot>.

- ObsVisualConf (HP-UX Visualize Conference Run Time Environment)
- ObsMobileIPv4 (HP-UX Mobile IPv4 Product)
- ObsFR-HPerf (HP Frame Relay Link Software)
- ObsI2ORAIID (HP I2O RAID Product)
- ObsLAN100BT-HPPB (HP HPPB 100BaseT Driver)
- Obs100BT-EISA (HP EISA 100BaseT Driver)

- ObsTOKEN-EISA (HP EISA TokenRing Driver)
- ObsTOKEN-HPPB (HP HPPB TokenRing Driver)
- ObsFDDI-EISA (HP EISA FDDI Driver)
- ObsFDDI-HPPB (HP HPPB FDDI Driver)
- ObsFDDI-HSC (HP HSC FDDI Driver)
- ObsATMPB (HP-PB ATM Driver)
- ObsATM2HSC (HP HSC ATM Driver)
- ObsSCR (SCR)
- ObsDMI (DMI)
- ObsOBAM (ObAM)
- ObsJ13 (Java 1.3 JDK/JRE/JPI/Java3D)
- ObsJ12 (Java 1.2 JDK/JRE/JPI/Java3D)

Online Diagnostics

Online Diagnostics is a collection of tools used to monitor the health of HP servers and receive information about hardware such as memory, CPU, power supplies, and cooling devices. Online Diagnostics includes the following tools:

- EMS Hardware Monitors - The EMS Hardware Monitors enable you to monitor the operation of a wide variety of hardware products and be alerted of failure or any unusual activities of the monitored devices.
- The Support Tools Manager (STM) - STM includes a set of online support tools, enabling you to verify and troubleshoot system hardware, and to examine system logs.

Summary of Change

- The following systems are now supported:
 - rp7440
 - rp8440
 - BL860c
 - cx2620
 - 9000/800/SD16B, 9000/800/SD32B, 9000/800/SD64B
- The following I/O devices are now supported:
 - 405132-B21 and 405160-B21 - PCIe SAS
 - 399490-001 and 435234-001 - PCI-x SAS
 - AD299A 1p 4Gb FC (PCIe)¹

- AD355A 2p 4Gb FC (PCIe)¹
- AB314A Core I/O with SCSI and LAN on rx8640 and rp8440
- AB315A - MP/SCSI Core IO board on rx7640 and rp7440
- The following storage arrays are now supported:
 - DS2500 Jbod
 - Tape devices
- This release includes defect fixes.

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, see the following documents, available at <http://docs.hp.com/en/diag>:

- 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:

1. Specifically, Online Diagnostics has been updated to support Emulex PCI-e Fibre Channel Mass Storage Adapters AD299A and AD355A. The new monitor for these cards (`dm_fc1p_adapter`) is included in this release for Itanium®-based systems.

- Frequently Asked Questions
- Quick Reference
- Release Notes
- STM Online Help
- STM Overview
- STM Tutorial

Obsolescence

Not applicable.

Quality Pack Patch Bundles

The Quality Pack consists of two patch 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

The Quality Pack bundle for HP-UX 11i v2 (B.11.23) is updated in June 2007 release.

Impact

There is no impact.

Compatibility

If you choose only to load the June 2007 version of the Quality Pack without doing a complete update to the June 2007 version of HP-UX 11i v2, you must first load the September 2004 or later version of HP-UX 11i v2.

Performance

There are no known performance issues.

Documentation

The Quality Pack readme can be found on the OE media under the `/DOCS/PATCH` directory, or on the IT Resource Center web site <http://itrc.hp.com>.

Obsolescence

Not applicable.

Software Distributor

Software Distributor (SD) is the standard tool suite for working with HP-UX software packages. SD is a group of software for packaging, installing, copying, listing, removing and verifying software.

Summary of Change

Software Distributor has been updated to incorporate defect fixes.

Impact

You can continue to reliably perform software deployment operations.

Compatibility

SD remains compatible across all supported releases. The HP-UX 11i v1, HP-UX 11i v2 and HP-UX 11i v3 releases are built from a common set of sources.

Performance

Same as previous releases.

Documentation

For further information, see the SD customer Web site at <http://docs.hp.com/en/SD/>

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 to incorporate defect fixes, including quality improvements to the manpage and graphical user interface (GUI).

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.

System Fault Management

System Fault Management (SFM) is a collection of tools used to monitor the health of HP servers and receive information about hardware such as memory, CPU, power supplies, and cooling devices. SFM operates in the Web-Based Enterprise Management (WBEM) environment.

Summary of Change

- The following new providers are introduced in this release:
 - Management Processor Instance Provider
 - Disk Instance Provider
 - Firmware Revision Instance Provider
 - Onboard Administrator (OA) Instance Provider
- On Itanium®-based systems, you can choose to use the `SFMIndicationProvider` instead of the following EMS Hardware Monitors:
 - `cmc_em`
 - `cpe_em`
 - `memory_ia64`
 - `ia64_corehw`
 - `fpl_em`
- On Itanium®-based systems, the `SFMIndicationProvider` generates WBEM indications related to the following:
 - Temperature problems
 - Fan failures or performance problems
 - Power supply problems
 - Power unit problems
 - Corrected Machine Checks (CMCs)
 - Corrected Platform Errors (CPEs)
 - System memory
- On PA-RISC-based systems, you can choose to use the `SFMIndicationProvider` instead of the following EMS Hardware Monitors:
 - IPMI Forward Progress Log Monitor (`fpl_em`)
 - Itanium Core Hardware Monitor (`ia64_corehw`)
- On PA-RISC-based systems, the `SFMIndicationProvider` generates WBEM indications related to the following:
 - Temperature problems
 - Fan failures or performance problems

- Power supply problems
- Power unit problems
- You can view indications generated by the High Availability Monitors. Indications generated by High Availability Monitors are called HP threshold indications. HP Threshold Indications generated by EMS High Availability monitors are supported on PA-RISC and Itanium®-based systems.
- Logviewer option is available on PA-RISC-based systems also. The Log Viewer enables users to view and search the low level logs stored in the log database.
- The Event Subscription Administration includes a new administrative feature called Throttling Configuration on PA-RISC-based systems. Using this feature, you can view and administer a throttling configuration.
- The `evweb eventviewer -L` command includes a new `-x` option that enables you to list events and their respective details based on conditions.
- Defect fixes are made.

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, see the following documents, available at <http://docs.hp.com/en/diag>:

- *System Fault Management Administrator's Guide*
- *SFM Release Notes*
- *SFM Frequently Asked Questions (FAQs)*
- *SFM Provider Data Sheets*
- *SFM Patch Descriptions*
- *SFM Tables of Versions*

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 is no impact.

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#Installing%20and%20Updating>
- The *update-ux* (1M) manpage

Obsolescence

Not applicable.

6

Disk and File Management

What is in This Chapter?

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

- HP CIFS Client (see page 158)
- HP CIFS Server (see page 160)

HP CIFS Client

CIFS is the native networking protocol on Microsoft Windows operating systems. The HP CIFS products 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. 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

HP CIFS Client A.02.02.01 contains several enhancements and defect fixes in addition to the new features provided in HP CIFS Client A.02.02.

HP CIFS Client A.02.02 provides the following major new features:

- MS Distributed File System (DFS) Support

This release of HP CIFS Client supports Microsoft Distributed File System (MS DFS). DFS for the Microsoft Windows Server operating systems is a network server component that enables administrators to build a single, hierarchical view of multiple file servers and file server shares on their network. DFS is a means for uniting files on different computers into a single name spaces.

- New manual pages

This release provides manpages for the HP CIFS Client. They are *cifsclient* (1M), *cifsdb* (1M), *cifslist* (1), *cifslogin* (1), *cifslogout* (1), *cifsmount* (1M), *cifsumount* (1M), *mount_cifs* (1M), *umount_cifs* (1M). Refer to the manpages for details.

- New Configuration Parameters

The following parameters are new in this release. Refer to Chapter 7, “Configuration File” in the *HP CIFS Client Administrator's Guide* for details.

- *mnttabPrefix*
- *allowBackslashesInPaths*
- *fileCreateMask*
- *oldUdbEncrypt*
- *preventCreationEnable, preventCreationPattern*
- *unixExtensions*
- *smbOverTCP*

For detailed information about new enhancements, changes and defect fixes of HP CIFS Client A.02.02, refer to the *HP CIFS Client A.02.02 Administrator's Guide* and *Release Notes*.

HP CIFS Client A.02.02.01 contains the following enhancements and changes:

- New *cifslogout -a* (all) option

This option allows users to log out from all current CIFS login sessions. This is particularly useful in environments which use the CIFS Client's Distributed File System feature (DFS), wherein several CIFS logins can be created in the background as users traverse a DFS tree.

- Make 32-bit errors default

The CIFS Client now uses 32-bit error codes with the CIFS servers by default, rather than the older DOS error class.

- Improved logging

Several logging enhancements have been made in this release. These are mainly intended to help HP engineers diagnose potential problems customers encounter using this software. They are:

- Process information for caught signals: An enhancement of the CIFS Client signal-handling code allows the daemon, upon receipt of a signal from another process, to log the name, process id, and user id of that process.
- Client-server connections: The CIFS Client now logs by default (via the log level *smbConnect*) informational messages regarding various client-server connections: TCP connections, CIFS logins and logouts, and CIFS mounts and umounts of remote shares.
- CIFS mount notifications in syslog: The CIFS Client now also writes notifications of CIFS mount and umounts to the HP-UX syslog file (*/var/adm/syslog/syslog.log*).
- Expanded headers and entries: The headers in the logfiles now contain the CIFS Client version and process id, and the year has been added to the timestamp for each log entry.

- The *sockMode*, *sockOwner* and *sockGroup* parameters are no longer configurable. The values of these parameters are *sockMode = 0666*, *sockOwner = root*, *sockGroup = root*.

- Defect Fixes

For detailed information about new enhancements, changes and defect fixes, refer to the *HP CIFS Client A.02.02.01 Release Notes*.

Impact

HP CIFS Client A.02.02.01 supports several enhancements and defect fixes, as well as the new enhancements provided in HP CIFS Client A.02.02 previously described above.

Compatibility

There are no known compatibility issues.

Performance

There are no known performance issues.

Documentation

For more information, refer to the following documentation, which can be found at <http://docs.hp.com/en/netcom.html> (navigate to **CIFS**):

- User Manual: *HP CIFS client A.02.02 Administrator's Guide*
- Product Release Note: *HP CIFS Client A.02.02 Release Note*
- Product Release Note: *HP CIFS Client A.02.02.01 Release Note*
- Manpages for the HP CIFS Client:
cifsclient (1M), *cifsdb* (1M), *cifslist* (1), *cifslogin* (1), *cifslogout* (1), *cifsmount* (1M), *cifsumount* (1M), *mount_cifs* (1M), *umount_cifs* (1M)

Obsolescence

Not applicable.

HP CIFS Server

HP CIFS Server is a SMB/CIFS-based product on HP-UX systems. It enables HP-UX systems to interoperate with PC clients running Microsoft Windows NT, XP, 2000/2003 and HP-UX machines running HP CIFS Client software. The HP CIFS Server provides file sharing, printer access and authentication services to CIFS clients.

Summary of Change

The HP CIFS Server 3.0g version A.02.03.01 software is based on Samba 3.0.22 with 3.0.23 selected fixes. It is a fix release that provides fixes in addition to enhancements provided in HP CIFS Server 3.0f version A.02.03.

HP CIFS Server 3.0f version A.02.03 provides the following enhancements:

- Winbind code has been re-designed to support the non-blocking, asynchronous request/reply behavior with the exception of user and group enumeration. With this new enhancement, winbind provides better scalability in large domain environments and on high latency networks.
- TDB Memory Map Support:

This release supports performance enhancements which include enabling the configuration parameter *use mmap* to take advantage of fixed size memory map access of CIFS's Trivial Database (TDB) files. The mechanism and number of TDB files using memory-mapped access has been tuned respective of the OS (HP-UX 11i v2 PA-RISC or 11i v2 Itanium®-based).

For detailed information on changes and defect fixes, refer to the *HP CIFS Server Release Notes*, available at <http://docs.hp.com/en/netcom.html> (navigate to **CIFS**).

Impact

This release of HP CIFS Server provides defect fixes and enhancements.

Compatibility

There are no known compatibility issues.

Performance

The implementation of HP CIFS Server A.02.03.01 does not degrade performance.

Documentation

For more information, refer to the following documentation:

- The following Samba books, which are provided with the HP CIFS Server product and are accessible through the Samba Web Administration Tool (SWAT) home page, or can be accessed directly at `/opt/samba/docs/Samba-HOWTO-Collection.pdf` and `/opt/samba/swat/help` from an HP CIFS Server system:
 - Samba book, *The Official Samba-3 HOWTO and Reference Guide*
 - Samba book, *Samba-3 by Example*
- The following HP CIFS Server documents, which can be found at <http://docs.hp.com/en/netcom.html> (navigate to **CIFS**):
 - *HP CIFS Server 3.0g Administrator's Guide version A.02.03.01*
 - *HP CIFS Server 3.0f Release Note version A.02.03*
 - *HP CIFS Server 3.0g Release Note version A.02.03.01*

Obsolescence

Not applicable.

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:

- Browsers (see page 164)
- HP-UX Enhanced Publickey-LDAP (see page 165)
- HP-UX Web Server Suite (see page 167)
 - HP-UX Apache-based Web Server (see page 168)
 - HP-UX Tomcat-based Servlet Engine (see page 168)
 - HP-UX Webmin-based Admin (see page 169)
 - HP-UX XML Web Server Tools (see page 169)
- LDAP-UX Integration (see page 170)
- Netscape Directory Server for HP-UX (see page 172)
- Red Hat Directory Server for HP-UX (see page 174)

Browsers

Mozilla is an open source Web and e-mail applications suite.

The Firefox browser sets a new standard for internet browsing by providing an easier and more personal way to use the Internet.

The Thunderbird email application provides convenient, customizable, rich-featured email access.

Firefox/Thunderbird uses the new open-source windowing toolkit Gnome 2.6 GTK+ libraries for HP-UX on HP PA-RISC 11i v1 (11.11), 11i v2 (11.23), and HP Integrity 11i v2 (11.23). You must install the windowing toolkit before installing Firefox/Thunderbird.

Products are as follows:

- Mozilla, MozillaSrc 1.7.13.01
- Firefox, FirefoxSrc 1.5.0.8
- Thunderbird, ThunderbirdSrc 1.5.08.00
- GTK, GTKSrc 2.6.8.00

Summary of Change

Mozilla 1.7.13.01 contains security fixes.

This Mozilla version includes improved Asian font support on HP-UX and includes the Japanese Language Pack. Also included are fixes for security vulnerabilities reported in Mozilla 1.7.12.01.

The Firefox 1.5.0.8 open source Web browser includes Firefox 1.5.0.8 changes from the Mozilla Foundation. This version fixes several security vulnerabilities reported by the Mozilla Foundation.

Thunderbird version 1.5.08.00 for HP-UX provides online browsing and searching tools for HP-UX on HP PA-RISC. This version fixes several security vulnerabilities reported by the Mozilla Foundation.

Impact

There are no impacts other than those previously described.

Compatibility

The Mozilla release will install on top of previous releases. It will not interfere with Netscape installations. For information on interactions with browser plug-ins, please see <http://www.hp.com/go/mozilla>.

Firefox/Thunderbird uses the new open-source windowing toolkit on both PA-RISC and Integrity. You must install the windowing toolkit before installing Firefox/Thunderbird.

Firefox and Thunderbird use the GTK open-source windowing toolkit on both PA-RISC and Integrity, which you must install before installing Thunderbird. Additionally, there is a mandatory HP-UX patch, PHSS_33033, for HP PA-RISC 2.0 (11.11). For more information, see <http://www.hp.com/go/firefox>.

Performance

Mozilla may be slow the first time it is started because it is creating a profile.

Documentation

See the Release Notes and <http://www.hp.com/go/mozilla> for more information on using Mozilla. For more information on Firefox/Thunderbird on HP-UX 11i, visit <http://www.hp.com/go/firefox>.

Obsolescence

The Mozilla application suite will not be updated with any new security fixes. If you are currently using Mozilla or Netscape, we encourage you to upgrade to Firefox 1.5, or later version, to avoid security vulnerabilities.

HP-UX Enhanced Publickey-LDAP

Key components on HP-UX 11i v2 consist of `newkey/chkey` commands to create and change the public/secret keys pairs and the `getpublickey/getsecretkey` APIs to retrieve the public/secret keys from the data repository configured in the `/etc/nsswitch.conf` file. On HP-UX 11i v2, key components work with the files, nis and nisplus databases.

The ONC Software Pack bundle, `ENHKEY`, contains new functionality for `publickey` LDAP support that allows you to store and manage public/secret keys in an LDAP directory server. The software bundle contains enhanced key components plus the enablement product for this feature. Enhanced key components version B.11.23.01 is available on the SPK media for HP-UX 11i v2 June 2007 release.

NOTE

HP-UX Enhanced Publickey-LDAP is available on the Software Pack (SPK) media for June 2007. For more information about SPK, see “Software Pack (Optional HP-UX 11i v2 Core Enhancements)” on page 27.

Summary of Change

The HP-UX 11i v2 ONC Software Pack bundle, `ENHKEY`, contains new functionality for `publickey` LDAP support that allows you to store and manage public/secret keys in an LDAP directory server. The enhanced feature contains the following updates:

- Enhance the `newkey/chkey` commands used to create and change the public/secret keys in the LDAP database.
- Enhance the `getpublickey/getsecretkey` APIs used to retrieve the public/secret keys from the LDAP database.

HP-UX 11i v1 ONC Software Pack bundle, ENHKEY, is now available on the Software Pack (SPK) media for HP-UX 11i v2 June 2007.

Support for `publickey/secretkey` through LDAP requires functionality enhancement in LDAP-UX Client Services and an enhancement in the ONC product. The LDAP-UX Integration product version B.04.00 or later supports discovery and management of `publickey/secretkeys` in an LDAP directory server.

NOTE

You must install the ONC Software Pack bundle, ENHKEY, along with the LDAP-UX Integration product version B.04.00 or later on your client system to use the Enhanced Key feature.

Impact

HP-UX enhanced `publickey` LDAP functionality provides the following impact to customers:

- Allows users to use the `newkey` and `chkey` commands to create and change public/secret key pairs in the LDAP database.
- Allows users to use `getpublickey` and `getsecretkey` APIs to retrieve the public and secret keys respectively from the LDAP database.

Compatibility

There are no known compatibility issues.

Performance

There are no known performance issues.

Documentation

- For further information, refer to the following documentation available at <http://docs.hp.com>:
 - *LDAP-UX Client Services B.04.00 Administrator's Guide*, Edition 4 (J4269-90053)
 - *ONC with Publickey LDAP Support Release Notes* (B1031-90062)

Manpages:

- The following manpages are updated for `publickey` LDAP support and installed with the ENHKEY software bundle:
newkey (1M), *chkey* (1), *getpublickey* (3N), *publickey* (4)

Obsolescence

Not applicable.

HP-UX Web Server Suite

The HP-UX Web Server Suite v2.17 is a no-additional-cost 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 168)
- HP-UX Tomcat-based Servlet Engine (see page 168)
- HP-UX Webmin-based Admin (see page 169)
- HP-UX XML Web Server Tools (see page 169)

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 5.8.8 (available with the Operating Environment) to be installed.
- HP-UX Tomcat-based Servlet Engine requires Java 1.4 or later. You are not required to have the entire HP-UX Software Development Kit (SDK) for compiling JSPs; only JRE needs to be installed. HP-UX XML Web Server Tools require SDK for Java 1.3 or later.
- 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 version 2.0.58.01. This release of HP-UX Apache-based Web Server is primarily a security/defect fix release.

Impact

There is no impact.

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 167.

Obsolescence

Not applicable.

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

Tomcat has been upgraded to version 5.5.20.00.

Tomcat version 5 implements the Servlet 2.4 and JavaServer Pages 2.0 specifications. Tomcat 5.5.x is designed to run on JDK 1.5 and later versions. For more details refer the *HP-UX Web Server Release Notes*. (See “Documentation” on page 167.)

Impact

There is no impact.

Compatibility

There are no known compatibility issues.

Performance

There are no known performance issues.

Documentation

See “Documentation” on page 167.

Obsolescence

Not applicable.

HP-UX Webmin-based Admin

HP-UX Webmin-based Admin is a Configuration and Administration GUI with extensive enhancements for the HP-UX Apache-based Web Server.

Summary of Change

This release of HP-UX Webmin-based Admin is primarily a defect fix release. Webmin has been upgraded to 1.070.09. Please see *HP-UX Web Server Suite Release Notes* for details. (See “Documentation” on page 167.)

Compatibility

There are no known compatibility issues.

Performance

There are no known performance issues.

Documentation

See “Documentation” on page 167.

Obsolescence

Not applicable.

HP-UX XML Web Server Tools

HP-UX XML Web Server Tools is a collection of a Java-based XML tools used for XML parsing, stylesheet and XSL processing, web-publishing and image translating from the open source projects: Xerces, Xalan, Cocoon, FOP and Batik.

Summary of Change

XML Web Server tools have been upgraded to version 2.03.

Compatibility

There are no known compatibility issues.

Performance

There are no known performance issues.

Documentation

See “Documentation” on page 167.

Obsolescence

Not applicable.

LDAP-UX Integration

The LDAP-UX Integration product uses the Lightweight Directory Access Protocol (LDAP) to centralize user, group and network information management in an LDAP directory. It includes the following subcomponents:

- LDAP-UX Client Services
- LDAP-UX Client Administrator's Tools and Migration Scripts
- Mozilla LDAP C Software Development Kit (SDK)

LDAP-UX Client Services simplifies HP-UX system administration by consolidating account, group and other configuration information into a central LDAP directory server. The LDAP-UX Client Services software works with a variety of LDAP v3 capable directory servers and is fully tested with the Netscape Directory Server and the Microsoft Windows 2000/2003/2003 R2 Active Directory Server.

The LDAP-UX Client administration tools can help you to manage data in an LDAP directory server.

The Mozilla LDAP C SDK contains a set of LDAP Application Programming Interfaces (APIs) to allow you to build LDAP-enabled clients. Using the functionality provided with the SDK, you can enable your clients to connect to LDAP v3-compliant servers and perform the LDAP functions.

Summary of Change

LDAP-UX Integration B.04.10 is available on the June 2007 release of HP-UX 11i v2. The product version B.04.10 delivers new features and defect fixes.

LDAP-UX Integration B.04.10 contains the following major features:

- Dynamic Group Support

This release supports dynamic groups, where users are dynamically added to groups based on the conditional settings. The conditions can be specified with an LDAP search filter or an LDAP URL. When a user data matches with the conditions, it belongs to the dynamic group.

- *PAM_AUTHZ* Enhancements are as follows:
 - *PAM_AUTHZ* supports LDAP account and password security policy enforcement without requiring LDAP-based authentication. This feature supports applications, SSH (Secure Shell) or r-commands with *rhost* enabled where authentication is performed by the command itself.
 - *PAM_AUTHZ* provides dynamic variable support for the *ldap_filter* type of the access rule in the `/etc/opt/ldapux/pam_authz.policy` file.
 - This releases introduces a new *PAM_AUTHZ* access rule, *unix_local_user*.
- TLS Support

This release supports a new extension operation of TLS (Transport Level Security) protocol called *startTLS* to secure communication between LDAP clients and the LDAP directory server. You can utilize the StartTLS operation to set the secure connection over a regular (an un-encrypted) LDAP port, such as port 389.
- Schema Extension Utility

This release provides a new schema extension utility, *ldapschema*. This utility allows schema developers to define LDAP schemas using a universal XML syntax, greatly simplifying the ability to support different directory server variations.
- Support for Microsoft Windows 2003 Release 2 Active Directory Server

Windows 2003 R2 ADS provides the R2's RFC2307 schema which is compliant with the IETF RFC2307 standard.

Impact

LDAP-UX Integration B.04.10 provides new features and defect fixes.

Compatibility

There are no known compatibility issues.

Performance

There are no known performance issues.

Documentation

Refer to the following documentation available at <http://docs.hp.com/en/internet.html>

- *LDAP-UX Client Services B.04.10 Administrator's Guide*
- *LDAP-UX Client Services B.04.10 with Microsoft Windows Active Directory Server Administrator's Guide*
- *LDAP-UX Integration B.04.10 Release Notes*

Obsolescence

Not applicable.

Netscape Directory Server for HP-UX

Hewlett-Packard provides an industry-standard centralized directory service to build your intranet or extranet on. Your Netscape servers and other directory-enabled applications use the directory service as a common, network-accessible location for storing shared data, such as user and group identification, server identification, and access control information. In addition, the Netscape Directory Server 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.06.21.50 for HP-UX is a fix release of Netscape Directory Server 6.21 from HP; it contains defect fixes in addition to new features provided in version B.06.21. The following are new features for Netscape Directory Server 6.21:

- **Support for Four-Way Multi-Master Replication:**

The Multi-Master Replication feature provides the ability to support four masters. It supports a variety of deployment topologies. The expanded number of masters provides higher availability.
- **Support for Fine-Grained Password Policy:**

The password policy feature provides the ability to support policies at the subtree and user levels. The subtree-level password policy enables a hosting environment to have different password policies for each hosted company rather than enforcing a single policy for all the hosted companies. The user-level password policy enables administrators to tailor policies for individual user.
- **New Configuration Attributes**

This release supports the following new configuration attributes:

 - The *nsslapd-conntablesizesize* attribute
 - The *nsslapd-schema-ignore-trailing-spaces* attribute
 - The *nsslapd-db-import-private-mem* attribute
- **Get Effective Rights:**

This release supports a new LDAP control which enables you to see a user's access control rights on any given entry.

 - `shadowport` option
 - `one` option to disable tombstones:

Administrators can disable the creation of tombstones in a non-MMR environment by setting the `nsds5ReplicaTombstonePurgeInterval` parameter to -1.

- **New Applications**

Netscape Directory Server 6.21 includes two new client applications, Netscape Directory Server Gateway, and Netscape Directory Server Org Chart

- **Updated Database**

Refer to the README file for HP Netscape Directory Server B.06.21.50 for detailed information of defect fixes.

Impact

The Netscape Directory Server B.06.21.50 for HP-UX provides defect fixes.

Compatibility

There are no known compatibility impact.

Performance

The implementation of Netscape Directory Server B.06.21.50 for HP-UX does not degrade performance.

Documentation

Refer to the following documents available at <http://www.docs.hp.com/hpux/internet:>

- *Netscape Directory Server B.06.21.50 for HP-UX Release Notes*
- *Netscape Directory Server 6.2 Installation Guide*
- *Netscape Directory Server 6.2 Configuration, Command, and File Reference*
- *Netscape Directory Server 6.2 Deployment Guide*
- *Netscape Directory Server 6.2 Administrator's Guide*
- *Netscape Directory Server 6.2 Schema Reference*
- *Netscape Directory Server 6.2 Plug-In Programmer's Guide*
- *Netscape Directory Server 6.2 Gateway Customization Guide*

Obsolescence

Not applicable.

Red Hat Directory Server for HP-UX

HP provides an industry-standard centralized directory service on which you can build your intranet or extranet. Your Red Hat servers and other directory-enabled applications use the directory service as a common, network-accessible location for storing shared data, such as user and group identification, server identification, and access control information. In addition, you can extend the Red Hat Directory Server to support your entire enterprise with a global directory service that provides centralized management of your enterprise resource information.

Summary of Change

Red Hat Directory Server B.07.10.20.20 is an HP release of Red Hat Directory Server 7.1sp2 on the HP-UX 11i v2 system. It mainly contains defect fixes.

For detailed information about defect fixes, refer to the *Red Hat Directory Server B.07.10.20 for HP-UX Release Notes and Supplemental Instructions*, available at <http://www.docs.hp.com/hpux/internet>.

Impact

Red Hat Directory Server B.07.10.20.20 for HP-UX provides defect fixes.

Compatibility

There are no known compatibility impact.

Performance

The implementation of Red Hat Directory Server B.07.10.20.20 does not degrade performance.

Documentation

Refer to the following documents available at <http://www.docs.hp.com/hpux/internet>:

- *Red Hat Directory Server B.07.10.20.20 for HP-UX Release Notes and Supplemental Instructions*
- *Red Hat Directory Server 7.1 Installation Guide*
- *Red Hat Directory Server 7.1 Configuration, Command, and File Reference*
- *Red Hat Directory Server 7.1 Deployment Guide*
- *Red Hat Directory Server 7.1 Administrator's Guide*
- *Red Hat Directory Server 7.1 Schema Reference*
- *Red Hat Directory Server 7.1 Plug-In Programmer's Guide*
- *Red Hat Directory Server 7.1 Gateway Customization Guide*

Obsolescence

Not applicable.

What is in This Chapter?

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

- HP-UX Bastille (see page 178)
- HP-UX Host Intrusion Detection System (see page 179)
- HP-UX IPFilter (see page 181)
- HP-UX Security Attributes Configuration (see page 183)
- Install-Time Security (see page 184)
- OpenSSL (see page 185)
- HP-UX Role-based Access Control (see page 187)
- HP-UX Secure Shell (see page 188)
- HP-UX Software Assistant (see page 189)
- HP-UX Standard Mode Security Extensions (see page 191)

HP-UX Bastille

HP-UX Bastille is a security hardening/lockdown tool which can be used to enhance the security of the HP-UX operating system. It provides customized lockdown on a system-by-system basis by encoding functionality similar to the Bastion Host and other hardening/lockdown checklists.

Bastille was originally developed by the open source community for use on Linux systems. HP added HP-UX-specific content to create HP-UX Bastille, and also contributed significant quality improvements and functional content to the community at large.

This tool, along with Install-Time Security (ITS) and Security Patch Check (SPC), introduces new, out-of-the-box security functionality.

Summary of Change

HP-UX Bastille, version 3.0.x, includes the following enhancements:

- New enhancements:
 - A new feature called `bastille_drift` analysis (Bastille 3.0) is able to report when system's hardening/lockdown configuration no longer matches policy (Bastille config applied). New enhancements also include Bastille questions (hardening features).
- New capabilities:
 - Easily tell whether any system's hardening configuration remains consistent with what was applied without risking system changes. Previously, would have to re-run Bastille config and risk breaking system if change had been intentional (impractical on production systems).
 - Detect if unintentional side effect of system config activities (e.g. installing new software or patches) loosened hardening configuration.
 - Bastille provides html and text reports that document the security state of a system with respect to the configuration that Bastille performs. These reports can be used to facilitate security-compliance-audit reporting.
- New Features and Benefits:
 - Drift report: Visibility into undone hardening, to allow planned response without risking unexpected system breakage. Assist with regulatory/SOX compliance.
 - Tested System Insight Manager CMS Policy: Pre-built HP Systems Insight Management (SIM) server Central Management Server (CMS)-hardened configuration.
 - Acceptance of ICMP echo (ping) requests in `Sec20MngDMZ` level, which allows for greater compatibility with management frameworks discovery / monitoring.

In addition, the bundle name has changed from `B6849AA` to `HPUXBastille`.

Impact

These represent additional items that Bastille will be able to lock down, additional usability improvements, and a new ability for Bastille to ensure that each cluster node has a consistent set of security settings.

Compatibility

There are no differences between the Itanium®-based and PA-RISC implementation (they are the same). Some products depend on services, system settings, or network ports that Bastille secures. In those cases, products that depend on out-of-box settings that Bastille may change, document their dependency. Where practical, Bastille also documents these dependencies.

Performance

Though Bastille does not directly affect performance, its configuration of IPFilter settings (host-based firewall), will cause a slight network performance decrease.

Documentation

Information can be found in the following documents:

- *bastille* (1M) manpage (add `/opt/sec_mgmt/share/man/` to `MANPATH`)
- *Bastille User's Guide*, delivered in `/opt/sec_mgmt/bastille/docs/user_guide.txt`
- HP-UX Bastille Web site at <http://www.hp.com/go/bastille>
- *HP-UX 11i v2 Installation and Update Guide*, available online at <http://www.docs.hp.com/en/oshpux11iv2.html>
- “Install-Time Security” on page 184

Support is also offered through HP's IT Resource Center's HP-UX Security Forum at <http://forums1.itrc.hp.com/service/forums/parseCurl.do?CURL=%2Fcm%2FcategoryHome%2F1%2C%2C155%2C00.html&admit=-682735245+1157685896487+28353475>

Obsolescence

Not applicable.

HP-UX Host Intrusion Detection System

HP-UX Host Intrusion Detection System (HIDS) Release 4.1 is a host-based HP-UX security product for HP computers running HP-UX 11i. HP-UX HIDS Release 4.1 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 4.1 complements existing network-based security mechanisms, bolstering enterprise security.

Summary of Change

HP-UX HIDS Release 4.1 supports the following new features:

- Supports an alert volume reduction feature that proactively suppresses duplicate alerts from being generated, logged and reported to the HIDS administrator console. Using this feature, administrators can manage HIDS alerts with ease, by focusing their attention on fewer and more significant alerts.
- Includes a reporting feature that enables the generation of customized and consolidated alert reports that are easy to view and print. Reports can be generated in html, text, and raw formats.
- Provides a tuning tool that reduces the time and effort to deploy and maintain Surveillance Schedules by:
 - Eliminating the time consuming and error prone process of manually generating filtering rules.
 - Facilitating the review of alerts from multiple agents running the same schedule, by presenting an alert report that consolidates duplicate alerts and groups alerts triggered by the same program.
 - Performing automatic schedule updates and deployments.

This tool effectively automates the process of identifying and filtering file-related alerts that the HIDS administrator consider safe to ignore (alerts generated because of normal system activity). This tool can be used to perform the following tasks:

- Customize a preconfigured schedule to alerts generated as part of normal system activity during the initial HIDS deployment.
- Fine tune an existing schedule if new alerts that are considered safe to ignore are generated after deployment.

Impact

There are no impacts other than those previously listed.

Compatibility

HP-UX HIDS Release 4.1 is backward compatible with Release 4.0, Release 3.1, and Release 3.0. It is not backward compatible with Release 2.0, Release 2.1, Release 2.2, and Release 1.0. HIDS v 1.0 and 2.x are obsolete and no longer supported by HP.

Schedules created using previous versions of HIDS need to be migrated to HIDS 4.1. For more information on migrating schedules, see the Release Notes available at <http://www.docs.hp.com> in the **Internet Security Solutions** section.

Performance

There are no known performance issues.

Documentation

For further information, see the following:

- Manpages (with product bits/depots; Directory Path: `/opt/ids/share/man`):
 - *IDS_checkAdminCert* (1M)
 - *IDS_checkAgentCert* (1M)
 - *IDS_checkInstall* (1M)
 - *IDS_genAdminKeys* (1M)
 - *IDS_genAgentCerts* (1M)
 - *IDS_importAgentKeys* (1M)
 - *idsadmin* (1M)
 - *idsagent* (1M)
 - *idsgui* (1M)
 - *ids.cf* (5)
- Documents (at <http://docs.hp.com/en/internet.html#HP-UX%20Host%20Intrusion%20Detection%20System>):
 - *HP-UX Host Intrusion Detection System Release 4.1 Release Notes*
 - *HP-UX Host Intrusion Detection System Administrator's Guide, Software Release 4.1*
 - *OpenView Operations Smart Plug-In for HP-UX Host IDS Administrators and Users Guide* (at http://openview.hp.com/products/spi/spi_ids/index.html)

Obsolescence

Effective March 31, 2007, support for Release 2.x of HIDS will be discontinued. HP recommends that all customers using HIDS Release 2.x upgrade to Release 4.1. To know more about discontinuance, see <http://www.hp.com/software/releases/releases-media2/index.html>

HP-UX IPFilter

HP-UX IPFilter A.03.05.14 provides system firewall capabilities by filtering IP packets to control traffic in and out of a system.

Summary of Change

HP-UX IPFilter A.03.05.14 includes all the functionality of HP-UX IPFilter A.03.5.12 and the following new features:

- Filtering for IPv6 packets equivalent to IPv4 packet filtering while maintaining IPv4 support. IPFilter can filter packets based on the following IPv6 packet characteristics:
 - IPv6 addresses, address-ranges, and prefixes
 - Ports and port ranges
 - IPv6 physical interfaces
 - Upper-layer protocols (TCP/UDP/ICMP)
 - Any combination of these characteristics
- Stateful filtering for TCP (limited stateful filtering for UDP and ICMPv6)
- IPv6 fragmentation support (the ability to block fragmented traffic)
- Filtering on IPv6 extension headers
- Filtering for tunneled packets (v6-in-v4 and v6-in-v6 traffic)
- Detection of IPSec headers (Authentication Header and Encapsulating Security Payload) and passing if the packet matches a pass rule or block if it matches a block rule
- IPv6 filter statistics
- The ability to recognize and filter ICMPv6 messages by type and code values

Defect fixes are also incorporated. For more information, see the *HP-UX IPFilter A.03.05.14 Release Notes* and the *HP-UX IPFilter A.03.05.14 Administrator's Guide*, available at <http://docs.hp.com/en/internet.html#HP-UX%20IPFilter>.

Impact

There is no impact. If you do not want to use the new features, you do not have to make any changes.

Compatibility

Existing configuration files and user scripts are fully compatible with A.03.05.14. Filtering for IPv6 packets is done using a separate configuration file and new command options.

Performance

The impact on system performance is the same as it is for previous versions of HP-UX IPFilter.

Documentation

- Manpages:
 - ipf*(4) packet filtering kernel interface
 - ipf*(5) IP packet filter rule syntax
 - ipf*(8) alters packet filtering kernel's internal lists
 - 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 (all available at <http://docs.hp.com/en/internet.html#HP-UX%20IPFilter>):
 - *HP-UX IPFilter Version A.03.05.14 Administrator's Guide*
 - *HP-UX IPFilter A.03.05.10.04 Release Notes*
 - *IPFilter/9000 Sizing and Performance White Paper*

Obsolescence

Not applicable.

HP-UX Security Attributes Configuration

HP-UX Security Attributes Configuration is an easy-to-use Web-based tool for configuring system-wide and per-user values of security attributes of local and Network Information Service (NIS) users. This application requires the TrustedMigration product to be installed.

The features of the HP-UX Security Attributes Configuration tool are as follows:

- Launch the tool from HP System Management Homepage (HP SMH), HP Systems Insight Manager (HP SIM), or by running the *secweb* (1M) command.
- Configure system-wide values of security attributes from the System Defaults tab.
- Configure per-user values of security attributes of local users from the Local Users tab.
- Configure per-user values of security attributes of NIS users from the NIS Users tab.
- Preview commands that support the GUI actions, prior to execution.

Summary of Change

Defects are fixed in this release.

Impact

There is no impact.

Compatibility

There are no known compatibility issues.

Performance

There are no known performance issues.

Documentation

Refer the *sam* (1M) and *secweb* (1M) manpages, and the product online help.

Obsolescence

Not applicable.

Install-Time Security

Install-Time Security (ITS) version 1.4.x adds a security step to the install/update process that allows you to run the Bastille security lockdown engine during system Installation with one of four configurations ranging from default security to DMZ.

ITS includes the following bundles:

- Sec00Tools
- Sec10Host
- Sec20MngDMZ
- Sec30DMZ

Summary of Change

ITS 1.4.x includes the following new functionality.

- New questions/configuration
- Diagnostic daemon configure to local-only use (not network)
- Syslog local-only

Impact

You will benefit from new functionality:

- New lockdown configuration items
- New Ignite Integration (on security tab)

Compatibility

There are no differences between the Itanium®-based and PA-RISC implementation (they are the same). Some products depend on services, system settings, or network ports that Bastille secures. In those cases, products that depend on out-of-box settings that

Bastille may change, document their dependency. Where practical, Bastille also documents these dependencies. *HP-UX 11i v2 Installation and Update Guide*, available at <http://www.docs.hp.com/en/oshpux11iv2.html>, discusses which particular Bastille settings are applied at each level.

Performance

ITS does not impact performance, but if the DMZ or MngDMZ levels are used, there may be a very small network performance slowdown due to the IPFilter packet filtering.

Documentation

Information can be found in the following documents:

- *bastille* (1M) manpage (add `/opt/sec_mgmt/share/man/` to `MANPATH`)
- *Bastille User's Guide*, delivered in `/opt/sec_mgmt/bastille/docs/user_guide.txt`
- HP-UX Bastille Web site at <http://www.hp.com/go/bastille>
- *HP-UX 11i v2 Installation and Update Guide*, available online at <http://www.docs.hp.com/en/oshpux11iv2.html>
- “HP-UX Bastille” on page 178

Obsolescence

Not applicable.

OpenSSL

OpenSSL A.00.09.07l.003 supporting HP-UX 11i v2 is based on the open source OpenSSL 0.9.7l and OpenSSL 0.9.8d products. OpenSSL offers a general-purpose cryptography library and implements the Secure Sockets Layer (SSL v2/v3) and Transport Layer Security (TLS v1) protocols.

The OpenSSL bundle contains the following:

- OpenSSL A.00.09.08d in the `/opt/openssl/0.9.8` directory
- OpenSSL A.00.09.07l in the `/opt/openssl/0.9.7` directory

The default version of OpenSSL that is enabled on HP-UX 11i v2 is OpenSSL A.00.09.07l. You can use the `/opt/openssl/switchversion.sh` script to switch between OpenSSL A.00.09.07l and OpenSSL A.00.09.08d. You can also use this script to swap the `openssl.cnf` file depending on the version of OpenSSL. However, this is an optional step.

Summary of Change

OpenSSL A.00.09.071.003 supports X.509 and X.509v3 certificates.

This version of OpenSSL also includes some defects fixed in the open source OpenSSL 0.9.7l and 0.9.8d product. A complete list of defect fixes is available in the OpenSSL Release Notes available at <http://www.docs.hp.com/en/internet.html#OpenSSL> as well as the OpenSSL Changelog at <http://www.openssl.org/news/changelog.html>.

If OpenSSL A.00.09.08d is enabled the following additional security features are available:

- Support for the following public-key encryption types:
 - Elliptic Curve Crypto (ECC)
 - Elliptic Curve Diffie-Hellman (ECDH)
 - Elliptic Curve Digital Signature Algorithm (ECDSA)
- Library support to the following hardware ENGINES:
 - 4758cca
 - aep
 - atalla
 - chil
 - cswift
 - gmp
 - nuron
 - sureware
 - ubsec

Impact

There are no impacts other than those previously listed.

Compatibility

There are no known compatibility issues.

Performance

There are no known performance issues.

Documentation

For more information, refer to the *OpenSSL A.00.09.071.002/A.00.09.071.003/A.00.09.08d.001 Release Notes* at <http://www.docs.hp.com/en/internet.html#OpenSSL>.

Obsolescence

Not applicable.

HP-UX Role-based Access Control

HP-UX Role-based Access Control (RBAC) is an alternative to the traditional “all-or-nothing” root user model, which grants permissions to the root user for all operations, and denies permissions to non-root users for certain operations. HP-UX RBAC allows you to distribute administrative responsibilities by creating roles with appropriate authorizations and assigning them to non-root users and groups.

NOTE

RBAC is available on the Software Pack (SPK) media for June 2007. For more information about SPK, see “Software Pack (Optional HP-UX 11i v2 Core Enhancements)” on page 27.

Summary of Change

RBAC B.11.23.04 includes the following changes:

- The introduction of a set of “privilege shells,” allowing a non-root user to automatically invoke `privrun` when needed by simply configuring a privilege shell as his/her default shell.
- Integration with HP System Management Homepage, allowing for the management of local RBAC roles, authorizations, and commands through the HP SMH Web interface.
- Integration with select commands, including `passwd` and `userdbset`.
- Select defect fixes.

Impact

This release of HP-UX RBAC will dramatically improve the operational usability and management of Role-based Access Control.

Compatibility

There is no compatibility impact.

Performance

There is no significant performance impact.

Documentation

For further information, see the *HP-UX 11i Security Containment Administrator's Guide: HP-UX Servers and Workstations* at <http://docs.hp.com/en/5991-1821/index.html>

Obsolescence

Not applicable.

HP-UX Secure Shell

HP-UX Secure Shell A.04.40.005, A.04.40.010, and A.04.40.011, based on OpenSSH 4.4p1, offers transparent encrypted security for HP-UX 11i v1, HP-UX 11i v2, and HP-UX 11i v3. The client/server architecture supports the SSH-1 and SSH-2 protocols and provides secured remote login, file transfer, and remote command execution. HP-UX Secure Shell A.04.40.011 is supported on the HP-UX 11i v2 operating system.

Following lists the availability of HP-UX Secure Shell products on HP-UX 11i v1, 11i v2, and 11i v3:

- A.04.40.010 - HP-UX 11i v1
- A.04.40.011 - HP-UX 11i v2
- A.04.40.005 - HP-UX 11i v3

Summary of Change

Following are the new features introduced in HP-UX Secure Shell Versions A.04.40.005, A.04.40.010, and A.04.40.011:

- The `ssh` ControlMaster directive for Connection Sharing now allows users to share up to 128 sessions
- The High Performance Enabled SSH/SCP (HPN) patch provides improved performance for remote-to-local and local-to-remote file transfers.

The following new features introduced in OpenSSH4.4p1 are also included in HP-UX Secure Shell Versions A.04.40.005, A.04.40.010, and A.04.40.011:

- Introduction of the `match` configuration directive to enable you to specify configuration options based on user, group, hostname, or address.
- Support for Diffie-Hellman Group Exchange Key Agreement
- New configuration directives introduced in the `sshd_config` file:
 - The `ForceCommand` directive-forces the execution of the command specified by `ForceCommand`, ignoring any other command supplied by the client.
 - The `PermitOpen` directive-specifies the destinations to which TCP port forwarding is permitted.

- Optional logging of transactions to sftp-server
- Enabled ssh clients to record port numbers for hosts stored in the `known_hosts` file
- Added `ExitOnForwardFailure` option so that ssh exits with a non-zero value if port forwarding requests fail.
- Extended `sshd_config` (5) subsystem declarations to accept command-line arguments
- Replaced all integer overflow susceptible invocations of `malloc()` and `realloc()` with `xcalloc()` and `xasprintf()` failure-checked allocation functions.

For more information on these new features and defect fixes, see the *HP-UX Secure Shell A.04.40.005, A.04.40.010, and A.04.40.011 Release Notes* available at <http://docs.hp.com/en/internet.html#Secure%20Shell>

Impact

There are no impacts other than those previously listed.

Compatibility

There are no known compatibility issues.

Performance

There are no known performance issues.

Documentation

The following documentation is available at <http://docs.hp.com/en/internet.html#Secure%20Shell>:

- *HP-UX Secure Shell A.04.40.010, A.04.40.011, and A.04.40.005 Release Notes*
- *HP-UX Secure Shell Getting Started Guide*

Obsolescence

HP-UX Secure Shell is no longer available on HP-UX 11.0. Support for the last HP-UX Secure Shell version (A.04.30) on HP-UX 11.0 will continue under the extended support contract.

HP-UX Software Assistant

HP-UX Software Assistant (SWA) C.01.01 is a command-line based tool that consolidates and simplifies patch management and security bulletin management on HP-UX systems.

Summary of Change

The SWA tool is new for HP-UX releases as of January 2007, includes Security Patch Check (SPC) and is the HP-recommended utility to use to maintain currency with HP-published security bulletins for HP-UX software. The bundle name is `SwAssistant`. The product number is B6834AA. It incorporates key functionality from Security Patch Check (`SecPatchCk` bundle name), ITRC patch assessment, and more.

Impact

SWA is for system administrators who patch and maintain the security of HP-UX systems.

- Is supported on HP-UX 11i systems.
- Provides a Command Line Interface (CLI).
- Is a client-side patch and security analysis/acquisition tool. It has ITRC Patch Assessment Tool and Security Patch Check (SPC) capabilities with a few minor exceptions, namely, patch set analysis.
- Analyzes a system (and some types of depots) for patch warnings, critical defects, security bulletins, missing Quality Pack patch bundle, and user-specified patches and patch chains.
- Uses an HP-supplied catalog file to analyze your system and generate reports.
- Optimizes the automatic selection of patch dependencies by accessing the quality of the dependency, providing the best case scenario for the dependency, minimizing changes to the system, and assessing future patch dependency changes.
- Produces the Action, Issue, and Detail Reports as well as a consolidated HTML report for you to see what issues are relevant to the software on the system or in the depot.
- Provides the ability to download patches and build a Software Distributor (SD-UX) depot which will fix many of the issues in the report. You can also use SWA to see recommended additional actions in the report which you need to take care of manually.
- Verifies patch integrity automatically (using MD5 cryptographic hash) before unpacking downloaded patches.

Compatibility

There are no known compatibility issues.

Performance

The performance of SWA is strongly characterized by the network connectivity/performance to get catalogs and get software. In the case of slow network connections, other operations such as analysis or local collections can be quicker.

Documentation

The HP-UX Software Assistant Web site at <https://www.hp.com/go/swa> provides the product overview, download links, and installation instructions.

The SWA manpages describe the commands and provide examples. For HP-UX releases, the manpages are available from the command line using the `man swa` command.

- `swa` (1M)
- `swa-report` (1M)
- `swa-get` (1M)
- `swa-step` (1M)
- `swa-clean` (1M)

The *HP-UX Software Assistant Release Notes* provides the features and functionality of the latest release, and known problems.

The *HP-UX Software Assistant System Administration Guide* provides an introduction to the tool, how to use it, integration with other HP products, how to use the reporting, and troubleshooting.

The documents are available on the HP Technical Documentation Web site at <http://docs.hp.com> (navigate to **11i v2**, then to **Patch Management**).

Obsolescence

Not applicable.

HP-UX Standard Mode Security Extensions

The HP-UX Standard Mode Security Extensions (SMSE) security features include enhancements or changes to be used in standard mode that were previously available only in trusted mode systems. The software is in the `StdModSecExt` bundle.

NOTE

SMSE is available on the Software Pack (SPK) media for June 2007. For more information about SPK, see “Software Pack (Optional HP-UX 11i v2 Core Enhancements)” on page 27.

SMSE is also available at HP Software Depot at <http://hp.com/go/softwaredepot>.

Summary of Change

Version B.11.23.02 of SMSE introduces integration with HP-UX Role-based Access Control, allowing more granular access controls. In addition, this release also introduces the `userstat` command for querying the status of user account information.

For information about changes to HP-UX Role-based Access Control, see “HP-UX Role-based Access Control” on page 187.

Impact

This update will allow you to configure SMSE such that only certain fields may be modified by an appropriately authorized administrator. The addition of the `userstat` command will provide a mechanism for querying the status of user account information.

Compatibility

There are no known compatibility issues.

Performance

There are no known performance issues.

Documentation

- The following documents describes the features of the HP-UX Standard Mode Security Extensions:
 - The “Creating Basic User Security” chapter of the *HP-UX Security Guide* (MPN 5991-1124)
 - *HP-UX Standard Mode Security Extensions Release Notes* (MPN 5991-0791)
- The above HP-UX documentation is available from the **Internet and Security Solutions** page of the HP Technical Documentation Web Site at <http://docs.hp.com/en/Internet.html>.
- Related documentation is at <http://docs.hp.com> (Hint: To locate the document, perform a search on the document's MPN):
 - *HP-UX Security Attributes Configuration Release Notes* (MPN B7609-90029)
 - *HP-UX Security Containment Release Notes* (MPN 5991-1125)

Obsolescence

Not applicable.

What is in This Chapter?

This chapter includes information about new and changed commands and system calls, including the following:

- LoginNLS (see page 194)
- trufgrep Command (see page 195)
- usermod Command Enhancement (Restricted Movement of Home Directories) (see page 195)

LoginNLS

The `login` command is used at the beginning of each terminal session to properly identify a prospective user. `login` can be invoked as a user command or by the system as an incoming connection is established. `login` can also be invoked by the system when a previous user shell terminates but the terminal does not disconnect

NOTE

LoginNLS is available on the Software Pack (SPK) media for June 2007. For more information about SPK, see “Software Pack (Optional HP-UX 11i v2 Core Enhancements)” on page 27.

Summary of Change

LoginNLS, version B.11.23.01, now also provides French Native language support for `login` (1).

Impact

You can set the `LANG` environment variable to select what language `login` (1) messages are displayed in, French or English.

Compatibility

There are no compatibility issues, except in the unlikely event that a test or application is dependent on the English text of `login` (1) messages.

Performance

There are no known performance issues.

Documentation

For further information, see the overview document available at Software Depot at <http://www.hp.com/go/softwaredepot> (navigate to **Security and Manageability**, then to **HP-UX Login NLS**).

See also the manpage `login` (1).

Obsolescence

This product is provided in HP-UX 11i v2 and is part of standard HP-UX beginning in HP-UX 11i v3.

trufgrep Command

The *trufgrep* (1) command searches the input text files for a pattern.

NOTE

TRUFGREP is available on the Software Pack (SPK) media for June 2007. For more information about SPK, see “Software Pack (Optional HP-UX 11i v2 Core Enhancements)” on page 27.

Summary of Change

TRUFGREP provides a new command - *trufgrep* (1).

Impact

trufgrep (1) is a new command which uses a different algorithm to implement *fgrep* (1) (1).

Compatibility

There are no known compatibility issues.

Performance

Under certain circumstances, *trufgrep* can give better performance compared to *grep* -F.

Documentation

For further information, see the *trufgrep* (1) manpage.

Obsolescence

trufgrep (1) is marked for obsolescence in a future release.

usermod Command Enhancement (Restricted Movement of Home Directories)

The *usermod* (1M) command modifies the user login on the system by changing the login-related information.

NOTE This `usermod` command enhancement (Restricted Movement of Home Directories) is available on the Software Pack (SPK) media for June 2007. For more information about SPK, see “Software Pack (Optional HP-UX 11i v2 Core Enhancements)” on page 27.

Summary of Change

The `usermod` (1M) command, with the `-m` option, moves the user's home directory mentioned in the command line.

In this enhancement, `usermod` (1M) has been modified to selectively prevent the movement of home directories with the `-m` option. If this “Restricted Movement of Home Directories” feature is installed, a configuration file `/etc/default/usermod` is installed on the system and the movement of “/” is restricted by default. System administrators can add home directories to the `/etc/default/usermod` file to restrict the movement of home directories with the `-m` option.

Impact

The `usermod` (1M) command has been enhanced to enable customers to selectively prevent the movement of home directories with the `-m` option.

Compatibility

There are no known compatibility issues.

Performance

There are no known performance issues.

Documentation

For further information, see the `usermod` (1M) and `usermod` (4) manpages

Obsolescence

Not applicable.

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 MPI (see page 198)
- Java JDK/JRE for HP-UX (see page 199)
- Perl (see page 200)

HP MPI

HP MPI Version 2.2.5 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

New features include the following:

- MPI-2 name publishing support
- New `mpirun` option `-netaddr`
- New environment variables:
 - `MPI_NETADDR`
 - `MPI_IB_CARD_ORDER`
 - `MPI_NRANKS`
 - `MPI_RANKID`
 - `MPI_LOCALNRANKS`
 - `MPI_LOCALRANKID`

Impact

There are no impacts.

Compatibility

There are no known compatibility issues.

Performance

There are no known performance issues.

Documentation

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/en/B6060-96018/index.html>

The *HP MPI V2.2.5 for HP-UX Release Note* is available at <http://docs.hp.com/en/B6060-96023/index.html>

Obsolescence

There are no obsolescence plans.

Java JDK/JRE for HP-UX

HP-UX Software Development Kit and Runtime Environment for the Java™ 2 Standard Edition Platform (SDK/RTE) provides the Java 2 programming tools and runtime environment which allow you to deploy Java technology with the best performance on systems running HP-UX 11i.

As of version 5.0, the names of the products have changed to HP-UX Java Development Kit and HP-UX Java Runtime Environment for the Java™ 2 Platform Standard Edition (JDK/JRE) 5.0. Version 5.0 is the equivalent of what would otherwise be known as v1.5.

The Runtime Plug-in (JPI) for HP-UX, Java™ edition,¹ allows you to use the most up-to-date version of the HP-UX Java Runtime Environment (RTE) with Netscape and Mozilla.

Also installed are the Java for HP-UX Add-on Standard C++ Runtime libraries for the SDK (product T1456AAaddon), for the RTE (product T1457AAaddon), for the JDK (product Java15JDKadd), and for the JRE (product Java15JRE). 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.

The ObsJava13 (Obsolescence for Java 1.3) bundle removes SDK/RTE 1.3 upon installation of the HP-UX 11i v2 Operating Environments.

Products are as follows:

- Java15JDK - Java 1.5.JDK
- Java15JDKadd - Java 1.5.JDK Addon
- Java15JRE - Java 1.5 JRE
- Java15JREadd - Java 1.5 JRE Addon
- T1456AA - Java 1.4 SDK
- T1456AAaddon - Java 1.4 SDK Addon
- T1457AA - Java 1.4 RTE
- T1457AAaddon - Java 1.4 RTE Addon
- T1458AA - Java 1.4 Plugin
- ObsJava13 - Obsolescence for Java 1.3 (1.0)

1. There is no plug-in for JDK/JRE 5.0. The functionality is incorporated into the products.

Summary of Change

Summary

Java 1.4.2.12, Java 1.4.2.13, Java 5.0.06 and Java 5.0.07 contain defect fixes.

Impact

There is no impact.

Compatibility

There are no known compatibility issues.

Performance

There are no known performance issues.

Documentation

For the latest documentation, refer to the Java Technology for HP-UX 11i Web site at <http://hp.com/go/java> and select “information library” in the left navigation bar.

Obsolescence

SDK/RTE 1.3 has reached end-of-life and is not included in this release. The ObsJava13 (Obsolescence for Java 1.3) bundle removes SDK/RTE 1.3 upon installation of the HP-UX 11i v2 Operating Environments.

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 has been updated to version 5.8.8 build 817.1 with the following changes:

- `chdir`, `chmod` and `chown` can now work on file handles as well as filenames, if the system supports respectively `fchdir`, `fchmod` and `fchown`.
- `h2xs` implements new option `--use-xsloader` to force use of *XSLoader* even in backwards compatible modules. Any enums with negative values are now skipped.
- `perlivp` implements new option `-a` and will not check for `*.ph` files by default any more. Use the `-a` option to run all tests.
- Some of the modules are upgraded to latest revisions.

- Some of the bug fixes done in this release are
 - no warnings *category* works correctly with `-w`
 - Remove over-optimization
 - `sprintf()` fixes
 - Debugger and Unicode slowdown
- Provides large `hostname/uname` support.
- The perl interpreter is built to allow the use of a site customization script.
- `Config.pm` is now about 3K rather than 32K, with the infrequently used code and `%Config` values loaded on demand.
- There has been a fair amount of refactoring of the “C” source code, partly to make it tidier and more maintainable.
- `${^UTF8LOCALE}` has been added to give perl space access to `PL_utf8locale`.
- The size of the arenas used to allocate SV heads and most SV bodies can now be changed at compile time.
- From now on all applications embedding perl will behave as if perl were compiled with `-DPERL_USE_SAFE_PUTENV`.
- Most “C” source files now have comments at the top explaining their purpose, which should help anyone wishing to get an overview of the implementation.
- The debugger can now emulate stepping backwards, by restarting and rerunning all bar the last command from a saved command history. It (`lib/perl5db.pl`) can now save all debugger commands for sourcing later, and can display the parent inheritance tree of a given class.

Impact

There are no impacts other than those previously listed.

Compatibility

Perl 5.8 is not binary compatible with earlier releases of Perl. for XS modules. These modules have to recompile. (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.

The new safe signals implementation postpones handling of signals until it's safe (in between the execution of low level opcodes). This change may have surprising side effects because signals no longer interrupt Perl instantly.

Performance

- Weak reference creation is now $O(1)$ rather than $O(n)$. Weak reference deletion remains $O(n)$, but if deletion only happens at program exit, it may be skipped completely.

- There are improvements to reduce the memory usage of “sort” and to speed up some cases.
- As much data as possible in the C source files is marked as “static”, to increase the proportion of the executable file that the operating system can share between process, and thus reduce real memory usage on multi-user systems.
- The internal pointer mapping hash used during ithreads cloning now uses an arena for memory allocation. In tests this reduced ithreads cloning time by about 10%.
- “reverse sort ...” is now optimized to sort in reverse, avoiding the generation of a temporary intermediate list.
- “for (reverse @foo)” now iterates in reverse, avoiding the generation of a temporary reversed list.

Documentation

For further information, see the following:

- www.perl.org
- www.activestate.com
- <http://learn.perl.org>

Obsolescence

Not applicable.

What is in This Chapter?

This chapter usually describes internationalization functionality. Topics in this chapter are unchanged for the June 2007 release of HP-UX 11i v2.

For a summary of changes in previous releases of HP-UX 11i v2, see Chapter 3, “What is New at a Glance,” on page 33.

What is in This Chapter?

This chapter usually describes other new and changed operating-system software functionality. Topics in this chapter are unchanged for the June 2007 release of HP-UX 11i v2.

For a summary of changes in previous releases of HP-UX 11i v2, see Chapter 3, “What is New at a Glance,” on page 33.

