

HP-UX 11i Version 2 December 2005 Release Notes

HP 9000 Servers and HP Integrity Servers



Manufacturing Part Number: 5992-2330

December 2005, 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 that describes what is new, changed, deprecated, or obsoleted in HP-UX 11i v2. Each document in this series pertains to the release date indicated in its title, and it describes the changes since the previous release of HP-UX 11i v2.¹

For the latest document in this series, see the HP-UX 11i Version 2 documentation on the Web at <http://www.docs.hp.com/hpux/os/11iv2>. The documents in this series are also available on the Instant Information media.

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

Current Document in This Series

- *HP-UX 11i Version 2 December 2005 Release Notes*
December 2005, Edition 2, MPN 5992-2330

Previous Documents in This Series

- *HP-UX 11i Version 2 December 2005 Release Notes*
December 2005, Edition 1, MPN (retired)
- *HP-UX 11i Version 2 May 2005 Release Notes*
May 2005, Edition 1, MPN 5991-1101
- *HP-UX 11i Version 2 September 2004 Release Notes*
September 2004, Edition 1, MPN 5990-8153
- *HP-UX 11i Version 2 March 2004 Release Notes*
March 2004, Edition 1, MPN 5990-6739
- *HP-UX 11i Version 2 Release Notes*
October 2003, Edition 2, MPN 5990-6737
- *HP-UX 11i Version 2 Release Notes (replaced by Edition 2)*
September 2003, Edition 1, MPN (retired)

HP Encourages Your Comments

Please direct comments regarding this guide to:

Hewlett-Packard Company
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<http://docs.hp.com/en/feedback.html>

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

Typographic Conventions

We use the following typographical conventions.

<i>audit</i> (5)	An HP-UX manpage. <i>audit</i> is the name and <i>5</i> 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.
UserInput	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 December 2005 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 December 2005 Release Notes?

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

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

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

NOTE

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

Where Should I Begin?

This book is organized in such a way that you need only read Chapter 3, “What is New at a Glance,” on page 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 December 2005 Release?”, in particular, will give you a general overview of how this release differs from the May 2005 release of HP-UX 11i v2 (B.11.23).

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

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

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

- The HP-UX Instant Information media. See “HP-UX 11i v2 Instant Information Media” on page 14 for more information.
- At the Web site <http://www.docs.hp.com/hpux/os/11iv2/>.

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

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

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

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

Information about the HP-UX 11i v1.5 release is available on the Web at <http://docs.hp.com/en/hpuxos11iv1.5.html>. Information about HP-UX 11i v1.6 release is available at <http://www.docs.hp.com/hpux/os/11iv1.6/>.

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

Locating Release Notes for Previous Versions of HP-UX

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

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

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

Other Sources of Information about This Release

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

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

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

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

HP-UX 11i Version 2 Installation and Update Guide

HP-UX 11i Version 2 Reference

Ignite-UX Administrator's Guide

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

Software Distributor Administrator's Guide

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

HP-UX System Partitions Guide: Administration for nPartitions

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

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

Of additional interest is the *HP-UX Networking Ports Reference Guide*, which can be found in the "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://www.hp.com/products1/unix/operating/index.html>

HP-UX Welcome Page

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

Manual Pages

For the HP-UX 11i v2 release, the manual pages (manpages) are available on the HP-UX Welcome Page of your system, on the Instant Information DVD under the title *HP-UX Reference*, through the use of the `man` command, and on the Web at

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

README Documents

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

White Papers on HP-UX

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

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

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

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

What is in the Remaining Chapters?

The remaining chapters of these release notes are as follows:

- Chapter 2, “Introduction to HP-UX 11i Version 2,” on page 17, provides an overview of the five Operating Environments, along with information about Software Pack and about compatibility issues.
- Chapter 3, “What is New at a Glance,” on page 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, “Server-Specific Information,” on page 77, 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 95, includes information of particular interest to system administrators.
- Chapter 6, “Disk and File Management,” on page 141, presents information regarding directory, file system, and disk management.
- Chapter 7, “Internet and Networking,” on page 153, covers changes to networking functionality and Internet services.
- Chapter 8, “Security,” on page 163, covers changes and enhancements to security services.
- Chapter 9, “Commands and System Calls,” on page 171, includes information about new and changed commands and system calls.
- Chapter 10, “Libraries and Programming,” on page 173, provides information of particular interest to programmers, including changes to compilers, editors, and libraries.
- Chapter 11, “Internationalization,” on page 181, presents information about text fonts and converters relating to various international languages.
- Chapter 12, “Other Functionality,” on page 183, includes additional applications or functionality in the Operating Environments.

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 December 2005 (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 24)
 - 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)
 - HP-UX Compatibility between HP-UX Releases, Across Architectures, and Across Hardware Platforms (see page 28)
 - Compatibility Issues or Exceptions in HP-UX 11i v2 December 2005 (see page 31)
 - Support of Products (see page 32)

Welcome to HP-UX 11i v2 December 2005

The December 2005 release of HP-UX 11i v2 continues as a joint release of HP-UX 11i v2 supported on both the HP 9000 and HP Integrity server families. This enterprise release offers the full range of HP-UX Operating Environments and capabilities. The December 2005 release continues to expand on HP-UX 11i v2 virtualization capabilities, security enhancements, and improvements of the VERITAS file system. Significant new capabilities include the following:

- Continued support and improvements for HP Integrity Virtual Machines and vPars
- VERITAS Volume Manager (VxVM) version 4.1
- HP-UX Security Attributes Configuration tool

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

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

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

With this December 2005 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://docs.hp.com/en/oshpux11iv2.html>.

1. For more information about compatibility, see “HP-UX 11i v2 Compatibility” on page 28.

HP-UX 11i Release Names and Release Identifiers

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

Table 2-1 **HP-UX 11i Releases**

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

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

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

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

```
# swlist | grep HPUX11i
```

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

```
HPUX11i-MCOE B.11.23.0512 HP-UX Mission Critical Operating Environment  
Component
```

The above revision string represents the following:

B.11.23 = HP-UX 11i v2

0505 = December 2005 Update Release

HP-UX 11i v2 Software and Driver Bundle Types

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

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

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

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

HP-UX 11i v2 Operating Environments

Overview

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

- **HP-UX 11i v2 Foundation OE (FOE)** — Designed for the demands of Web servers, content servers and front-end servers, this OE includes applications such as HP-UX Web Server Suite, Java, and Mozilla Application Suite. This OE is bundled as `HPUX11i-OE`. For more details, see “HP-UX 11i v2 Foundation Operating Environment” on page 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 24.

IMPORTANT

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

-
- **HP-UX 11i v2 Technical Computing OE (TCOE)** — 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-VXFS 3.5
- Base-VXVM (VERITAS Volume Manager)
- Disks and File Systems (f_{sweb})
- EnableVxFS
- Event Monitoring Service
- FEATURE11i
- FDDI (PCI)
- FibreChannel (PCI)
- Gigabit Ethernet (PCI)
- Gigabit Ethernet Next Generation (PCI)
- HP CIFS Client
- HP CIFS Server
- HP Instant Capacity (iCAP, formerly iCOD)
- HP WBEM Services for HP-UX
- HP-UX Kernel Configuration
- HP-UX Peripheral Device Tool (pd_{web})
- HP-UX Security Attributes Configuration
- HP-UX WBEM Fibre Channel Provider
- HP-UX WBEM LVM Provider
- HP-UX WBEM SCSI Provider
- HWEnable11i
- iEther (PCI)
- LDAP-UX Integration
- Logical Volume Manager (LVM)
- nPartition Provider
- Obsolescence Bundle
- ONC+
- Online Diagnostics
- OpenSSL
- PAM Kerberos
- PRM Libraries
- Quality Pack Patch Bundle
- RAID-01
- Runtime Plug-in (JPI) for Mozilla for the Java™ 2 Platform v1.3 and v1.4
- SAM-NNC
- scsiU320-00
- Software Distributor (SD)
- SWGETTOOLS
- SysMgmtBASE
- System Administration Manager (SAM)
- Update-UX
- USB-00
- WBEM-LAN-00

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

Default-Installed Features

- Distributed Systems Administration Utilities (not in TCOE)
- GTK+ Libraries
- HP Global Workload Manager
- HP Integrity Virtual Machines Provider
- HP OnlineJFS 4.1 (B3929EA) (EOE and MCOE only)
- HP System Management Homepage
- HP-UX Bastille
- HP-UX IPFilter
- HP-UX Java Runtime Environment (JRE) v5.0 (not part of TCOE in December 2005)
- HP-UX JDK for the Java™ 2 Platform Standard Edition (J2SE) v5.0 (not part of TCOE in December 2005)
- HP-UX Secure Shell
- HP-UX Software Development Kit and Runtime Environment for the Java 2 Platform Standard Edition v1.3 and 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) v1.3, 1.4, and 5.0
- Judy Libraries
- Mozilla Application Suite
- Mozilla Source
- Partition Manager
- Perl
- Sec00Tools
- Security Patch Check
- Utilization Provider
- vPar Provider
- VMGuestLib

Selectable Features

NOTE

The December 2005 HP-UX 11i v2 Operating Environments DVD does not contain Ignite-UX, which was formerly a selectable product. You can install the latest version of Ignite-UX from the HP-UX 11i v2 Applications Software DVD included in the HP-UX 11i v2 media kit.

- 10 Gigabit Ethernet
- ATM-00
- Base-VXFS 4.1
- HP OnlineJFS 3.5 (B3929DA) (EOE and MCOE only)
- HP Pay per use
- HP Systems Insight Manager
- HP-UX Host Intrusion Detection System (HIDS) (servers only)
- HP-UX iSCSI Software Initiator
- HyperFabric
- Java (Out of Box) Tunable
- Mobile IPv6

- Netscape Directory Server
- PCI MUX
- RAID Utilities (ACUGUIUtils)
- Security Level 10
- Security Level 20
- Security Level 30
- SerialSCSI-00
- 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 Process Resource Manager

Default-Installed Features

- See “HP-UX 11i v2 Foundation Operating Environment” on page 21

Selectable Features

- See “HP-UX 11i v2 Foundation Operating Environment” on page 21

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
- Cluster Object Manager

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 Workload Manager
- HP-UX Workload Manager Toolkits

Default-Installed Features

- See “HP-UX 11i v2 Foundation Operating Environment” on page 21

Selectable Features

- See “HP-UX 11i v2 Foundation Operating Environment” on page 21

IMPORTANT

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

NOTE

In the December 2005 release, the Java for HP-UX version 5.0 products are not a part of the Technical Computing Operating Environment (TCOE).

Always-Installed Features¹

- Base-VXVM (VERITAS Volume Manager)
- Disks and File Systems (fsweb)
- EnableVxFS
- HP CIFS Client
- HP CIFS Server
- Event Monitoring Service
- FEATURE11i
- FDDI (PCI)
- FibreChannel (PCI)
- Gigabit Ethernet (PCI)
- Gigabit Ethernet Next Generation (PCI)

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

- HP 3D Technology for the Java 2 Standard Edition Platform (Itanium®-based systems only)
- HP Instant Capacity (iCAP, formerly iCOD)
- HP Message Passing Interface (MPI)
- HP MLIB
- HP WBEM Services for HP-UX
- HP-UX 3D Graphics Run Time Environment and Developer's Kit (Workstations not supported)
- HP-UX Accounts for Users and Groups
- HP-UX Kernel Configuration
- HP-UX Peripheral Device Tool
- HP-UX Security Attributes Configuration
- HP-UX WBEM Fibre Channel Provider
- HP-UX WBEM LVM Provider
- HP-UX WBEM SCSI Provider
- HWEnable11i
- iEther (PCI)
- LDAP-UX Integration
- Logical Volume Manager (LVM)
- nPartition Provider
- Obsolescence Bundle
- ONC+
- Online Diagnostics
- OpenSSL
- PAM Kerberos
- Quality Pack Patch Bundle
- RAID-01
- Runtime Plug-in (JPI) for Mozilla for the Java™ 2 Platform v1.3 and v1.4
- scsiU320-00
- SerialSCSI-00
- Technical System Configuration (TechSysConf)
- SAM-NNC
- Software Distributor (SD)
- SWGETTOOLS
- SysMgmtBASE
- System Administration Manager (SAM)
- Update-UX
- USB-00
- VERITAS File System (base VxVS/JFS)
- VMGuestLib
- WBEM-LAN-00

Default-Installed Features

- See “HP-UX 11i v2 Foundation Operating Environment” on page 21

Selectable Features

- See “HP-UX 11i v2 Foundation Operating Environment” on page 21

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

- HP-UX 11i Security Containment (see page 164)
- HP-UX Role-Based Access Control (see page 166)

NOTE

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

HP-UX 11i v2 Compatibility

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

Introduction

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

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

Compatibility across Operating System Releases

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

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

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

NOTE

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

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

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

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

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

Upgradability across Architectures

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

Independent Software Vendor (ISV) Compatibility across Architectures

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

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

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

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

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

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

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

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

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

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

Binary Compatibility Across Hardware Platforms

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

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

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

PA-8800 Binary Compatibility

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

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

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

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

NOTE

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>.

Chapter 4: Workstation- and Server-Specific Information

- 10GigEthr-00 (10 Gigabit Ethernet) (see page 84)
- USB-00 (Universal Serial Bus) (see page 90)

Chapter 5: General System Administration

- HP Serviceguard (see page 114)
- HP Systems Insight Manager (see page 118)
- HP-UX Accounts for Users and Groups (see page 123)
- HP-UX Peripheral Device Tool (see page 126)
- Ignite-UX (see page 131)
- Partition Manager (see page 111)

Chapter 6: Disk and File Management

- VERITAS Volume Manager (VxVM) (see page 149)

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 December 2005 Release? (see page 34)
- What is New in the May 2005 Release? (see page 40)
- What is New in the September 2004 Release? (see page 46)
 - What is New in September 2004 for Customers Migrating from HP-UX 11i v1? (see page 46)
 - What is New in September 2004 for Existing Customers of HP-UX 11i v2? (see page 55)
- What is New in the March 2004 Release? (see page 62)
- What is New in the Initial (October 2003) HP-UX 11i v2 Release? (see page 65)

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 sections in the remainder of this document.

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

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

Chapter 4: “Server-Specific Information” (see page 77)

- Hardware Enablement Patch Bundle (HWEenable11i): Added support for hp BladeSystems Itanium BL60p servers. Several I/O driver bundles added or updated. (See “Hardware Enablement Patch Bundle” on page 78.)
- HP Instant Support Enterprise Edition (ISEE): Updated to incorporate defect fixes and feature enhancements. (See “HP Instant Support Enterprise Edition” on page 79.)
- Networking and Mass Storage Drivers (see page 81)
 - 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. (See “10GigEthr-00 (10 Gigabit Ethernet)” on page 84.)
 - FibrChanl-00: Updated to incorporate driver fixes. (See “FibrChanl-00 (Fibre Channel)” on page 87.)
 - FibrChanl-01: Updated to version B.11.23.04.01 with defect fixes and support for to-be-released AB378A and AB379A cards. (See “FibrChanl-01 (Fibre Channel)” on page 87.)
 - GigEther-00: Updated to incorporate defect fixes. (See “GigEther-00 (Gigabit Ethernet)” on page 83.)
 - RAID-01: Updated to incorporate defect fixes. (See “RAID-01” on page 88.)
 - scsiU320-00: Updated with quality and diagnostic improvements for Ultra320 SCSI solutions. (See “scsiU320-00” on page 89.)
 - **New Product:** SerialSCSI-00: Added to the HP-UX 11i v2 Operating Environments to support cards that will be released in the future. (See “SerialSCSI-00” on page 91.)
 - USB-00: Updated to version C.01.02.01 with quality improvements. (See “USB-00 (Universal Serial Bus)” on page 90.)
- Supported Systems: HP-UX 11i v2 not supported on HP Workstations. (See “Supported Systems” on page 91.)

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

- **New Product:** Distributed Systems Administration Utilities: Improves manageability of distributed systems and Serviceguard clusters. (See “Distributed Systems Administration Utilities” on page 97.)
- 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. (See “Enterprise Cluster Master Toolkit Version” on page 100.)
- Event Monitoring Services: Updated to incorporate defect fixes. Will be deprecated post HP-UX 11i v3. (See “Event Monitoring Services” on page 101.)
- Feature Enablement Patch Bundle (FEATURE11i): Provides new patches required for vPars, VERITAS products, Infiniband, and Serial SCSI functionality. (See “Feature Enablement Patch Bundle (Feature11i)” on page 102.)
- GlancePlus Pak: Updated to version C.04.50 with elimination of the dependency of `tttd` 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. (See “GlancePlus Pak” on page 103.)
- High Availability Monitors: Updated to support the update of Event Monitoring Service (EMS). (See “High Availability Monitors” on page 104.)
- **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. (See “HP Integrity Virtual Machines Provider” on page 105.)
- **New Product:** HP Integrity VM Support Library: Subset of the HP Integrity Virtual Machines API Library used by HP Integrity Virtual Machines Provider. (See “HP Integrity VM Support Library” on page 106.)
- HP Partitioning (see page 107)
 - 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. (See “HP Global Workload Manager” on page 107.)
 - HP-UX Workload Manager: Updated to version A.03.00.01 with cleaner installations and the ability to manage a complex with mixed architectures. (See “HP-UX Workload Manager” on page 109.)
 - nPartition Provider: Updated to version B.23.01.05.01 to add support for new cell-based HP servers. (See “nPartition Provider” on page 110.)
 - 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. (See “Partition Manager” on page 111.)
 - **New Product:** vPar Provider: Used by HP WBEM Services for HP-UX to extract information about virtual partitions on the system. (See “vPar Provider” on page 113.)

- **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. (See “HP Serviceguard” on page 114.)
- **HP Serviceguard NFS Toolkit:** Updated to version A.11.23.04 to incorporate fixes for two defects. (See “HP Serviceguard NFS Toolkit” on page 116.)
- **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. (See “HP System Management Homepage” on page 117.)
- **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. (See “HP Systems Insight Manager” on page 118.)
- **HP WBEM Services for HP-UX:** Updated to version A.02.00.08 to incorporate defect fixes. (See “HP WBEM Services for HP-UX” on page 122.)
- **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 group accounts. (See “HP-UX Accounts for Users and Groups” on page 123.)
- **HP-UX Kernel Configuration:** Now a plug-in tool in the HP System Management Homepage. TUI changed from previous ObAM-based TUI. (See “HP-UX Kernel Configuration” on page 124.)
- **HP-UX Peripheral Device Tool:** Updated to version B11.23.05. The *wacnf* (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 integrated. (See “HP-UX Peripheral Device Tool” on page 126.)
- **New Product:** **HP-UX WBEM Fibre Channel Provider:** Used by client applications to determine information about Fibre Channel HBAs and their properties. (See “HP-UX WBEM Fibre Channel Provider” on page 127.)
- **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. (See “HP-UX WBEM LAN Provider for Ethernet Interfaces” on page 128.)
- **New Product:** **HP-UX WBEM LVM Provider:** Used by client applications to determine information about the LVM via HP WBEM Services for HP-UX. (See “HP-UX WBEM LVM Provider” on page 129.)
- **New Product:** **HP-UX WBEM SCSI Provider:** Used by client applications to determine information about SCSI HBAs present on the system. (See “HP-UX WBEM SCSI Provider” on page 130.)
- **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 the AR DVD; it is not included in the December 2005 Operating Environments. (See “Ignite-UX” on page 131.)
- **Obsolescence Bundle:** Upon update, now removes MySQL in addition to other obsolete products. (See “Obsolescence Bundle” on page 132.)

- **Online Diagnostics:** Updated to include HPVM enablement, as well as integration of `slview` with HP System Management Homepage. (See “Online Diagnostics” on page 133.)
- **Quality Pack Patch Bundle:** Included in this release as a superset of the May 2005 HP-UX 11i v2 Quality Pack. (See “Quality Pack Patch Bundle” on page 135.)
- **Software Distributor:** Updated to incorporate defect fixes. (See “Software Distributor” on page 136.)
- **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. (See “Software Package Builder” on page 137.)
- **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 11iv2 December 2005 or later releases. (See “Update-UX” on page 138.)
- **New Product:** Utilization Provider: Lightweight daemon (`utild`) records system-utilization data on a 5-minute interval. (See “Utilization Provider” on page 139.)

Chapter 6: “Disk and File Management” (see page 141)

- **New Product:** Disks and File Systems (`fsweb`): Provides a GUI to HP-UX system administration tasks. (See “Disks and File Systems” on page 142.)
- **New Bundle:** `EnableVxFS`: Provides libraries and commands for VXFS. (For information about VXFS, see “VERITAS File System (Base-VXFS and HP OnlineJFS)” on page 147.)
- **HP CIFS Client:** Updated to version A.02.01 with a substantially revised and improved code base. (See “HP CIFS Client” on page 143.)
- **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). (See “HP CIFS Server” on page 145.)
- **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. (See “VERITAS File System (Base-VXFS and HP OnlineJFS)” on page 147.)
- **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. (See “VERITAS Volume Manager (VxVM)” on page 149.)

Chapter 7: “Internet and Networking” (see page 153)

- **HP-UX Web Server Suite** (see page 154):
 - **HP-UX Apache-based Web Server:** Updated to version 2.0.54.03 as primarily a bug fix release. (See “HP-UX Apache-based Web Server” on page 155.)

- 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. (See “HP-UX Tomcat-based Servlet Engine” on page 155.)
- HP-UX Webmin-based Admin: Updated to version 1.070.05 as primarily a bug fix release. (See “HP-UX Webmin-based Admin” on page 156.)
- **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. (See “LDAP-UX Integration” on page 157.)
- 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. (See “Mozilla Web Browser” on page 159.)
- 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. (See “Netscape Directory Server for HP-UX” on page 160.)

Chapter 8: “Security” (see page 163)

- 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. (See “HP-UX 11i Security Containment” on page 164.)
- HP-UX IPFilter: Updated to version A.03.05.12 with NOSYNC pre-enablement, RPC enhancements, and defect fixes. (See “HP-UX IPFilter” on page 165.)
- 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. (See “HP-UX Role-Based Access Control” on page 166.)
- 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. (See “HP-UX Secure Shell” on page 168.)
- **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. (See “HP-UX Security Attributes Configuration” on page 169.)

Chapter 9: “Commands and System Calls” (see page 171)

- No changes in this release.

Chapter 10: “Libraries and Programming” (see page 173)

- HP MLIB: Updated to version 9.4 with quality enhancements. (See “HP MLIB” on page 174.)
- 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. (See “HP MPI” on page 175.)
- Java 2 Standard Edition Platform (see page 176):

- 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. (See “JDK, JRE, and Plug-In for HP-UX for the Java Platform” on page 176.)
- **New Product:** HP-UX JDK for the Java™ 2 Platform Standard Edition and HP-UX Java Runtime Environment (JDK/JRE) v5.0: New with the December 2005 release of HP-UX 11i v2. (See “JDK, JRE, and Plug-In for HP-UX for the Java Platform” on page 176.)
- Java Out-of-Box: Updated to incorporate defect fixes. (See “Java Out-of-Box” on page 177.)
- **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. (See “Judy Libraries” on page 178.)
- **Perl 5.8.3 build 809:** Includes better Unicode support and numeric accuracy, new I/O and thread implementation, and other changes. (See “Perl” on page 179.)

Chapter 11: “Internationalization” (see page 181)

- No changes in this release.

Chapter 12: “Other Functionality” (see page 183)

- 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 it is strongly recommended that you consult the *HP-UX 11i Version 2 May 2005 Release Notes* for information that is not included here.

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.

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.

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. Compatibility issue noted with certain configurations of Bastille.
- **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 MySQL, in addition to other obsolete products, upon installation of HP-UX 11i v2 December 2005. (See “Obsolescence Bundle” on page 132.)
- **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.

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.

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.

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.

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.

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`, `libterm`) 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.

Chapter 11: “Internationalization”

- No changes in this release.

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 it is strongly recommended that you consult the *HP-UX 11i Version 2 September 2004 Release Notes* for information that is not included here.

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

1. What is New in September 2004 for Customers Migrating from HP-UX 11i v1? (see page 46)
2. What is New in September 2004 for Existing Customers of HP-UX 11i v2? (see page 55)

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 55 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 `shmmni` tunable parameter increased.
- Update-UX: Updated to incorporate defect fixes.

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

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

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

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

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

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

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

- BIND 9.2.0: Includes incremental zone transfer, DNSSEC, dynamic DNS update, TSIG-based security, lightweight resolver library and daemon, improved logging mechanism, and other features.
- BOOTP and DHCP: Both implement a new tag to configure the IP address of the tftp server. Two new options included in the /etc/dhcptab file.
- DHCPv6: New product with HP-UX 11i v2.
- The inetd daemon: New variable and new command-line option added.
- IPv4 Address Display: The IPv4-mapped-IPv6 address display is now changed to display an IPv4 address.
- IPv6-enabled Internet Services products: Several products, including inetd, telnet, and R-commands, are IPv6 enabled.
- Logging User Accounting Information: The telnetd, rlogind, remshd, rexecd and ftpd utilities now use the new scalable utmps/wtmps/btmps interfaces to log user accounting information.
- Multimedia Streaming Protocols (MSP): Upon upgrade to HP-UX 11i v2, MSP will be removed. MSP will be available later as a Web upgrade. Customers who have not installed MSP on HP-UX 11i v1 will be unaffected.
- The rbootd remote boot server for RMP clients: Obsolete. Clients using the RMP protocol no longer supported; you must move from RMP to BOOTP.
- The remsh/rexec command and remote execution server: The remshd() function has been changed to display an error message under certain circumstances. The remsh/rexec process may appear hung when a user executes certain remote commands.
- The rexecd remote execution server: New option added to prevent a user from logging in as superuser. The [use_psd] option cannot be specified in the /etc/pam.conf file for rexecd.
- Route Administration Manager for IPv6 Routing Protocols (RAMIPv6): Upon upgrade to HP-UX 11i v2, RAMIPv6 will be removed. RAMIPv6 will be available later as a Web upgrade. Customers who have not installed RAMIPv6 on HP-UX 11i v1 will be unaffected.
- The rwhod server: Updated to use the utmps interfaces to read the user accounting information. Now supports valid hostname characters as per RFC 952 only.
- Secure Internet Services: New options added. IPv6 enabled for R-commands. Kerberos supported in an IPv6 environment for ftp, r-commands, and telnet.
- Sendmail 8.11.1: Offers several new features, including multiple queue directories, enhanced status codes as defined by RFC 2034, client port options, daemon port options, IPv6 support, and more.
- SLP 0.8: New with HP-UX 11i v2. Includes dynamic service tracking, ease of administration, and ease of development.
- TCP Wrappers 7.6: Includes features such as monitoring incoming requests for Internet Services, controlling access to services spawned by inetd, and enforcing access control in stand-alone daemon programs, among others.
- The telnetd function: Contains two new options.

- WU-FTPD 2.6.1: Offers several new features, including virtual hosts support, the `privatepw` utility, IPv6 support, and new command-line options, as well as other changes.
- LAN Administration Commands: Include support for IPoIB, 64-bit MIB, and Native and Non-Native DLPI drivers developed by IHVs, plus new command-line options for `lanadmin`.
- Mozilla Application Suite 1.4.0.01: Contains full Japanese localization as well as other defect fixes and enhancements. Security bulletin posted.
- Netscape Directory Server 6.11: Includes enhancements to Multi-Master replication, login enhancements, virtual attribute search, new plug-ins support, and a data interoperability feature.
- Network Tracing and Logging (NetTL): Changes include formatting support for IPoIB and new CLI option to support configurable trace buffer timer value.
- Network Transport (ARPA): Changes include support for enhancements of HP-UX DLPI; enhancements to CKO interfaces between HP-UX transport and DLPI; removed support for dump reading by `netstat` and `arp`; IPv6 transport supported, and other changes. Problem and work-around noted: HP-UX sends TCP packets with incorrect window size. (
- Point-to-Point Protocol (PPP): Available on HP-UX 11i v2. Includes changes to Point-to-Point Protocol over Ethernet (PPPoE) and Point-to-Point Protocol for IPv6 (PPPv6).
- STREAMS/UX: The *HP-UX 11i v2 September 2004 Release Notes* contains an error and should instead read as follows: For non-blocking writes, during flow control conditions, STREAMS now returns **success (0 return value)** in the case of partial writes on STREAMS-based pipes.

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

September 2004 Release Notes, Chapter 8: “Security”

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

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

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

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

- The `execve[*]()` system calls: Beginning with HP-UX 11i v1.6, the kernel ignores `setuid` and `setgid` bits on scripts for security reasons. In addition, buffer overflow protection is now enabled.
- The `fuser` Command: Performance improved.
- The `insf`, `lssf`, and `mksf` Commands: Now support IHV drivers.
- The `mmap()` Function: Now possible to perform mappings between a process's address space and I/O device registers or memory.
- The `olrad` Command: The `rad` (1M) command replaced by the more robust `olrad` (1M) command.
- Post/Wait: New. Provides a fast, lightweight synchronization facility for user applications.
- The `ps` command: The default width is now set to 128 characters and a default file has been provided to define the length of the command field, which can be between 64-1020.
- The `rc` Shell Script: When a system needs reboot for some reason, messages in the file `/etc/rc.bootmsg` will be displayed before the system is rebooted.
- The `scsimgr` and `scsiscan` Commands: Deprecated. Planned for obsolescence in HP-UX 11i v3.
- The `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 46.

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 `mount` 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 `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 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 it is strongly recommended that you consult the *HP-UX 11i Version 2 March 2004 Release Notes* for information that is not included here.

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

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

March 2004 Release Notes, Chapter 5: “General System Administration”

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

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

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

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

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

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

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

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

March 2004 Release Notes, Chapter 8: "Security"

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

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

- Topics in this chapter are unchanged for March 2004.

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

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

March 2004 Release Notes, Chapter 11: "Internationalization"

- ATOK 8 Japanese input method now deprecated.

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

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

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

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

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

- Always-installed Network Drivers:
 - 100Base-T Driver, `btlan`: Updated to support interrupt migration and OLAR on Itanium®-based platforms.
 - 1000Base-T (Gigabit Ethernet): GigEther-01 supported and IEther-00 introduced. 1024~9000 MTU supported.
 - PCI FDDI: Enhanced to provide FDDI network connectivity for Itanium®-based platforms.
- Mass Storage Drivers:
 - Fibre Channel Tachlite Driver: Updated to support interrupt migration and OLAR.
 - SCSI Drivers: Support limited to PCI cards. New cards A5149A and A5838A supported, with limitations. HVD cards A4800A, A5159A, and A5159B not supported. OLAR of A6828A and A6869A cards supported. Interrupt migration supported.
- Selectable Network Drivers:
 - ATM Networking Solution: Now available on Itanium®-based platforms. Only ATM adapter A5513A supported.
 - HyperFabric: `/opt/clic/bin/clic_ping` utility not available in HP-UX 11i v2.
 - INTL100: Required for HP Integrity rx2600 server, as well as HP zx6000 workstation. A6792A add-on card not supported on HP-UX 11i v2.
 - Online Addition and Replacement (OLAR): New `olrad` command provides critical resource analysis routines. New `hotplugd` daemon provides Doorbells capability. The `rad` command deprecated.
 - PCI Mux Networking Solution, TermIO-00: Now available on Itanium®-based platforms.
 - PCI Token Ring Networking Solution: Now available on 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 `wacnf`.
- 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.x.x: Adds a security step to the install/update process that allows you to configure the Bastille security lockdown engine during system installation.
- Kerberos Client (KRB5-Client): Now delivered as part of HP-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 New at a Glance

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

What is in This Chapter?

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

- Hardware Enablement Patch Bundle (see page 78)
- HP Instant Support Enterprise Edition (see page 79)
- Networking and Mass Storage Drivers (see page 81)
 - Always-Installed Networking Drivers (see page 81)
 - GigEther-00 (Gigabit Ethernet) (see page 83)
 - Selectable Networking Drivers (see page 84)
 - 10GigEthr-00 (10 Gigabit Ethernet) (see page 84)
 - Always-Installed Mass Storage Drivers (see page 85)
 - FibrChanl-00 (Fibre Channel) (see page 87)
 - FibrChanl-01 (Fibre Channel) (see page 87)
 - RAID-01 (see page 88)
 - scsiU320-00 (see page 89)
 - USB-00 (Universal Serial Bus) (see page 90)
 - Selectable Mass Storage Drivers (see page 91)
 - SerialSCSI-00 (see page 91)
- Supported Systems (see page 91)
- Finding Firmware Information (see page 93)

Hardware Enablement Patch Bundle

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

In addition to delivery on the HP-UX 11i v2 OE media, the HWEEnable11i bundle is also available on the IT Resource Center (ITRC) Web site at <http://itrc.hp.com>.

For help in finding firmware requirements, see “Finding Firmware Information” on page 93.

Summary of Change

The HWEEnable11i bundle includes the following updates:

- The following new server is supported with the December 2005 release:
 - hp BladeSystems Itanium BL60p server
- The following I/O driver bundles have been added or updated:
 - 10GigEthr-00: The ixgbe driver updated to version B.11.23.06. With the installation of separately available patches, the driver supports port-based steering multiqueue and TCP packet-reassembly in the driver. (See “10GigEthr-00 (10 Gigabit Ethernet)” on page 84.)
 - FibrChanl-00: Updated to incorporate defect fixes. (See “FibrChanl-00 (Fibre Channel)” on page 87.)
 - FibrChanl-01: Updated to version B.11.23.04.01 with defect fixes and support for to-be-released AB378A and AB379A cards. (See “FibrChanl-01 (Fibre Channel)” on page 87.)
 - GigEther-00: Updated to incorporate defect fixes. (See “GigEther-00 (Gigabit Ethernet)” on page 83.)
 - RAID-01: Updated to incorporate defect fixes. (See “RAID-01” on page 88.)
 - scsiU320-00: Updated with quality and diagnostic improvements for Ultra320 SCSI solutions. (See “scsiU320-00” on page 89.)
 - SerialSCSI-00: Added to the HP-UX 11i v2 Operating Environments to support cards that will be released in the future. (See “SerialSCSI-00” on page 91.)

Impact

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

Compatibility

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

Performance

There are no known performance issues.

Documentation

For information about the HWEenable11i bundle, refer to the Hardware Enablement Bundle README file.

For further information, refer to the following Web sites:

- <http://itrc.hp.com>
- <http://software.hp.com>

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

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

Obsolescence

Not applicable.

HP Instant Support Enterprise Edition

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

Summary of Change

This new version of ISEE Client has defect fixes and feature enhancements. For details, refer to the ISEE Training and Documentation Web site at <http://www.hp.com/learn/isee>.

Impact

There are no impacts.

Compatibility

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

Enabling ISEE

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

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

Configuring ISEE

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

Performance

There are no known performance issues.

Documentation

Information about ISEE, including the *HP Instant Support Enterprise Edition Client Installation and Upgrade Guide*, is available at <http://www.hp.com/learn/isee>.

For a complete list of ISEE-supported operating systems and hardware devices, please view the ISEE supported products Web page at http://www.hp.com/hps/hardware/hw_products.html.

Obsolescence

Not applicable.

Networking and Mass Storage Drivers

HP-UX 11i v1 includes drivers for networking and mass storage adapter cards. The drivers are described in the following sections:

- Always-Installed Networking Drivers (see page 81)
- Selectable Networking Drivers (see page 84)
- Always-Installed Mass Storage Drivers (see page 85)

Always-Installed Networking Drivers

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

Table 4-1 Always-Installed Networking Drivers

Networking Driver Bundle	Driver	Card Number	Description
FDDI-00	fddi4	A3739A/B	PCI FDDI card
FibrChan1-01 and GigEther-01	fcd and igelan	A9782A	PCI-X 2Gb Fibre Channel/1000Base-SX (Fibre) Combination Card
FibrChan1-01 and GigEther-01	fcd and igelan	A9784A	PCI-X 2Gb Fibre Channel/1000Base-T (Copper) Combination Card
FibrChan1-01 and GigEther-01	fcd and igelan	AB465A	PCI-X Multifunction 2-Port 2Gb FC / 2-Port 1000Base-T Adapter
GigEther-00	gelan	A4924A, J1642AA	HSC 1000Base-SX (gigabit over fiber) card
GigEther-00	gelan	A4925A	HSC 1000Base-SX (gigabit over fiber) card
GigEther-00	gelan	A4926A	PCI 1000Base-SX (gigabit over fiber) card
GigEther-00	gelan	A4929A	PCI 1000Base-T (gigabit over copper) card
GigEther-01	igelan	A6825A	PCI 1000/Base-T (gigabit over copper) card
GigEther-01	igelan	A6847A	PCI 1000/Base-SX (gigabit over fiber) card
GigEther-01 and scsiU160-00	igelan and mpt	A7109A	PCI Gigabit Ethernet Base-T/Ultra 160 Combo Card
GigEther-01 and scsiU160-00	igelan and mpt	A6794A	PCI Gigabit Ethernet Base-T/Ultra 160 SCSI Combo Card
HPUXBase64, HPUXBase32	btlan	A3738A	PCI 10/100Base-TX card

Table 4-1 Always-Installed Networking Drivers (Continued)

Networking Driver Bundle	Driver	Card Number	Description
HPUXBase64, HPUXBase32	btlan	A5230A	PCI 10/100Base-TX card for servers
HPUXBase64, HPUXBase32	btlan	A5506A	PCI 4-port 10/100Base-TX card
HPUXBase64, HPUXBase32	btlan	A5506B	PCI 4-port 10/100Base-TX card
HPUXBase64, HPUXBase32	btlan	A5838A	PCI Combination Dual port 10/100Base-TX and Wide Ultra2 SCSI card
HPUXBase64, HPUXBase32	btlan	B5509BA	PCI 10/100Base-TX card for workstations
HPUXBase64, HPUXBase32	btlan	J3514A opt #001	HSC 10/100Base-TX 2-port for K-Class and T600 servers
HPUXBase64, HPUXBase32	btlan	J3514A opt #002	HSC 10/100Base-FX (fiber) 2-port for K-Class and T600 servers
HPUXBase64, HPUXBase32	btlan	J3515A	HSC 10/100Base-TX 1-port for C, J workstations and A, D, R-Class servers (except D200)
HPUXBase64, HPUXBase32	btlan	J3516A opt #001	HSC 10/100Base-TX 2-port for C, J workstations and A, D, R-Class servers (except D200)
HPUXBase64, HPUXBase32	btlan	J3516A opt #002	HSC 10/100Base-FX (fiber) 2-port for C, J workstations and A, D, R-class servers (except D200)
HPUXBase64, HPUXBase32	btlan	J3850A	HSC 10/100Base-TX card for T-Class server
IEther-00	iether	A7011A	PCI-X 2-Port 1000Base-SX (Fibre) card
IEther-00	iether	A7012A	PCI-X 2-Port 1000Base-T (Copper) card
IEther-00 and scsiU320-00	iether and mpt	AB290A	PCI-X 2-Port U320 SCSI / 2-Port 1000Base-T Adapter
IEther-00	iether	AB352A	Core 1000Base-T Dual-Port Card for the rx4640 server
IEther-00	iether	AB545A	PCI-X 4-Port 1000Base-T Adapter

NOTE

The `HWEEnable11i` 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 `HWEEnable11i` 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.

GigEther-00 (Gigabit Ethernet)

The `GigEther-00` bundle supplies the `gelan` driver, which supports the A4924A, A4925A, A4926A, and A4929A cards.

Summary of Change

The `GigEther-00` software bundle (for Gigabit Ethernet driver `gelan`) has been updated in December 2005 to incorporate defect fixes. For further information, refer to the *GigEther-00 (gelan) December 2005 Release Notes*, available under “I/O Cards and Networking Software” at <http://docs.hp.com/en/netcom.html>.

Impact

Details of defect fixes are not documented in the *HP-UX Release Notes*. For this and all future releases of Gigabit Ethernet drivers, please consult the individual product release notes for details on what fixes have been made to the Gigabit Ethernet drivers.

Compatibility

Please consult the individual product release notes for details.

Performance

Please consult the individual product release notes for details.

Documentation

For further information, refer to the *GigEther-00 (gelan) December 2005 Release Notes*, available at <http://docs.hp.com>. Click **I/O Cards and Networking Software**, then **1000Base-T and 1000Base-SX (Gigabit Ethernet)**.

Obsolescence

Not applicable.

Selectable Networking Drivers

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

Table 4-2 Selectable Networking Drivers^a

Networking Driver Bundle	Driver	Card Number	Description
10GigEthr-00	ixgbe	AB287A	PCI-X Gigabit Ethernet card
ATM-00	atm2pci atmpci	A5483A, A5513A, A5515A, J3557A	PCI ATM cards
HyprFabrc-00	clidc	A4919A A4920A A4921A A6092A, A6386A	PCI HyperFabric HSC HyperFabric HSC HyperFabric PCI HyperFabric
TermIO-00	pci_mux0	J3592A, A6748A J3593A, A6749A	PCI MUX (8-port) PCI MUX (64-port)
TokenRing-00	pcitr	A5783A, A4930A	PCI Token Ring card

a. In addition to currently supported cards, the `swlist` report may contain the product numbers of cards that have been “pre-enabled,” but have not been released yet.

10GigEthr-00 (10 Gigabit Ethernet)

The 10GigEthr-00 bundle supplies the `ixgbe` driver, version B.11.23.06 for December 2005. The 10GigEthr-00 bundle supports the AB287A PCI-X 10 Gigabit Ethernet card.

The 10 Gigabit Ethernet (`ixgbe`) driver is delivered as a selectable product in the December 2005 update of HP-UX 11i v2.

Summary of Change

In the December 2005 HP-UX 11i v2 Operating Environments, the 10 Gigabit Ethernet driver supports two new functionalities:

- Port-based steering multiqueue
- TCP packet-reassembly in the driver

IMPORTANT

To enable these functionalities, you must install additional patches after installing the driver from the December 2005 Operating Environments media. For instructions, see the *10GigEthr-00 (ixgbe) 10 Gigabit Ethernet Driver for HP-UX 11i v2 of December 2005 Release Notes*, available online at <http://docs.hp.com/en/netcom.html#10%20Gigabit%20Ethernet>

Impact

The multiqueue and TCP packet-reassembly in the driver enhancements can provide good-to-significant performance improvement.

Compatibility

As of the date of this document's publication, multiqueue using destination port based steering may not work optimally when used with Auto Port Aggregation (APA) in LAN Monitor mode.

Performance

As stated, the multiqueue and TCP packet-reassembly in the driver enhancements can improve performance.

Documentation

The *AB287A PCI-X 10 Gigabit Ethernet Card Installation Guide* and the *10GigEthr-00 (ixgbe) 10 Gigabit Ethernet Driver for HP-UX 11i v2 of December 2005 Release Notes* are available online at <http://docs.hp.com/en/netcom.html#10%20Gigabit%20Ethernet>.

For more information about 10 Gigabit Ethernet, such as a current list of supported systems and switches that work well with the AB287A PCI-X 10 Gigabit Ethernet card, visit the HP 9000 and HP Integrity Server Connectivity Web site at <http://www.hp.com/products1/unixserverconnectivity>.

Obsolescence

Not applicable.

Always-Installed Mass Storage Drivers

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

Table 4-3 Always-Installed Mass Storage Drivers

Mass Storage Driver Bundle	Driver	Card Number	Description
FibrChanl-00 ^a	td	A6685A	HSC Tachlite Fibre Channel Adapter
FibrChanl-00 ^a	td	A6795A	PCI Tachyon XL2 Adapter card
FibrChanl-01 ^a	fcd	A6826A	PCI-X Dual Port 2 Gb/1 Gb Fibre Channel Adapter
FibrChanl-01 ^a	fcd	AB378A	(to be released)
FibrChanl-01 ^a	fcd	AB379A	(to be released)
FibrChanl-01 ^a and GigEther-01	fcd and igelan	A9782A	PCI-X 2Gb Fibre Channel/1000Base-SX (Fiber) Combination Card
FibrChanl-01 ^a and GigEther-01	fcd and igelan	A9784A	PCI-X 2Gb Fibre Channel/1000Base-T (Copper) Combination Card
FibrChanl-01 ^a and GigEther-01	fcd and igelan	AB465A	PCI-X Multifunction 2-Port 2Gb FC / 2-Port 1000Base-T Adapter
RAID-01	ciss	A7143A	RAID160 SA SCSI Controller
RAID-01	ciss	A9890A	Smart Array 6402 Controller
RAID-01	ciss	A9891A	Smart Array 6404 Controller
scsiU160-00 and GigEther-01	mpt and igelan	A6794A	PCI Gigabit Ethernet Base-T/Ultra 160 SCSI Combo Card
scsiU320-00	mpt	A7173A	PCI-X 2-Channel Ultra320 SCSI Adapter

a. HP-UX Fibre Channel HBAs require that the Fibre Channel SAN maintains and guarantees in-order delivery of frames. This is typically achieved by setting the in-order delivery option to true in one of the Fibre Channel switch configuration parameters. All the switches in the SAN should have in-order delivery option to be true. Consult the appropriate Fibre Channel switch configuration guide for details.

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.

FibrChanl-00 (Fibre Channel)

The `FibrChanl-00` bundle delivers the `td` driver, which supports the A6795A PCI Tachyon XL2 Adapter card.

Summary of Change

This release includes driver fixes. Refer to the following support documentation for further details.

Impact

Customers with current HP-UX 11i v2 systems will already have the correct driver available. There is no impact to the customer.

Compatibility

There are no known compatibility issues.

Performance

There are no known performance issues.

Documentation

You can view the following documentation at <http://www.docs.hp.com> (click **I/O Cards and Networking Software**, then **Fibre Channel**):

- *FibrChanl-00 (td) Fibre Channel PCI Tachyon XL2 Driver for HP-UX 11i v2 Release Notes*
- *A6795A Fibre Channel Mass Storage Adapter Installation Guide*
- *HP Fibre Channel Mass Storage Adapters Support Guide*
- *Fibre Channel SNIA HBA API Programmer's Guide*
- *HP Fibre Channel Host Bus Adapter Support Matrix*

Obsolescence

Not applicable.

FibrChanl-01 (Fibre Channel)

The `FibrChanl-01` bundle delivers FC-FCD (`fcd` driver) version B.11.23.04.01 for the following hardware:

- A6826A PCI-X Dual Port 2 Gb/1 Gb Fibre Channel Adapter
- A9782A PCI-X 2Gb Fibre Channel/1000Base-SX (Fiber) Combination Card
- A9784A PCI-X 2Gb Fibre Channel/1000Base-T (Copper) Combination Card
- AB465A PCI-X Dual Port 2Gb FC / Dual Port 1000Base-T Multifunction Card
- AB378A (to be released)
- AB379A (to be released)

Summary

The Fibre Channel `fcd` driver has been updated to version B.11.23.04.01 with fixes for the A6826A, A9782A, A9784A, AB465A cards. This release also includes support for the to-be-released AB378A and AB379A cards.

Impact

You will now have the correct driver available for the AB378A and AB379A cards.

Compatibility

There are no known compatibility issues.

Performance

There are no known performance issues.

Documentation

For further information, refer to the following documents at <http://docs.hp.com> (click **I/O Cards and Networking Software**, then **Fibre Channel**):

- *HP Fibre Channel Mass Storage Adapters Support Guide*
- *A6826A Fibre Channel Mass Storage Adapter Installation Guide*
- *A9782A & A9784A PCI-X 2 Gigabit Fibre Channel and Gigabit Ethernet Combination Card Installation Guide*
- *AB465A PCI-X 2-Port 2 Gigabit Fibre Channel and 2-Port Gigabit Ethernet Combination Card Installation Guide*
- *AB378A Fibre Channel Mass Storage Adapter Installation Guide*
- *AB379A Fibre Channel Mass Storage Adapter Installation Guide*
- *HP FibrChanl-01 (fcd) Fibre Channel Mass Storage Driver for HP-UX 11i v1 Release Notes*
- *HP FibrChanl-01 (fcd) Fibre Channel Mass Storage Driver for HP-UX 11i v2 Release Notes*
- *HP Fibre Channel Host Bus Adapter Support Matrix*

Obsolescence

Not applicable.

RAID-01

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

Summary of Change

RAID-01 has been updated to incorporate defect fixes.

Impact

There are no impacts.

Compatibility

There are no known compatibility issues.

Performance

There are no known performance issues.

Documentation

Documentation is available at <http://www.docs.hp.com>. Click **I/O Cards and Networking Software**, then **Smart Array (RAID)**.

Obsolescence

Not applicable.

scsiU320-00

The `scsiU320-00` bundle delivers the driver `mpt`, for the A7173A card.

Summary of Change

The `scsiU320-00` bundle containing the `mpt` driver has been updated with quality and diagnostic improvements for Ultra320 SCSI solutions. For details, refer to the product documentation at <http://www.docs.hp.com>. (Click **I/O Cards and Networking Software**, then **SCSI Host Bus Adapters**.)

Impact

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

Compatibility

For compatibility information, see the A7173A HBA documentation, as well as pertinent supported server and storage docs.

Performance

There are no known performance issues.

Documentation

For further information, refer to the `mptconfig` and `mptutil` manpages, as well as the product-specific documentation available at <http://www.docs.hp.com>. (Click **I/O Cards and Networking Software**, then **SCSI Host Bus Adapters**.)

Obsolescence

Not applicable.

USB-00 (Universal Serial Bus)

The USB-00 product, version C.01.02.01, supports HP USB keyboards and mice. It enables DVD boot support for the HP BladeSystems Itanium BL60p server.

Summary of Change

Summary USB-00, version C.01.02.01, includes quality improvements from the initial release, C.01.00.00.

NOTE

The installation of this driver bundle requires the patch PHKL_33581: USB DVD Boot, EFI Device Path, HW Enablement. This patch is delivered in the FEATURE11i and HWEnable11i patch bundles and is automatically selected when updating an existing system with this mass-storage driver.

Impact

There is no customer impact.

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`. The device special files for USB-00 are located in `/dev/deviceFileSystem`. Mouse and keyboard device files are accessible through the device files `/dev/deviceFileSystem/mouseMux` and `/dev/deviceFileSystem/keyboardMux`, respectively. To revert to the previous USB driver, `swremove USB-00`.

Performance

There is no performance impact.

Documentation

For further information about USB-00, review the readme files for products in that bundle:

```
swlist -a readme USB-00 | more
```

Obsolescence

Not applicable.

Selectable Mass Storage Drivers

The following mass storage driver is selectable, which means you must select it to install it when updating to an Operating Environment.

SerialSCSI-00

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

Summary of Change

The SerialSCSI-00 driver bundle has been added to the HP-UX 11i v2 Operating Environments to support cards that will be released in the future.

NOTE

The installation of this driver bundle requires the patch `PHKL_33581: USB DVD Boot, EFI Device Path, HW Enablement`. This patch is delivered in the `FEATURE11i` and `HWEnable11i` patch bundles and is automatically selected when updating an existing system with this mass-storage driver.

Impact

There are no impacts.

Compatibility

There are no known compatibility issues.

Performance

There are no known performance issues.

Documentation

When the new cards are released, documentation will be available on <http://docs.hp.com> in the “I/O Cards and Networking Software” section.

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 is 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 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 rx4640 server
- HP Integrity rx5670 server
- HP Integrity rx7620/rx8620 servers
- HP Integrity Superdome server
- HP BladeSystems Itanium BL60p server

Finding Firmware Information

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

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

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

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

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

What is in This Chapter?

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

- Distributed Systems Administration Utilities (see page 97)
- Enterprise Cluster Master Toolkit Version (see page 100)
- Event Monitoring Services (see page 101)
- Feature Enablement Patch Bundle (Feature11i) (see page 102)
- GlancePlus Pak (see page 103)
- High Availability Monitors (see page 104)
- HP Integrity Virtual Machines Provider (see page 105)
- HP Integrity VM Support Library (see page 106)
- HP Partitioning (see page 107)
 - HP Global Workload Manager (see page 107)
 - HP-UX Workload Manager (see page 109)
 - nPartition Provider (see page 110)
 - Partition Manager (see page 111)
 - vPar Provider (see page 113)
- HP Serviceguard (see page 114)
- HP Serviceguard NFS Toolkit (see page 116)
- HP System Management Homepage (see page 117)
- HP Systems Insight Manager (see page 118)
- HP WBEM Services for HP-UX (see page 122)
- HP-UX Accounts for Users and Groups (see page 123)
- HP-UX Kernel Configuration (see page 124)
- HP-UX Peripheral Device Tool (see page 126)
- HP-UX WBEM Fibre Channel Provider (see page 127)
- HP-UX WBEM LAN Provider for Ethernet Interfaces (see page 128)
- HP-UX WBEM LVM Provider (see page 129)
- HP-UX WBEM SCSI Provider (see page 130)
- Ignite-UX (see page 131)
- Online Diagnostics (see page 133)
- Obsolescence Bundle (see page 132)
- Quality Pack Patch Bundle (see page 135)

What is in This Chapter?

- **Software Distributor** (see page 136)
- **Software Package Builder** (see page 137)
- **Update-UX** (see page 138)
- **Utilization Provider** (see page 139)

Distributed Systems Administration Utilities

Distributed Systems Administration Utilities (DSAU) is a new set of utilities for HP-UX 11i v2. DSAU provides the following capabilities:

- Configuration synchronization tools - provides policy-based configuration management for groups of systems and Serviceguard clusters.
- Consolidated logging tools - provides centralized logging and advanced log filtering features. Provides specific support for creating a highly available log consolidation server using HP Serviceguard.¹
- Command fanout tool - provides high performance tools for executed shell commands and distributing files across groups of systems and Serviceguard clusters.

Summary of Change

DSAU is new with the December 2005 release of HP-UX. It is available on all Operating Environments, except the Technical Computing Operating Environment.

The Distributed Systems Administration Utilities provide a variety of tools for simplifying the management of groups of systems and Serviceguard clusters.

There are three utilities:

- Configuration Synchronization - based on the open source tool `cfengine`, or “configuration engine,” the administrator can centrally define management actions to be applied to a set of managed systems. `cfengine` is a client/server based tool. The central “configuration master” system hosts the configuration description file which defines the management actions to be performed on each managed client. The configuration master also hosts the “golden image” files — master copies of files that are distributed to the clients. The administrator can use `cfengine` to perform tasks such as the following:
 - ensure that client systems are using a correct set of configuration files
 - disable inappropriately configured files on the client
 - check file permissions, ownership, and track checksum changes
 - perform edits to files
 - execute arbitrary shell commands on each client
 - check for processes, signal processes

A Configuration Synchronization Wizard is available to help the administrator quickly configure `cfengine` for managing a set of distributed systems or configuring it as a highly available service in a Serviceguard cluster. For more information see the `cfengine` (8) and `cscync_wizard` (1M) manpages.

- Consolidated Logging - standard UNIX `syslogd` offers UDP-based log forwarding to a central log consolidator today. The DSAU tools provide the open source tool “syslog next-generation” or `syslog-ng`. The `syslog-ng` tool offers additional features that make it a powerful tool for log forwarding and log centralization and consolidation.

1. See “HP Serviceguard” on page 114.

The Configuration Synchronization Wizard helps to configure `syslog-ng` on a log consolidation server and log forwarding clients. Centralized log consolidation offers the following benefits:

- easier log file analysis

A centralized log provides a single location for the administrator to perform log file analysis. It offers single view of events that impact multiple systems.

The DSAU tools are specifically designed to optimize this case for managing a Serviceguard cluster. The member's syslogs and package logs can be centralized for simpler log file access and analysis. They also allow the cluster to offer an highly available consolidated logging service.

- increased security

A security breach might compromise the local logs but not the centralized copy.

- simplified archiving of logs

It is usually simpler to archive a set of centralized logs versus per-system logs.

For additional information please refer to the *clog_wizard* (1M) and *syslog-ng* manpages.

- Command-fanout is based on the open source tool Parallel Distributed Shell (`pdsh`). `pdsh` allows the administrator to execute shell commands in parallel across a set of systems. It can use `remsh` or `ssh` as the network transports. The `csshsetup` tool is provided to simplify the distribution of `ssh` keys. The companion utility Parallel Distributed Copy (`pdcp`) allows file and directory copies to be performed in parallel to a set of remote system. The `dshbak` filter allows the output from multiple systems to be formatted and consolidated for better on-screen presentation.

The `cexec`, `ccp`, `ckill`, `cps`, and `cuptime` are wrappers around the `pdsh` and `pdcp` commands, optimized for use in a Serviceguard cluster. They default to performing commands cluster-wide.

<code>cexec</code>	like <code>pdsh</code> but with additional reporting and retry features
<code>ccp</code>	copy files cluster-wide
<code>ckill</code>	kill the named process cluster-wide or on the specified systems
<code>cps</code>	issue a <code>ps</code> command cluster-wide or on the specified systems
<code>cuptime</code>	run the <code>uptime</code> command cluster-wide

These commands can also be used outside a cluster but like `pdsh/pdcp`, a list of target hosts must be specified. The `cexec` command operates like `pdsh` and adds reporting capabilities. Saved reports can be used to reissue previous commands and target just systems where the command original failed, originally succeeded, or both.

For additional information, please refer to the individual manpages for each utility.

Impact

DSAU improves manageability of distributed systems and Serviceguard clusters.

Compatibility

The following are known compatibility issues when using the Distributed Systems Administration Utilities for the December 2005 release:

- Consolidated logging:

When using consolidated logging, patch PHCO_32985 should be applied. This is a cumulative patch for *syslogd* (1M) and it addresses critical log forwarding issues. This patch is available from the HP IT Resource Center (<http://itrc.hp.com>) patch database.

When consolidating package log files in a Serviceguard cluster, it's possible for the first message written to a new package log file to not get forwarded to the consolidated package log.

The first message written is typically the standard package start line:

```
##### Node "<name>": Starting package at <date> #####
```

Subsequent lines will be consolidated and cause the consolidated log to be created if it doesn't already exist.

- Configuration Synchronization:

When using the *csync_wizard* (1M) to redistribute security keys to all the managed clients, *cfservd* is not restarted properly on the remote clients and is still using the previous security keys. This causes *cfrun* operations from the master server to fail. *cfagent* on the managed client will work properly and if *cfagent* is being invoked from *cron*, *cfservd* will be restarted during the next scheduled synchronization run. Otherwise, one workaround would be to use “*cexec -n <managed clients> /sbin/init.d/cfservd restart*” to restart the client *cfservd* daemons.

The *csync_wizard* (1M) saves the user's responses to each question in an answer file that can be used when rerunning the wizard. In a Serviceguard environment, when setting *cfengine* as a highly available service, an incorrect value is written to the answer file. Change the “*master:* ” line in the */var/opt/dsau/cfengine/tmpdir/csync_wizard_input.txt* to read “*master: csync*”.

Performance

There are no known performance issues.

Documentation

For further information, consult the manpages for the following commands:

- *csshsetup*
- *csync_wizard*
- *clog_wizard*
- *clog*
- *cfagent*
- *cfenvd*
- *cfenvgraph*
- *cfexecd*
- *cfkey*
- *cfrun*

- cfservd
- cfshow
- pdsh
- pdcp
- dshbak
- cexec
- cps
- ckill
- cuptime
- ccp
- syslog-ng
- syslog-ng.conf

Obsolescence

Not applicable.

Enterprise Cluster Master Toolkit Version

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 released on HP-UX 11i v2.

Summary

ECMT has been updated to version B.03.00. Changes include the following:

- Support for Cluster File System (CFS) in a Serviceguard A.11.17 environment¹
- Fixes to the ECM Oracle Toolkit

Impact

There are no impacts other than those listed previously.

Compatibility

There are no known compatibility issues.

Performance

There are no known performance issues.

1. See “HP Serviceguard” on page 114.

Documentation

For further information, refer to the *Enterprise Cluster Master Toolkit Version B.03.00 Release Notes*, available at [http://docs/hp.com/hpux/ha](http://docs.hp.com/hpux/ha).

Obsolescence

Not applicable.

Event Monitoring Services

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

Summary of Change

EMS has been updated to incorporate defect fixes.

Impact

There are no impacts.

Compatibility

There are no known compatibility issues.

Performance

There are no known performance issues.

Documentation

For further information, refer to the following:

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

Obsolescence

EMS will be deprecated post HP-UX 11i v3 release. It will be replaced by WBEM indication providers (replacing EMS Monitors) and WBEM-based event viewers and event management interfaces (replacing the EMS GUD). Support for EMS on HP-UX 11i v1 and HP-UX 11i v2 will continue.

Feature Enablement Patch Bundle (Feature11i)

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

Summary of Change

For the December 2005 release, the FEATURE11i bundle consists of new patches required for vPars, VERITAS products, USB DVD Boot, and Serial SCSI functionality.

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 issues.

Documentation

For further information, see the following:

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

Obsolescence

Not applicable.

GlancePlus Pak

GlancePlus Pak, version C.04.50, integrates the GlancePlus and HP OpenView Performance Agent for HP-UX (OVPA) products into a single tool to help you better manage the performance and availability of your servers.

Summary of Change

GlancePlus Pak version C.04.50 includes the following enhancements:

- For both OVPA and GlancePlus:
 - Dependency of `ttdd` to have `rpcbind` or `portmap` running has been eliminated and `ttdd` has been modified to function independently of `rpcbind` or `portmap`.
- For OVPA:
 - This release of OVPA supports both HTTP and HTTPS-based single port communication. Using HTTPS enables secure communication. OVPA continues to support existing DCE-based communication. You can configure OVPA to use either DCE-based or HTTP(S)-based data communication.

For more details refer to Chapter 2 of the *HP OpenView Performance Agent Installation and Configuration Guide for HP-UX Systems*, provided as `ovpainst.pdf` in `/opt/perf/paperdocs/ovpa/C/`.
 - HTTPS-based secure communication is supported only in the OpenView Operations (OVO) 8.x environment.
 - HTTP(S) data communication is supported using CODA, a daemon that handles data communication (both HTTP and HTTPS) when delivered as part of OVPA. It also handles communication with `perfalarm`, the alarm management daemon. CODA, when delivered as part of OV Operations Agent, provides lightweight system performance collection and Smart Plug-Ins (SPI) support.

OVPA shares the “Black Box Communication” functionality with OV Operations, including the `ovbbccb` daemon that is started with and used by CODA. Switching to this newer data communication facility makes communication easier across firewalls (see the *HP OpenView Performance Agent Installation and Configuration Guide for HP-UX Systems* for details).
 - Applications that consume performance data from OVPA now have the option of communicating with OVPA using `https` datacomm. OpenView Performance Manager (OVPM) 5.0 already has the ability to communicate with OVPA using HTTPS. OpenView Reporter (OVR) 3.6 and OpenView Performance Insight (OVPI) 5.1 can only communicate using HTTP datacomm.
 - The DCE-based alarm management daemon, `alarmgen`, has been replaced by the HTTP-based `perfalarm`, which is the preferred daemon to send alarms to OVO servers. The `alarmgen` daemon is still supported for sending alarms to OVPM 3.x (Perfview).

Refer to the *HP OpenView Performance Agent Installation and Configuration Guide for HP-UX Systems* for details on how to set up `alarmgen` as default alarm management deamon.
 - This release also includes the following new metrics:

- *GBL_SWAP_SPACE_AVAIL*
- *GBL_STATTIME*
- *GBL_MEM_PAGEIN_RATE*
- The scaling for the following metrics has been changed from KB to MB:
 - *GBL_MEM_AVAIL*
 - *GBL_MEM_PHYS*

Impact

There are no impacts other than those listed previously.

Compatibility

There are no known compatibility issues.

Performance

There are no known performance issues.

Documentation

For further information, refer to the release notes of each product (GlancePlus and OpenView Performance Agent) in `/opt/perf/ReleaseNotes/` or at the Web site http://ovweb.external.hp.com/lpe/doc_serv/.

Obsolescence

Not applicable.

High Availability Monitors

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

Summary of Change

HA Monitors has been updated to support the update of Event Monitoring Service (EMS).

Impact

There are no impacts other than that listed previously.

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 on the Web at

<http://docs.hp.com/en/ha.html#Event%20Monitoring%20Service%20and%20HA%20Monitors>:

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

Obsolescence

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

HP Integrity Virtual Machines Provider

The HP Integrity Virtual Machines Provider (VM Provider), version A.01.00, 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)¹ to display information about HP systems that support HP Integrity Virtual Machines. In the near future, it will also be 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

VM Provider is new with the HP-UX 11i v2 December 2005 release.

Impact

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

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

Compatibility

There are no known compatibility issues.

Performance

There are no known performance issues.

Documentation

Complete information is in the VM Provider product data sheet, installed as
`/opt/hpvmprovider/mof/HPVMProviderDataSheet.html`.

Obsolescence

Not applicable.

HP Integrity VM Support Library

HP Integrity VM Support Library is a subset of the HP Integrity Virtual Machines API Library used by HP Integrity Virtual Machines Provider.¹

Summary of Change

HP Integrity VM Support Library is new with the HP-UX 11i v2 December 2005 release.

Impact

This product allows HP Systems Insight Manager (SIM)² to display information about HP systems that support HP Integrity Virtual Machines.

Compatibility

There are no known compatibility issues.

Performance

There are no known performance issues.

Documentation

There is no additional information.

1. See “HP Integrity Virtual Machines Provider” on page 105.
2. See “HP Systems Insight Manager” on page 118.

Obsolescence

Not applicable.

HP Partitioning

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

- HP Global Workload Manager (see page 107)
- HP-UX Workload Manager (see page 109)
- nPartition Provider (see page 110)
- Partition Manager (see page 111)
- vPar Provider (see page 113)

HP Global Workload Manager

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

gWLM A.01.01.x has three components:

- Central Management Server, or CMS (T2412AA)

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 (HP SIM)¹ installed.

Until December 2005, CMS was delivered on the AR media. Now it can only be obtained from the HP Software Depot (see following “Summary” note).

- 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), virtual partition (vpar), processor set (pset), or fss group. gWLM manages your workloads by controlling the resource allocations to the npars, vpars, psets, or fss groups.

The gWLM agent software is delivered on the OE media as a default-installed product.

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

- License to Use, or LTU (T2762AA)

You can obtain the gWLM CMS and the gWLM agent free of charge. The A.01.01.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. See your HP Representative for information on how to purchase this license and download it from the Application Software media (AR).

Summary

The gWLM A.01.01.x CMS (T2412AA) is no longer part of the AR media.

This version of the CMS was removed because it requires HP SIM C.04.02, which was replaced with a newer version. The CMS does not work with this newer version of HP SIM.

You can still obtain the gWLM A.01.01.x CMS and HP SIM C.04.02 from <http://www.hp.com/go/softwaredepot>.

Impact

The benefits of gWLM include the following:

- Better use of the server capacity you already have

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

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

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

- Reduced system administration costs

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

Compatibility

There are no known compatibility issues.

Performance

There are no known performance issues.

Documentation

For further information, refer to the following:

- Manpages:

- /opt/gwlm/man/man1m.Z/gwlm.1m
 - /opt/gwlm/man/man1m.Z/gwlmcmds.1m
 - /opt/gwlm/man/man1m.Z/gwlminitconfig.1m
 - /opt/gwlm/man/man1m.Z/gwlmplace.1m
 - /opt/gwlm/man/man1m.Z/gwlmreport.1m
 - /opt/gwlm/man/man1m.Z/gwlmsend.1m
 - /opt/gwlm/man/man1m.Z/gwlmsslconfig.1m
 - /opt/gwlm/man/man4.Z/gwlmxml.4
 - /opt/gwlm/man/man5.Z/gwlm.5
- Web site:
<http://www.hp.com/go/gwlm>
 - Documents:
The following documents are available at
<http://docs.hp.com/en/netsys.html#HP%20Global%20Workload%20Manager>:
 - *Getting Started with gWLM*
 - *gWLM: Reference and Additional Topics*
 - *HP gWLM Version A.01.01.x Release and Installation Notes for HP-UX 11i v1, HP-UX 11i v2, and Linux*

Obsolescence

Not applicable.

HP-UX Workload Manager

HP-UX Workload Manager (WLM) A.03.00.01 provides goal-based workload management. This management enables automatic resource allocation and application performance management through the use of prioritized service-level objectives (SLOs). It provides this functionality by automating features of HP-UX Virtual Partitions, nPartitions, Processor Sets, and HP Process Resource Manager (PRM).

Summary of Change

WLM has been updated to version A.03.00.01 with the following changes:

- A change to prevent warnings during installation. These warnings concern SSL certificates and the `wlmcert` utility, introduced with WLM A.03.00.
- Support for cross-partition management when the partitions within the complex are of different architectures (HP 9000 and HP Integrity).

Impact

WLM A.03.00.01 provides the following:

- Cleaner installations
- Ability to manage a complex with mixed architectures (HP 9000 and HP Integrity)

Compatibility

There are no known compatibility issues.

Performance

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

Documentation

For further information, refer to the following:

- Manpages:
 - The *wlm* (5) manpage provides a list of all the WLM manpages in its SEE ALSO section.
- Web site:
 - <http://www.hp.com/go/wlm> (the “Information Library” provides white papers)
- Documents (available at <http://docs.hp.com/hpux/netsys/index.html#HP-UX%20Workload%20Manager>):
 - *HP-UX Workload Manager User's Guide*
 - *HP-UX Workload Manager A.03.00.01 Release Notes for HP-UX 11i v1 and HP-UX 11i v2*

Obsolescence

Not applicable.

nPartition Provider

The nPartition Provider, version B.23.01.05.01, is the HP-UX WBEM Services provider for nPartition-related information on partitionable systems. This product is used by Partition Manager and the partition commands to configure and manage HP systems that support nPartitions. With this component, partitionable systems can be managed both locally and remotely. The nPartition Provider is only used through a WBEM interface. It is not invoked directly by the user.

Summary of Change

This release of the nPartition Provider adds support for new cell-based HP servers.

The following features have been added (for details refer to the nPartition Provider data sheet):

- **GSMSharing** and **GSMSharingType** properties have been added to the **HP_NParComplex** class for configuring Global Shared memory (GSM) on servers that support GSM.
- **GSMsupportCapable** property was added to the **HP_NParCell** class.
- **MultithreadingEnabled** property was added to the **HP_NParPartition** class and the **MultithreadCapable** property was added to the **HP_NParCell** class.

- Status information was added for components in the complex.
- The bundle tag for nPartition Provider has changed from NPar to nParProvider.

Impact

There are no impacts other than those listed previously.

Compatibility

To update to this release of the nPartition Provider, HP recommends installing from the latest HP-UX Operating Environment Update Release (OEUR) or Application Release (AR) distribution.

Performance

There are no known performance issues.

Documentation

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

Obsolescence

Not applicable.

Partition Manager

Partition Manager v2.0, version B.23.02.01.02, provides system administrators with a convenient graphical user interface for configuration and management of nPartitions on HP server systems. In addition, Partition Manager enhances the reliability and performance of HP partitioning products by providing automatic detection of several types of configuration problems.

Summary of Change

This release of Partition Manager adds support for new cell-based HP servers.

When managing servers that support Global Shared Memory (GSM), Partition Manager can enable and disable the use of GSM. When GSM is enabled, memory can be shared between different nPartitions in the same complex. Only GSM-enabled applications running under Microsoft Windows Server 2003 are able to use GSM features.

Partition Manager under Systems Management Homepage (SMH)¹ has improved integration with the HP-UX Peripheral Device Tool Web interface (pdweb)² for managing I/O slots and cards.

Under both HP Systems Insight Manager (SIM)³ and SMH, the links to nPartition tools have been renamed but provide access to the same features of Partition Manager.

1. See “HP System Management Homepage” on page 117.
2. See “HP-UX Peripheral Device Tool” on page 126.
3. See “HP Systems Insight Manager” on page 118.

Under HP SIM, the location where Partition Manager is launched has changed to **Configure**—>**Partition Management**.

Additional bug fixes have also been incorporated in this release.

Errata

The Japanese version of the *parmgr* (1M) manpage included with this release omits the following information:

- The *parmgr* command no longer supports the *-s* option.
- The *parmgr* command now allows root users to bypass the authentication step under HP System Management Homepage by using the *-b* option.
- The procedures for managing SSL certificates have changed. Refer to the **Managing SSL certificates** help topic for details.

Impact

There are no impacts other than those described previously.

Compatibility

- HP Systems Insight Manager (SIM) 5.x works only with the following releases of Partition Manager or later:
 - HP-UX 11i v2 (B.11.23) May 2005 release: Partition Manager version B.11.23.02.00.04
 - HP-UX 11i v1 (B.11.11) September 2005 release: Partition Manager version B.11.11.02.00.05

You must upgrade to one of these versions of Partition Manager, or later, to use Partition Manager with SIM 5.x.

- The following are known compatibility issues related to using the Partition Manager interface to the HP-UX Peripheral Device Tool (*pdweb*) for the December 2005 release.
 - There is no SMH banner when *pdweb* is called from Partition Manager, so to log out of *pdweb* you must close the browser window. Click the **X** button on the browser window to close it, or if available, click the **Done** button to close the window.
 - There is a limitation to accessing *pdweb* when managing an nPartition running the HP-UX 11i v2 December 2005 release and using a release of Partition Manager prior to December 2005.

The pre-December 2005 Partition Manager attempts to access *pdweb* using ports 1110/1188 and is not aware of SMH port 2301. As a result, Partition Manager displays a message indicating to manually start *pdweb*.

Because *pdweb* uses port 2301/2381, the pre-December 2005 Partition Manager will not access it, so manually starting *pdweb* does not resolve the issue.

To resolve this issue, upgrade to the Partition Manager December 2005 release.

- There is a limitation when using the Partition Manager December 2005 release to manage an nPartition that is running either the HP-UX 11i v2 May 2005 release or the HP-UX 11i v2 September 2004 release and is not running *pdweb*.

Partition Manager first attempts to access `pdweb` using ports 1110/1188 and if it is not running it then attempts ports 2301/2381. In most cases SMH is listening on port 2301 and so Partition Manager forwards the request to SMH, but the May 2005 and September 2004 releases of SMH are not integrated with `pdweb` and instead generate a “page not found” error.

To resolve this issue, upgrade to the HP-UX 11i v2 December 2005 release.

Performance

There are no known performance issues.

Documentation

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

The `parmgr` command is documented in the *parmgr* (1M) manpage that is included with the product. Both English and Japanese versions of the manpage are included.

Additional information about Partition Manager, including links to download all currently available versions, can be found at <http://docs.hp.com/en/PARMGR2/>

Obsolescence

Not applicable.

vPar Provider

The HP-UX vPar Provider is a HP WBEM Services for HP-UX¹ 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

The vPar Provider is new to the HP-UX 11i v2 Operating Environments with the December 2005 release. It has the following features:

1. See “HP WBEM Services for HP-UX” on page 122.

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

Impact

You can use WBEM-based clients to access the HP-UX vPar Provider and collect information virtual partitions.

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 (product number T1905BA-A.11.17) is a high availability software product for protecting mission critical applications from a wide variety of hardware and software failures. Serviceguard is included in the HP-UX 11i v2 Mission Critical Operating Environment (MCOE). It is also included as part of the HP Serviceguard Storage Management Suite bundles.¹

The Serviceguard product includes the component product Cluster Object Manager (COM; product number B8324BA). The COM is the part of Serviceguard that communicates with its graphical user interface, Serviceguard Manager. The COM provides the ability to query cluster status and convey commands and information to and from Serviceguard Manager.

The following products are delivered free with Serviceguard, on Serviceguard's Distributed Components CD:

- Serviceguard Manager, the graphical user interface for Serviceguard, and the *Serviceguard Manager Version A.05.00 Release Notes*. The Serviceguard Manager software can also be downloaded directly from <http://hp.com/go/softwaredepot>.

1. For more information about HP Serviceguard Storage Management Suite, go to <http://docs.hp.com> -> High Availability -> Serviceguard Storage Management Suite.

- Quorum Server and the *Quorum Server Version A.02.00 Release Notes*

Summary of Change

HP Serviceguard has been updated to version A.11.17. New features include the following:

- Serviceguard A.11.17 has been tested with HP-UX 11i Security Containment, which is available on the Web at <http://hp.com/go/softwaredepot>. Serviceguard now incorporates enhanced security that was initially released as a patch to address security bulletin HPSBUX01080.
- Serviceguard now uses the `identd` daemon to enhance security. For more details, see the white paper “Securing Serviceguard”, October 2004, posted at <http://docs.hp.com> -> High availability -> Serviceguard -> White Papers.

NOTE

HP does not recommend disabling the Serviceguard security features in Serviceguard A.11.16. These features provide and maintain the integrity and high availability for your data. However, if you do need to disable the features, see the *Serviceguard A.11.17 Release Notes*.

- HP Fabric Clustering System for InfiniBand¹ is supported with Serviceguard to be used as cluster heartbeat and data networks using IPoIB.
- A new option for the `cmviewcl` command (`-f` line) creates output that is formatted to be used by scripts. The easily parsed output from the command is a concise summary of cluster objects and their status.
- Support for Distributed Systems Administration Utilities (DSAU)² features including:
 - configuration synchronization tools
 - consolidated logging tools
 - command fan-out tool
- The memory allocation for packages has changed. When you create the cluster, Serviceguard now reserves enough memory for the maximum number of packages supported. Previously, it allocated memory based on the value of `MAX_CONFIGURED_PACKAGES` that was specified in the configuration file. In addition, the default for the `MAX_CONFIGURED_PACKAGES` parameter has changed. The default is now 150, the maximum that Serviceguard supports. Previously the default was 0, so users had to set it before any packages could be configured.

Impact

- Operating System:

1. For more information about HP Fabric Clustering System for InfiniBand, go to the product Web site at <http://h20293.www2.hp.com/portal/swdepot/displayProductInfo.do?productNumber=IB>.
2. See “Distributed Systems Administration Utilities” on page 97.

- Serviceguard A.11.17 has been tested with HP-UX 11iv2 September 2004 and later.
- Security:
 - Serviceguard A.11.17 has been tested with HP-UX 11i Security Containment.
 - Serviceguard now incorporates the enhanced security that was initially released as a patch to address Security Bulletin HPSBUX010980.
 - Serviceguard now uses the `identd` daemon to enhance security.

Compatibility

Serviceguard 11.17 does not yet support VERITAS Cluster Volume Manager (CVM) 4.1.

Performance

Serviceguard's new features do not impact product performance.

Documentation

The following documents are posted at <http://docs.hp.com> -> High Availability:

- *Managing Serviceguard User's Guide*
- *Serviceguard A.11.17 Release Notes*
- *Serviceguard Manager A.05.00 Release Notes*
- *Quorum Server Release Notes*

Obsolescence

Not applicable.

HP Serviceguard NFS Toolkit

HP Serviceguard Network File System (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.11.23.04 includes fixes for two defects.

Impact

For information about the defect fixes, consult the *Serviceguard NFS Toolkit A.11.11.05 and A.11.23.04 Release Notes*, available at <http://docs.hp.com/hpux/ha/index.html#Highly%20Available%20NFS>.

Documentation

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

- *Serviceguard NFS Toolkit A.11.11.04 and A.11.23.03 Administrator's Guide*
- *Serviceguard NFS Toolkit A.11.11.05 and A.11.23.04 Release Notes*

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 version 2.2.1 introduces the support of the following:

- Integration of SAM Web-based applications such as kcweb, pdweb, fsweb, secweb, and ugweb
- Legacy SAM X Launch, allowing customers to easily add additional menus for commands, X-based and Web-based applications
- WBEM-based property pages for OS and software information

Impact

There is no significant change, with the exception of the new features listed above.

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 are included with product. The following documents are available at

<http://docs.hp.com/en/oshpux11iv2.html#System%20Administration>:

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

Obsolescence

Not applicable.

HP Systems Insight Manager

HP Systems Insight Manager (HP SIM) is the foundation for HP's unified infrastructure management strategy. It provides hardware level management for HP ProLiant, Integrity, and HP 9000 servers; HP BladeSystems; and HP StorageWorks MSA, EVA, and XP storage arrays. HP SIM also provides management of non-HP gear through industry standards.

HP SIM alone is an effective unified infrastructure management tool. When used in conjunction with Essentials plug-ins, it becomes a comprehensive, easy-to-use platform that enables organizations to holistically control their Windows, HP-UX, and Linux environments.

Summary of Change

HP SIM has been updated to version 5.0 with the following enhancements:

- The graphical user interface (GUI) has been modified so it has the look and feel of other HP products.
- HP SIM no longer requires JRE to be installed on the client systems.
- HP SIM can now discover storage systems through their installed SMI-S providers. (Refer to <http://www.hp.com/go/hpsim/providers> for information about the supported devices and SMI-S providers.)
- Cluster Monitor monitors MSCS clusters only.
- Reports are now available in XML format.
- New report engine is available along with new default reports.
- You can now view a consolidated list of all server and storage events from a single event viewer, and configure and take automated actions.
- You can view storage array capacity details, including unallocated space, RAID overhead, usable bytes assigned to ports, and usable bytes not assigned to ports.

- HIM SIM now has flexible role-based security that enables you to decide which administrators can have access to server and storage details.
- HP SIM now enables you to launch server and storage element managers from a single system viewer.
- Lists and folders are now called collections.
- You now have the ability to assign privileges to operating system user groups to give these users access to HP SIM without creating each individual user.
- Improved access to discovery options includes a Discovery page with tabs for Automatic, Manual, and Hosts Files configuration.
- New command line interface (CLI) commands include `mxreport`, `mxcert`, `mxglobalprotocolsettings`, `mxglobalsettings`, `mxcollections`, and `mxgethostname`.
- You now have the ability to set system properties for multiple systems at the same time.
- You now have the ability to suspend or resume monitoring of multiple systems at the same time.
- A new tree view is available for system and cluster collections.
- You now have the ability to create, edit, and delete discovery tasks.
- You now have the ability to create new command line tools including copying a file, removing a tool, and creating command line, Web launch, and X window tools on HP-UX and Linux systems.
- HP SIM now supports the use of an Oracle database (locally or remotely) for Windows, HP-UX, and Linux.
- HP SIM has added support for managed system configuration to include Linux, HP-UX, and Windows operating systems.
- First Time Wizard provides you with step-by-step, online guidance for performing the initial configuration of HP SIM, and helps you configure HP SIM settings on the central management server (CMS).
- HP SIM supports upgrading from version 4.x to version 5.0.
- The HP Services analysis tools, Web-Based Enterprise Services (WEBES) and Open Service Event Manager (OSEM), generate service notifications to HP SIM through a specific SNMP trap type if analysis has determined there are serviceable events. If Instant Support Enterprise Edition (ISEE) is installed, the service notification provided by WEBES and OSEM also provides status about the remote support incident.
- The bundle tag for HP SIM has changed from T2414BA to HPSIM-HP-UX.

Impact

There are no impacts other than those listed previously.

Compatibility

- Releases of Partition Manager¹ prior to HP-UX 11i v2 May 2005 and HP-UX 11i v1 September 2005 do not work with HP SIM 5.x. You must upgrade to one of these two versions of Partition Manager.
- HP SIM version 5.0 supports the following operating systems:
 - Central management server
 - HP-UX 11i v1
 - HP-UX 11i v2 (September 2004 or later)
 - Red Hat Enterprise Linux 2.1 Advanced Server, Update 4
 - Red Hat Enterprise Linux 2.1 Enterprise Server, Update 4
 - Red Hat Enterprise Linux 3 Advanced Server, Update 3
 - Red Hat Enterprise Linux 3 Enterprise Server, Update 3
 - SuSE Linux Enterprise Server 8.0, Service Pack 3
 - SuSE Linux Enterprise Server 9.0
 - Microsoft Windows 2000 Server, Service Pack 4
 - Microsoft Windows 2000 Advanced Server, Service Pack 4
 - Microsoft Windows 2000 and 2003 International Server—French, German, Italian, Japanese and Spanish

NOTE

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

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

NOTE

Japanese fully localized.

-
- Managed nodes
 - HP-UX 11.0
 - HP-UX 11i v1 (B.11.11)
 - HP-UX 11i v2 (B.11.23)

1. See also “Partition Manager” on page 111.

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

Performance

There are no known performance issues.

Documentation

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

- *HP Systems Insight Manager User and Installation Guide*

This document provides information about installing and getting started using HP SIM and includes an introduction to basic concepts, definitions, and functionality. 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 SIM. 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 HP 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 has been updated to version A.02.00.08 to incorporate defect fixes.

Impact

There is no significant impacts.

Compatibility

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

Performance

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

Documentation

For further information, refer to the following:

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

Obsolescence

Not applicable.

HP-UX Accounts for Users and Groups

The HP-UX Accounts for Users and Groups tool (`ugweb`) allows the user to manage local user accounts, NIS user accounts and group accounts. Users can manage the users and group accounts on HP-UX from the Web-based user interface (`ugweb`).

Use the HP-UX Accounts for Users and Groups tool for

- Managing local user accounts
- Managing NIS user accounts
- Managing group accounts
- Managing user templates and task customization
- Viewing and modifying security attributes of local users and NIS users, as the tool is tightly integrated with the HP-UX Security Attributes Configuration tool (`secweb`).¹

The HP-UX Accounts for Users and Groups tool (`ugweb`) can be launched from SAM, from the HP System Management Homepage (HP SMH),² or from the HP Systems Insight Manager (HP SIM).³

1. See “HP-UX Security Attributes Configuration” on page 169.
2. See “HP System Management Homepage” on page 117.
3. See “HP Systems Insight Manager” on page 118.

Summary of Change

- The HP-UX Accounts for Users and Groups tool (`ugweb`) is newly introduced in this release.
- In this release, the HP-UX Accounts for Users and Groups tool is a plug-in for the HP System Management Homepage (HP SMH). On launching the new Web-based User and Group Account configuration tool from SAM, the HP-UX Accounts for Users and Groups tool is displayed from the HP System Management Homepage on the Web browser.
- The `ugweb` tool does not support trusted mode and NIS+ in this release. On launching the tool from the HP SMH, the Tools page will not display “Accounts for Users and Groups” if the system is in trusted or NIS+ configuration.
- The `ugweb` tool supports shadow mode.
- The `ugweb` tool supports NIS configuration.

Impact

You will be able to manage HP-UX user and group accounts from SAM, from the HP System Management Homepage, or from the HP Systems Insight Manager (HP SIM) in a new look-and-feel Web-based GUI.

Compatibility

There are no compatibility issues.

Performance

There are no performance issues.

Documentation

Refer to the product online help for more information.

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. You can configure the kernel from the Web-based user interface (`kcweb`), from the terminal user interface, or from the command-line interface.

Use the HP-UX Kernel Configuration tool 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.¹

Summary of Change

- In this release, the HP-UX Kernel Configuration tool is a plug-in for the HP System Management Homepage. On launching the Web-based kernel configuration tool from SAM, the HP-UX Kernel Configuration tool with new look and feel is displayed from the HP System Management Homepage on the Web browser.
- The terminal user interface (TUI) of the kernel configuration functional area has been changed from the earlier version of ObAM-based TUI.

Impact

You will be able to configure the kernel from SAM with a new look-and-feel GUI and TUI. This TUI is different from the earlier version of ObAM- based 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)
- *kclog* (1M)
- *kcpath* (1M)
- *kcusage* (1M)

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

- *kcweb* (1M)
- *system* (4)

Also refer to the product online help for more information.

Obsolescence

Not applicable.

HP-UX Peripheral Device Tool

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

The Peripheral Device tool allows you to

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

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

Summary of Change

HP-UX Peripheral Device Tool has been updated to version B11.23.05. The *wacnf*(1M) command and the *WEB-ADM* fileset now obsolete. The functionality provided by this command and fileset has been replaced by the HP System Management Homepage.¹ The HP-UX Peripheral Device Tool has been integrated into the HP System Management Homepage product.

Impact

The ability to use the *autostart* feature through the *wacnf* command in this or future releases is not supported.

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

Compatibility

There are known compatibility issues related to using the Partition Manager interface to the HP-UX Peripheral Device Tool (`pdweb`). See “Partition Manager” on page 111.

Performance

There are no known performance issues.

Documentation

The `wacnf` (1M) manpage has been removed. The `pdweb` online help has been updated accordingly.

Obsolescence

The `wacnf` (1M) command and the `WEB-ADM` fileset now obsolete.

HP-UX WBEM Fibre Channel Provider

HP-UX WBEM Fibre Channel Provider is the HP WBEM Services for HP-UX¹ provider for Fibre Channel HBAs and ports on the system. Client applications use this component to determine information about HBAs, such as port properties, HBA parameters and others.

The Fibre Channel 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

Starting with the December 2005 release, HP-UX WBEM Fibre Channel Provider version 11.23.0512.02 is available on HP-UX 11i v2.

Impact

You can use WBEM-based clients, such as HP Systems Insight Manager,² to access information about Fibre Channel HBAs and ports on your system.

Compatibility

There are no known compatibility issues.

1. See “HP WBEM Services for HP-UX” on page 122.
2. See “HP Systems Insight Manager” on page 118.

Performance

There are no known performance issues.

Documentation

Complete information is in the Fibre Channel provider product data sheet, installed at `/opt/fcprovider/doc/FCDataSheet.pdf`

Obsolescence

Not applicable.

HP-UX WBEM LAN Provider for Ethernet Interfaces

HP-UX WBEM LAN Provider for Ethernet Interfaces (WBEMP-LAN-00) is a Common Information Model (CIM) Provider for Ethernet-based LAN technologies on the HP-UX 11i v2 operating system. Client applications can use the LAN Provider to determine Ethernet LAN links available on the system and collect information about them.

The LAN Provider uses CIM Schema v2.7 and supports the following classes:

- *HPUX_EthernetPort* subclassed from *CIM_EthernetPort*
- *HPUX_EthernetLANEndpoint* subclassed from *CIM_LANEndpoint*
- *HPUX_EthernetPortImplementsLANEndpoint* subclassed from *CIM_PortImplementsEndpoint*

Summary of Change

This release supports the following new features and functionality:

- 10GigE speed support
- New property support for the following:
 - *CIM_LogicalPort.MaxSpeed*
 - *CIM_NetworkPort.FullDuplex*
 - *CIM_NetworkPort.SupportedMaximumTransmissionUnit*
 - *CIM_NetworkPort.ActiveMaximumTransmissionUnit*

Impact

You can use WBEM-based clients, such as HP Systems Insight Manager,¹ to access the LAN Provider and collect information about the Ethernet links on your system.

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

Compatibility

There are no known compatibility issues.

Performance

There are no known performance issues.

Documentation

For more information, see the following document installed on your system:
`/opt/lanprovider/doc/HPUX_LANProvider.pdf`

Obsolescence

Not applicable.

HP-UX WBEM LVM Provider

The HP-UX WBEM LVM Provider is used by client applications to determine information about the Logical Volume Manager (LVM) subsystem on HP-UX via HP WBEM Services for HP-UX.¹ This component makes available various attributes related to Volume Groups, Physical Volumes, Logical Volumes, and Physical Volume Groups of the LVM subsystem.

The LVM 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

Starting with the December 2005 release, HP-UX WBEM LVM Provider version 11.23.002 is included in HP-UX 11i v2. It is also available at Software Depot at <http://hp.com/go/softwaredepot>.

Impact

You can use WBEM-based clients, such as HP Systems Insight Manager,² to access information about the LVM subsystem.

Compatibility

There are no known compatibility issues.

1. See “HP WBEM Services for HP-UX” on page 122.
2. See “HP Systems Insight Manager” on page 118.

Performance

There are no known performance issues.

Documentation

Complete information is in the LVM Provider product data sheet, installed at `/opt/lvmprovider/doc/LVMProviderDatasheet.pdf`

Obsolescence

Not applicable.

HP-UX WBEM SCSI Provider

HP-UX WBEM SCSI Provider (`SCSIProvider`) is used by client applications to determine information about SCSI HBAs present on the system. With this component, you can retrieve details about the various attributes of HBAs, such as the maximum number of targets controlled, maximum bus width, and so on.

The SCSI 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

Starting with the December 2005 release, HP-UX WBEM SCSI Provider version 11.23.001 is included in HP-UX 11i v2.

Impact

You can use WBEM-based clients, such as HP Systems Insight Manager,¹ to retrieve details about the various attributes of HBAs.

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, installed at `/opt/scsiprovider/doc/SCSIDataSheet.pdf`

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

Obsolescence

Not applicable.

Ignite-UX

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

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

NOTE

The December 2005 HP-UX 11i v2 Operating Environments DVD does not contain the Ignite-UX product. You can install the latest version of Ignite-UX from the HP-UX 11i v2 Applications Software DVD included in the HP-UX 11i v2 media kit.

Summary of Change

Ignite-UX version C.6.5.x delivers the following:

- Defect fixes (for details, see the Ignite-UX product Web site at <http://www.docs.hp.com/en/IUX/>)
- Support for new hardware enabled by the release
- Support for VxVM 4.1

NOTE

The support of HP-UX 11i v1.6 (B.11.22) has been discontinued as of Ignite-UX version C.6.5.x.

For information about the changes included in the previous version of Ignite-UX, version C.6.3.x or C.6.4.x, see the *HP-UX 11i September 2005 Release Notes*, available at <http://docs.hp.com/en/oshpux11i.html#Release%20Notes>.

The HP Software Depot Web site, where you can obtain product downloads, has been moved to <http://hp.com/go/softwaredepot>.

Impact

There are no impacts other than those described previously.

Compatibility

Ignite-UX does not support configurations that include both VxVM 3.5 and VxVM 4.1 in the same depot. Please make sure that your depots contain one version of the product or the other.

Performance

There are no known performance issues.

Documentation

The Ignite-UX product Web site, containing information and documentation, has been moved to <http://www.docs.hp.com/en/IUX/>.

The *Ignite-UX Administration Guide*, (B2355-90941) Edition 21 and later has been updated to reflect all the changes to the product and can be found at <http://docs.hp.com/en/oshpux11i.html#Ignite-UX>.

Obsolescence

Not applicable.

Obsolescence Bundle

The Obsolescence product is used in an update when obsolete software on the system needs to be removed.

This product is automatically selected for both install and update. During the cold install process, The Obsolescence product checks to see if an update is being performed. If it is not an update, it does not remove anything. If it is an update, the following obsolete products and/or drivers are removed.¹

- Removed as of September 2004:
 - HP-UX Visualize Conference Run Time Environment
 - HP Frame Relay Link Software
 - HP EISA 100BaseT Driver
 - HP HPPB 100BaseT Driver

1. Note that other obsolete products not listed here may also be removed upon update to HP-UX 11i v2 September 2004.

- HP I2O RAID Product
- SCR
- DMI¹
- Mobile IPv4¹
- HP HPPB TokenRing Driver
- HP EISA TokenRing Driver
- HP-PB ATM Driver
- HP HSC ATM Driver
- HP HSC FDDI Driver
- HP HPPB FDDI Driver
- HP EISA FDDI Driver
- Removed as of May 2005:
 - HP-UX Software Development Kit and Runtime Environment for the Java™ 2 Standard Edition Platform (SDK/RTE) v1.2
 - ObAM 5
- Removed as of December 2005:
 - MySQL

For further information, see the current *HP-UX 11i Version 2 Installation and Update Guide* available at <http://docs.hp.com/en/oshpux11iv2.html#Installing%20and%20Updating>.

Online Diagnostics

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

- EMS Hardware Monitors

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

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

1. In the future, a supported version of these products will be available as a Web release from the Software Depot at <http://hp.com/go/softwaredepot>.

Summary of Change

For December 2005, Online Diagnostics include the following:

- Enhanced to work in the HP Virtual Machine (HPVM) environment¹
- Integration of `slview` with HP System Management Homepage²

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://www.docs.hp.com/en/diag.html>:

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

1. For more information about HPVM, refer to "Partitioning Continuum and the Flexible Computing Environment" at <http://docs.hp.com/en/hplex.html>.
2. See also "HP System Management Homepage" on page 117.

- *STM Online Help*
- *STM Overview*
- *STM Tutorial*

Obsolescence

None.

Quality Pack Patch Bundle

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

Summary of Change

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

The May 2005 release of HP-UX 11i v2 once again contained the Quality Pack, as will future releases of HP-UX 11i v2. All Quality Packs are cumulative, thus the December 2005 HP-UX 11i v2 Quality Pack is a superset of the May 2005 HP-UX 11i v2 Quality Pack.

Impact

There are no impacts other than that described previously.

Compatibility

If you choose to only load the December 2005 version of the Quality Pack without doing a complete update to the December 2005 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 HP-UX administration tool set used to deliver and maintain HP-UX operating systems and layered software applications. Delivered as part of HP-UX, SD can help you:

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

Summary of Change

Software Distributor has been updated to incorporate defect fixes.

Impact

There are no impacts beyond added capability and increased performance.

Compatibility

SD is backward compatible.

Performance

There are no known performance issues.

Documentation

For further information, visit the SD Web site at <http://www.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.

Impact

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

Compatibility

SPB uses Java 1.4.0 or greater.

Performance

CAUTION

Java Swing behavior may cause navigational inconsistencies when running SPB through an X emulator. If your mouse click behavior setting is too slow, it can prevent SPB from buffering all mouse clicks. This could potentially lead to data loss. The SPB product release notes contain a detailed procedure for correcting this performance issue. It is highly recommended that you complete the procedure prior to using SPB. For this and other troubleshooting topics, refer to the SPB Help system.

Documentation

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

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

Obsolescence

Not Applicable.

Update-UX

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

Summary of Change

Update-UX has been updated to version B.11.23.0512.033. It no longer supports update from HP-UX 11i v1.6 (B.11.22) to HP-UX 11iv2 December 2005 or later releases.

Impact

You cannot update from HP-UX 11i v1.6 (B.11.22) to HP-UX 11iv2 December 2005 or later releases using Update-UX.

Compatibility

There are no known compatibility issues.

Performance

There are no known performance issues.

Documentation

For further information see the following:

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

Obsolescence

Not applicable.

Utilization Provider

The Utilization Provider version A.01.00 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

Utilization Provider is new with the HP-UX 11i December 2005 release. The `UtilProvider` bundle contains the Utilization Provider software and the `utild` (1M) manpage.

Impact

When Utilization Provider is installed it launches the `utild` daemon, which consumes minimal CPU, memory, and disk resources. Only 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 5MB in the default `utild` installation.

The Virtual Server Environment (VSE) Management Software, available via special media release in December 2005, relies on the Utilization Provider. Removing Utilization Provider will prevent the VSE Management Software from functioning properly.

Compatibility

There are no known compatibility issues.

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

For further information, refer to the `utild` (1M) manpage, as well as the WBEM schema (MOF files), which are located in `/opt/util/mof`.

Obsolescence

None

What is in This Chapter?

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

- Disks and File Systems (see page 142)
- HP CIFS Client (see page 143)
- HP CIFS Server (see page 145)
- VERITAS File System (Base-VXFS and HP OnlineJFS) (see page 147)
- VERITAS Volume Manager (VxVM) (see page 149)

Disks and File Systems

The Disks and File Systems (`fswweb`) application provides a graphical user interface (GUI) to HP-UX system administration tasks. The `fswweb` runs on the HP-UX 11i v2 (B.11.23) operating system. It is not supported on Linux and Windows operating systems. The product bundle tag is `FileSystems`.

While the Systems Administration Management (SAM) application is still the primary interface for HP-UX v1 (B.11.11) and v2 (B.11.23) system management, `fswweb` provides a GUI to SAM's File System and Disks system administration tasks. The `fswweb` application supports system administration tasks on the following file systems:

- Cache File System (`cacheFS`)
- CD-ROM File System (`CDFS`)
- Common Internet File System (`CIFS`)
- Hierarchical File System (`HFS`)
- Network File System (`NFS`)
- VERITAS File System (`VxFS`).

The `fswweb` is started within the HP Systems Insight Manager (HP SIM)¹ and HP System Management Homepage (HP SMH)² applications. The `fswweb` is only available within these other applications. It is not a standalone application as it requires HP SMH to run.

Summary of Change

The Disks and File Systems (`fswweb`) application is new to HP-UX. The first release is the HP-UX 11i v2 (B.11.23) December 2005 release.

Impact

The Disks and File Systems (`fswweb`) application provides a GUI to the disk and file system HP-UX system administration.

Compatibility

There are no known compatibility issues.

Performance

There are no known performance issues.

Documentation

For further information, refer to the `fswweb` Online Help provided in the `fswweb` application.

1. See "HP Systems Insight Manager" on page 118.
2. See "HP System Management Homepage" on page 117.

Obsolescence

Not applicable.

HP CIFS Client

CIFS is the native networking protocol on Microsoft Windows operating systems. The HP CIFS products for HP-UX provide a wide range of integration strategies for HP-UX and Windows.

The HP CIFS Client enables the HP-UX host to mount directories shared by remote CIFS servers (Windows, HP-UX, and other server platforms on which CIFS has been implemented). The HP CIFS Server enables the HP-UX host to provide access to its own shared directories by remote CIFS clients (Windows, HP-UX, and other CIFS clients); it emulates Windows file and print services.

The HP CIFS Client bundle also includes Pluggable Authentication Module - NT LAN Manager (PAM-NTLM) that allows HP-UX logins to be authenticated by a centralized service on a CIFS domain.

Summary of Change

HP CIFS Client A.02.01 is available on HP-UX 11i v2 December 2005. HP CIFS Client A.02.01 is implemented based on a substantially revised and improved codebase. This release contains the following enhancements and changes:

- Enhanced Security Features
 - NTLMv2 Password Encryption

This release of HP CIFS Client supports NTLM version 2 (NTLMv2) in addition to NTLM and Kerberos. NTLMv2 uses the same challenge-response protocol as NTLM, but provides more sophisticated encryption algorithms, hence better password protection.

For details, refer to the configuration parameters *ntlmEncryptionVersion* and *authenticationMethod* in the *HP CIFS Client A.02.01 Administrator's Guide*, available at "I/O Cards and Networking Software" section at <http://www.docs.hp.com>.
 - Packet Signing

This release supports packet signing. The purpose of CIFS packet signatures is prevention of man-in-the middle attacks: by requiring a unique signature on each Server Message Block (SMB) packet, the client and server are mutually assured of the other's identity.

Refer to the *HP CIFS Client A.02.01 Administrator's Guide* for a detailed description of the *smbPacketSigning* parameter.
- Enhanced Name Resolution
 - NetBIOS Name Services, WINS and DNS Support

HP CIFS Client A.02.01 supports DNS and the NetBIOS Name Services, including NetBIOS broadcast, and WINS, a Windows name resolution service similar to DNS. The configuration parameters *lookupTryNetbios*, *lookupTryDns* and *nbnsWinsIP* are used to configure which lookup mechanisms are used. For detailed information, refer to the “NetBIOS Name Services, WINS, DNS, IP Configuration” section in the *HP CIFS Client A.02.01 Administrator's Guide*.

- New `cifsdb` Command

The `cifsdb` command is used to manage CIFS Client user and mount database entries. It provides more flexibility than previous methods, in that it allows database entries to be removed even if inactive. Refer to Chapter 5, “Commandline Utilities” in *HP CIFS Client A.02.01 Administrator's Guide* for the detailed information on the `cifsdb`, `cifsmount`, and `cifslogin` commands.

- Other Changes

- Command Option Changes

Command options have been changed nominally between HP CIFS Client A.01.x and A.02.x.

Refer to the “Command Option Differences Between HP CIFS Client A.01.* and A.02.*” section in the *HP CIFS Client A.02.01 Administrator's Guide* for details.

- Configuration Parameter Changes

New configuration parameters have been introduced in HP CIFS Client A.02.01. In addition, some parameters used in versions A.01.x have been renamed or obsoleted in version A.02.01.

Impact

The HP CIFS Client A.02.01 is implemented based on a substantially revised and improved codebase. This release provides new enhancements to customers.

Compatibility

There is no compatibility impact.

Performance

The implementation for the new version of HP CIFS Client A.02.01 does not degrade performance.

Documentation

The user manual *HP CIFS client A.02.01 Administrator's Guide* and product release note *HP CIFS Client A.02.01 Release Note* can be found at <http://www.docs.hp.com>. (Click **I/O Cards and Networking Software**, then **CIFS (Common Internet File System)**).

Obsolescence

Not applicable.

HP CIFS Server

The HP CIFS Server provides file sharing, printer access and authentication services to CIFS clients including Microsoft Windows NT, XP, and 2000/2003, as well as HP-UX machines running HP CIFS Client software.

Summary of Change

HP CIFS Server 3.0c (version A.02.01.02) is available on HP-UX 11i v2 December 2005 and is based on Samba 3.0.7. HP CIFS Server A.02.01.02 provides minor enhancements and bug fixes in addition to the new features provided in HP CIFS Server 3.0a (version A.02.01).

- HP CIFS Server 3.0a (version A.02.01) was based on Samba 3.0.7 and contained selected fixes from Samba 3.0.7, including `samba-3.0.7-CAN-2004-0930.patch` and `samba-3.0.7-CAN-2004-0882.patch` security fixes. HP CIFS Server 3.0a (version A.02.01) provided the following main features:
 - Active Directory support: HP CIFS Server can join an Active Directory Server (ADS) realm as a member server and authenticate users using LDAP with Kerberos security.
 - Backup Domain Controller (BDC) support: Provides the BDC features and supports BDCs in a domain in which it acts as a Primary Domain Controller (PDC).
 - Modular authentication system support: HP CIFS Server now supports multiple account storage backend databases including `smbpasswd`, HP Netscape Directory Servers (LDAP), and a new `tdbsam` database. Refer to the Samba Web Administrator Tool (SWAT) help text for `passdb` backend or view the `smb.conf` manpage for additional information.¹
 - Winbind support: Dynamically assigns UNIX users and groups (UID/GIDs) to Windows users and groups to facilitate integration in Windows-based domains.
 - Support for new account management tools: You can use utilities including `pdbedit`, `net` commands, and `smbpasswd` to manage user account information. The `net` commands provide numerous new utility operations and replace others. For more information on how to use `pdbedit` and `net` commands, see the SWAT help text for `pdbedit` and `net` commands.
 - Support for three deployment models: Samba Domain Model, Windows Domain Model and Unified Domain Model are supported. These three models represent common network environments and demonstrate HP CIFS Server's flexibility.
 - Support for parameters changes in the `smb.conf` file: There are new parameters and removed parameters in the `smb.conf` file for HP CIFS Server A.02.01.

1. SWAT bundled with HP CIFS Server product. To access SWAT, go to `http://cifsserver-name:901`.

- The HP CIFS Server 3.0c (version A.02.01.02) provides the following minor enhancements:
 - Support for new option `RUN_WINBIND` in `/etc/rc.config.d/samba` to enable automatic start of the `winbind` daemon, `winbindd`.
 - Support for new `-l` and `L` options for the `wbinfo` utility to display user and group file ownership without name-length limitations.
 - This release supports the “Bad Uid” option for the “map to guest” configuration parameter to provide a mapping from valid domain users to a predefined guest account even if HP-UX does not have a UNIX User ID for the domain user.
 - New options `-n` (`nmbd` only) and `-s` (`smbd` only) provided to the `startsm` and `stopsm` utilities. These new options are used to start and stop the daemons individually.
 - Changes have been made to support the disk quotas configuration parameter.

Impact

HP CIFS Server 3.0c (version A.02.01.02) 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).

Compatibility

There is compatibility impact.

Performance

The implementation for the new version of HP CIFS Server A.02.01.01 does not degrade performance.

Documentation

For further information, refer to the following documentation:

- The Samba Web Administrator Tool (SWAT), bundled with HP CIFS Server product. To access SWAT, go to `http://cifsserver-name:901`.
- The following Samba books, provided with the HP CIFS Server product through the SWAT home page or accessible directly at `/opt/samba/docs/Samba-HOWTO-Collection.pdf` and `/opt/samba/swat/help`:
 - *The Official Samba-3 HOWTO and Reference Guide*
 - *Samba-3 by Example*
- The following HP CIFS Server documents, which can be found at `http://docs.hp.com/en/netcom.html` (click **CIFS (Common Internet File System)**):
 - *HP CIFS Server 3.0b Administrator's Guide Version A.02.01.01* (part number B8725-90079)
 - *HP CIFS Server 3.0a Release Note Version A.02.01* (part number B8725-90075)

- *HP CIFS Server 3.0b Release Note Version A.02.01.01* (part number B8725-90080)
- *HP CIFS Server 3.0c Release Note Version A.02.01.02* (part number B8725-90086)

Obsolescence

Not applicable.

VERITAS File System (Base-VXFS and HP OnlineJFS)

The VERITAS File System (Base-VXFS and HP OnlineJFS) is an extent-based journaled file system offering fast file system recovery time (after a crash) and online features such as online backup, online resizing, and online reorganization.

NOTE

Starting with the 4.1 release, only two terms are used in the VxFS context: Base-VXFS and HP OnlineJFS. Base-VXFS offers minimal file system functionality, while HP OnlineJFS enables online file system administration.

In the December 2005 release, both Base-VXFS 3.5 and 4.1 are on all OEs. Base-VXFS 3.5 is always-installed, while Base-VXFS 4.1 is selectable.

HP OnlineJFS 3.5 (B3929DA) and 4.1 (B3929EA) are on the EOE and MCOE. HP OnlineJFS 3.5 is selectable, while HP OnlineJFS 4.1 is default-installed. For more information about installation, see the *HP-UX 11i v2 Installation and Update Guide* for December 2005, available at <http://www.docs.hp.com/en/oshpux11iv2.html>.

HP OnlineJFS 3.5 and 4.1 can also be purchased separately. Contact your HP representative for more information.

Summary of Change

New with the December 2005 release is VXFS version 4.1. This major release offers the following features:

- Base-VXFS
 - The VXFS 4.1 release is the first release to support Disk Layout Version 6. File systems up to 256TB in size can be created on Disk Layout Version 6.
The applications that use the *statvfsdev* (3C) interface on a device name need to relink with the HP-UX library (*libc*) and to *libdlvxf* to be able to understand Disk Layout Version 6.
 - The multi-volume support feature allows several volumes to be represented by a single logical object.
 - Usage limits can be set on Storage Checkpoints.

- Storage Checkpoint File System Restore: Storage Checkpoints can be used by backup and restore applications to restore either individual files or an entire file system.
- The reverse path name lookup feature uses the `vxlsino` command to obtain the full path name of a file or directory corresponding to an `inode`.
- The VxFS intent log can be resized using the `log` option of the `fsadm` command. Dynamically changing the intent log size can improve system performance.
- The named data streams feature allows the `inode` to be associated with multiple data streams.
- Other Base-VXFS Enhancements:
 - The `fsadm` command allows fragmentation, reporting, and defragmentation operations on an individual file or directory, or on Storage Checkpoints.
 - The default Storage Checkpoint creation mode is now removable.
 - Operation of the intent log replay was improved to increase the speed of recovery after a file system failure.
 - The `vx_ninode` and `vxfs_bc_bufhwm` can be dynamically tuned without rebooting the machine.
- OnlineJFS (requires a license and includes all base features, plus the following)
 - The cross-platform data sharing feature allows data to be serially shared among heterogeneous systems that have direct access to the physical devices holding the data.
 - The Quality of Storage Service (QoSS) feature allows mapping of more than one device to a single file system.
 - The VxFS File Change Log (FCL) tracks changes to files and directories in a file system.

NOTE

The libraries and commands for VxFS are contained in the `EnableVxFS` bundle.

Impact**Large File Systems and Large File Support:**

The VXFS 4.1 release is the first release to support Disk Layout Version 6. File systems up to 256 TB in size can be created on Disk Layout Version 6. However, file systems larger than 1 TB can be created only on a 64-bit kernel on VERITAS Volume Manager. A 32 TB file system requires a 2 K block size, a 64 TB file system requires a 4 K block size, and a 128 TB or larger file system requires an 8 K block size.

File systems over 32 TB are called extra large file systems and require a license to create. However, only file systems up to 32 TB have been qualified and will be supported as of this stage. In addition, the OnlineJFS license is required to create file systems over 2 TB and under 32 TB. The EBFS license is required to create file systems over 32 TB.

An online conversion utility, `vxupgrade`, is provided to upgrade existing disk layouts to Disk Layout Version 6 on mounted file systems.

Compatibility

The `vxupgrade` command upgrades only Disk Layout Version 4 and Disk Layout Version 5. Disk layout versions prior to version 4 cannot be mounted. Use the `vxfsconvert` command to convert them to a disk layout version that can be mounted.

Also see “Ignite-UX” on page 131.

Performance

The `largefiles` option is now the default file size option for the `mount` command and `mkfs` command. The `delaylog` option is now the default intent logging mount option. The change of the default `mount` option from `log` to `delaylog` does not increase the risk of data loss, but allows Base-VXFS to cache data to improve performance.

Documentation

For further information, consult the following documents:

- *VERITAS File System 4.1 (HP OnlineJFS/JFS 4.1) Release Notes*, available at <http://docs.hp.com/en/5991-1832/5991-1832.pdf>
- *VERITAS File System 4.1 (HP OnlineJFS/JFS 4.1) Administrator's Guide*, available at <http://docs.hp.com/en/5991-1833/5991-1833.pdf>

Obsolescence

Not applicable.

VERITAS Volume Manager (VxVM)

The VERITAS Volume Manager (VxVM) is a disk space management subsystem developed and provided by VERITAS to HP. It allows physical disks to be subdivided and/or built up into virtual disk volumes which appear transparent to applications and the operating system as disk devices.

NOTE

Starting with the 4.1 release, only two terms are used in the VxVM context: Base-VXVM and Full VxVM. Base-VXVM provides basic volume manager functionality, while Full VxVM consists of additional features.

Base-VXVM is part of all the OEs and is a free product. Full VxVM can be purchased separately. Contact your HP representative for more information.

Summary of Change

- Base-VXVM

- Multi-Device Support: Multi-Device Support allows several volumes to be represented by a single logical object.
- Configuration Backup and Restore Support: Configuration Backup and Restore support allows you to backup and restore or replicate all Base-VXVM configuration data for disk groups and volumes.
- Cross-Platform Data Sharing Feature (CDS): CDS allows the sharing of data between heterogeneous systems where each system has direct access to the physical devices that are used to hold the data.
- Hitachi Extended Copy Facility: The Hitachi E-Copy facility allows a host server to request data movement from disk to tape or to another disk without the overhead of server CPU time I/O during the actual movement of data.
- Base-VXVM now allows you to add a node to a cluster dynamically.
- With this release, VxVM provides support for installation through a menu-driven frontend.
- Enhancement of Local Detach Policy: Local detach policy now works uniformly on both master and slave nodes in a cluster.
- Default Disk Group Behavior in Base-VXVM 4.1
In previous versions of VxVM, a disk group with the name `rootdg` (root disk group) was required. For VxVM to function, the `rootdg` disk group had to exist, and it had to contain at least one disk. This requirement no longer exists; however you might find it convenient to create a system-wide default disk group.
- Simplification of `vxinstall`
Because Base-VXVM no longer requires a `rootdg` to be configured; `vxinstall` has been much simplified, and you can no longer use this command to configure disk groups on your system after installation. You should now use `vxdiskadm` or the VERITAS Enterprise Administrator.
- The Base-VXFS 4.1 release supports a new disk layout (version 5) that enables the creation of file systems up to 32 terabytes in size.
- Full VxVM (includes all base features, plus the following)
 - The Intelligent Storage Provisioning (ISP) Service is an alternative to the traditional method of creating and managing volumes.
 - Enhancements to Device Discovery Layer (DDL):
 - Dynamic discovery of disks or their attributes
 - Allowing Dynamic Multipathing (DMP) kernel extensions to support multipathing and/or load balancing in a configuration that is specific to a particular disk array.
 - Previous releases of VxVM supported two naming schemes, OS-Native Scheme and Enclosure-based Naming. Although VxVM provided the means of changing between the two schemes dynamically, it was necessary to restart `vxconfigd` which is a time-consuming operation. With this release, the `vxconfigd` restart operation is no longer necessary.
 - Dynamic Multipathing Enhancements:
 - Coexistence of DMP with third-party drivers

- Failback is now a cluster-wide operation that provides significant performance improvements.
- A/PF type arrays are now supported by DMP in a clustered environment.
- Support for *B_FAILFAST* flag
- Coexistence of DMP with third-party drivers
- Storage Expert: System Administrators sometimes find that gathering and interpreting data about large and complex configurations can be a difficult task. Consisting of a set of simple commands that collect and analyze Base-VXVM configuration data, Storage Expert produces a summary report that recommends configuration improvements.

Impact

VxVM version 4.1 adds the following new features over VxVM 3.5:

- ISP Service: VERITAS Intelligent Storage Provisioning (ISP) allows you to organize and manage your physical storage by creating virtual storage devices, application volumes based on externally defined rule base.
- Cross-Platform Data Sharing: CDS allows VERITAS products and applications to access data storage independently of the operating system platform, enabling them to work transparently in heterogeneous environments.
- Storage Expert: System Administrators sometimes find that gathering and interpreting data about large and complex configurations can be a difficult task. Consisting of a set of simple commands that collect and analyze Base-VXVM configuration data, Storage Expert produces a summary report that recommends configuration improvements.

Compatibility

See “Ignite-UX” on page 131.

Performance

There are no known performance issues.

Documentation

For further information, consult the following documents, available at <http://docs.hp.com>:

- *VERITAS Volume Manager 4.1 Release Notes*
- *VERITAS Volume Manager 4.1 Administrator's Guide*

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:

- HP-UX Web Server Suite (see page 154)
 - HP-UX Apache-based Web Server (see page 155)
 - HP-UX Tomcat-based Servlet Engine (see page 155)
 - HP-UX Webmin-based Admin (see page 156)
- LDAP-UX Integration (see page 157)
- Mozilla Web Browser (see page 159)
- Netscape Directory Server for HP-UX (see page 160)

HP-UX Web Server Suite

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

- HP-UX Apache-based Web Server (see page 155)
- HP-UX Tomcat-based Servlet Engine (see page 155)
- HP-UX Webmin-based Admin (see page 156)
- HP-UX XML Web Server Tools (unchanged for May 2005)

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 5.8.3 (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 2.0.54.03 as primarily a bug fix release:

- Apache upgraded to 2.0.54
- mod_jk upgraded to 1.2.10
- OpenSSL upgraded to 0.9.7g
- mod_perl supports perl 5.8.3
- PHP upgraded to 5.0.4

For details, please see *HP-UX Web Server Suite Release Notes*, available at /opt/hpws/hp_docs or at the product Web site at <http://www.hp.com/go/webserver>.

Impact

There are no impacts other than those listed previously.

Compatibility

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

Performance

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

Documentation

See “Documentation” on page 154.

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

HP-UX Tomcat-based Servlet Engine has been updated to version 5.5.9.03. Tomcat version 5 implements the Servlet 2.4 and JavaServer Pages 2.0 specifications. Tomcat 5.5.x is designed to run on HP-UX Java Development Kit and Runtime Environment for the Java® Platform Standard Edition (JDK) 5.0 and later versions.

For details, please see *HP-UX Web Server Suite Release Notes*, available at `/opt/hpws/hp_docs` or at the product Web site at <http://www.hp.com/go/webserver>.

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

See “Documentation” on page 154.

Obsolescence

Not applicable.

HP-UX Webmin-based Admin

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

Summary of Change

The December 2005 release of HP-UX Webmin-based Admin is primarily a bug fix release. Webmin has been upgraded to version 1.070.05.

For details, please see *HP-UX Web Server Suite Release Notes*, available at `/opt/hpws/hp_docs` or at the product Web site at <http://www.hp.com/go/webserver>.

Impact

There are no impacts.

Compatibility

There are no known compatibility issues.

Performance

There are no known performance issues.

Documentation

See “Documentation” on page 154.

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 provides functionality to support migration from the NIS or NIS+ environment to an LDAP environment.

The LDAP-UX Integration product includes the following subcomponents:

- LDAP-UX Client Services
- LDAP-UX Client Administrator's Tools and Migration Scripts
- Mozilla LDAP 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 product works with a variety of LDAP v3 capable directory servers and is fully tested with Netscape Directory Server and Microsoft Windows 2000/2003 Active Directory Servers.

The LDAP-UX Client Administrator's Tools can help you to manage data in an LDAP directory server.

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

The LDAP-UX Integration product is a new product on the December 2005 release of HP-UX 11i v2.

- LDAP-UX Client Services B.04.00.03 contains the following major features:
 - Provides NIS+ to LDAP migration scripts
This release provides migration scripts that can be used to migrate name service data from an NIS+ domain into an LDAP directory server.
 - Supports AutoFS maps
This release supports the automount service under the AutoFS subsystem. This new feature allows users to store and manage AutoFS maps in an LDAP directory server.

- Publickey Support

This release of LDAP-UX Client Services provides enhancements for discovery and management of publickeys in an LDAP directory. Support for publickey requires functionality enhancement in LDAP-UX Client Services and enablement in ONC. ONC with publickey LDAP support will be available during the first half of calendar year 2006.
- Supports SASL/GSSAPI authentication

This release includes support for the GSSAPI SASL authentication method for Kerberos v5. LDAP-UX Client Services only supports SASL/GSSAPI authentication for Microsoft Windows 2000 and 2003 Active Directory Server.
- Supports pam-authz login authorization enhancements

For this release, pam-authz provides administrators to set up a local access policy in a simple policy file. A policy specifies which groups, users or ldap groups are allowed to login to the system.
- Supports Windows 2003 Active Directory Server and Services for UNIX (SFU) 3.5
- The major features for LDAP-UX Client Administration Tools are as follows:
 - A set of migration scripts that allow you to migrate NIS maps, AutoFS maps, or NIS+ maps into LDAP Data Interchange Format (LDIF) files and to import them into an LDAP directory server.
 - A set of LDAP administration tools that help you to manage user, group, and other information in an LDAP directory server. Examples of these tools include `ldapmodify`, `ldapsearch`, `ldapdelete`, `ldapentry`, and `ldappasswd`.
- Mozilla LDAP C SDK:
 - The LDAP-UX Integration product supports the Mozilla LDAP C SDK. The functionality provided by the SDK enables you to perform the following major LDAP operations:
 - Locate and retrieve information from the LDAP directory entries
 - Add new entries to an LDAP directory server
 - Update existing entries
 - Delete entries
 - Rename entries

Impact

This is the first time that the LDAP-UX Integration product has been bundled in the HP-UX 11i v2 Operating Environments. The product provides functionality to support migration from the NIS or NIS+ environment to an LDAP environment.

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.04.00 Administrator's Guide*, edition 3 (part number J4269-90051)
- *LDAP-UX Client Services B.04.00 with Microsoft Windows 2000/2003 Active Directory Server Administrator's Guide* (part number J4269-90049)
- *LDAP-UX Client Services B.04.00 Release Notes* (part number J4269-90045)
- *LDAP-UX Client Services B.04.00.02 Release Notes*
- *NIS+ to LDAP Migration Guide*

Obsolescence

Not applicable.

Mozilla Web Browser

Mozilla is an open source web and e-mail applications suite. Since 2004 it is the only supported browser on HP-UX. It uses the GTK open-source windowing toolkit on both PA-RISC and Itanium®-based versions.

The bundles in the suite are as follows:

- MOZILLA - Mozilla
- MOZILLASrc - Mozilla Source
- B6848BA - GTK+ Runtime Libraries

Summary of Change

Mozilla version 1.7 for HP-UX provides online browsing, searching, and e-mail tools for HP-UX 11i on HP Integrity and HP 9000 PA-RISC systems. It also continues to include Navigator, Messenger, Composer, Mail and Newsgroup, Address book components, and IR Chat.

This 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 1.7.3.02.

Impact

Mozilla version 1.7 for HP-UX provides improved Asian font support, the Japanese Language Pack, and fixes for security vulnerabilities.

Compatibility

This 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>.

Performance

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

Documentation

For more information on about HP Mozilla, go to the HP Mozilla Web site at www.hp.com/go/mozilla.

Obsolescence

HP will release new versions of Mozilla for HP-UX periodically. The HP Mozilla Web site (the HP Mozilla Web site at www.hp.com/go/mozilla) will continue to distribute at least one previous version of the product. Source code for each release is available on the Mozilla Web site in compliance with the Mozilla licensing (MPL, GPL, LGPL). No patches are provided for this product. Any defects will be addressed in future versions.

Netscape Directory Server for HP-UX

With Netscape Directory Server for HP-UX, HP 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

Netscape Directory Server (NDS) for HP-UX has been updated to version B.06.21.30 with new features and defect fixes. Its new features are as follows:

- Support for four-way multi-master replication
- Support for fine-grained password policy

- New configuration attributes:
 - `nsslapd-conntablesizes`
 - `nsslapd-schema-ignore-trailing-spaces`
 - `nsslapd-db-import-private-mem`
- Support for the “Get Effective Rights” feature
- The `shadowport` option
- The option to disable tombstones
- Support for Netscape Directory Server Gateway and Netscape Directory Server Org Chart
- An updated database

For detailed information about new features and defect fixes, refer to `/var/opt/netscape/servers/README.hp` and to the *Netscape Directory Server B.06.21.20 for HP-UX Release Notes*, available at <http://www.docs.hp.com/hpux/internet>.

Impact

NDS B.06.21.30 for HP-UX provides new features and defect fixes.

Compatibility

There are no known compatibility issues.

Performance

Netscape Directory Server B.06.21.30 for HP-UX does not degrade performance.

Documentation

For further information, refer to the following documents available at <http://www.docs.hp.com/hpux/internet>:

- *Netscape Directory Server B.06.21.20 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.

What is in This Chapter?

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

- HP-UX 11i Security Containment (see page 164)
- HP-UX IPFilter (see page 165)
- HP-UX Role-Based Access Control (see page 166)
- HP-UX Secure Shell (see page 168)
- HP-UX Security Attributes Configuration (see page 169)

HP-UX 11i Security Containment

HP-UX 11i Security Containment version B.11.23.01 introduces three core technologies: compartments, fine-grained privileges, and role-based access control. Together, these three components provide a highly secure operating environment without requiring applications to be modified.

In addition, HP-UX 11i Security Containment makes several trusted mode security features available on standard mode HP-UX systems. These features are called the HP-UX Standard Mode Security Extensions and include Audit, a User Security Database, and Per-User Security Attributes.

With HP-UX 11i Security Containment, the HP-UX 11i v2 operating system provides a highly secure, easy to maintain, and backwards-compatible environment to deploy business applications.

Summary of Change

HP-UX 11i Security Containment is now available on the Software Pack (SPK) media for HP-UX 11i v2 December 2005. (For more information about SPK, see “Software Pack (Optional HP-UX 11i v2 Core Enhancements)” on page 27.) Previously, the product was delivered on the Web.

Impact

With HP-UX 11i Security Containment, the HP-UX 11i v2 operating system provides a highly secure, easy to maintain, and backwards-compatible environment to deploy business applications.

Compatibility

There are no known compatibility issues.

Performance

Auditing increases system overhead. When performance is a concern, be selective about what events and users are audited. This can help reduce the impact of auditing on performance.

Documentation

For further information, refer to the following:

- Manpages:
 - *privileges* (3)
 - *privileges* (5)
 - *compartments* (4)
 - *compartments* (5)
 - *rbac* (5)
 - *audit* (5)
 - *security* (4)

— *userdb* (4)

- Other documentation:

HP-UX 11i Security Containment documentation, available at <http://docs.hp.com/en/internet.html#Security%20Products>

See also “HP-UX Role-Based Access Control” on page 166.

Obsolescence

Not applicable.

HP-UX IPFilter

The security product, HP-UX IPFilter version A.03.05.12, provides system firewall capabilities by filtering IP packets to control traffic in and out of a system.

Summary of Change

HP-UX IPFilter version A.03.05.12 contains defect fixes and minor enhancements. It also includes the following new features and major enhancements:

- NOSYNC pre-enablement
- RPC services enhancement

For more information on defect fixes, see the *HP-UX IPFilter A.03.05.12 Release Notes*, available at <http://docs.hp.com/en/internet.html#IPFilter>.

No Sync Support

HP-UX IPFilter A.03.05.12 is pre-enabled to support the NOSYNC method of Streams synchronization.

In addition to IPFilter, the complete NOSYNC solution involves changes in Streams, Transport, and DLPI. Transport Optional Upgrade Release (TOUR) 3.0 and NOSYNC DLPI are required to realize the performance gain associated with the NOSYNC enhancement. Installing the TOUR 3.0 software and the HP-UX 11i v2 DLPI patch (PHNE_33429) satisfies the dependency requirements.

For more information, see the *Transport Optional Upgrade Release (TOUR) 3.0 Release Notes*, available at <http://docs.hp.com>.

RPC and IPFilter

Remote Procedure Call (RPC) services do not use fixed port numbers, making it difficult to write IPFilter rules to filter RPC traffic. A new set of scripts is included with this release, which dynamically discover RPC ports and adds rules based on a configuration file.

For more information, see the *HP-UX IPFilter A.03.05.12 Administrator's Guide*, available at <http://docs.hp.com/en/internet.html#IPFilter>.

Impact

Other than the enhancements listed previously, there are no impacts.

Compatibility

There are no known compatibility issues.

Performance

There are no known performance issues.

Documentation

For further information, refer to the following:

- Manpages:
 - ipf*(4) packet filtering kernel interface
 - ipf*(5) IP packet filter rule syntax
 - ipf*(8) alters packet filtering list for packet input/output
 - ipl*(4) data structure for IP packet log device
 - ipmon*(8) monitors /dev/ipl for logged packets
 - ipfstat*(8) reports on packet filter statistics and filter list
 - ipftest*(1) test packet rules with arbitrary input
- Documents (available at <http://docs.hp.com/hpux/internet/index.html#HP-UX%20IPFilter>):
 - *HP-UX IPFilter version A.03.05.12 Administrator's Guide*
 - *HP-UX IPFilter A.03.05.12 Release Notes*

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.

This product is available on the Software Pack (SPK) media for HP-UX 11i v2 December 2005. (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 (11.23) December 2005 is the first release to include the HP-UX RBAC feature on the Software Pack media. The first release of HP-UX RBAC, version 11.23.01, was a Software Pack Web release and was released via HP’s Software Depot at <http://hp.com/go/softwaredepot>.

The following is a list of the main differences between the previously released HP-UX RBAC 11.23.01 and the HP-UX RBAC 11.23.02 included in the HP-UX 11i v2 (11.23) December 2005 release.

HP-UX RBAC 11.23.02 includes:

- integration and support for the Fine-Grained Privileges and Compartments components of the HP-UX 11i Security Containment feature¹
- `privedit` command that allows authorized users and groups to edit files they normally would not be able to edit because of file permissions or Access Control Lists
- enhanced auditing capabilities, including auditing based on HP-UX RBAC roles and authorizations, and advanced filtering of audit records
- ability to assign roles to groups
- support for Access Control APIs

Impact

HP-UX RBAC B.11.23.02 allows customers to use HP-UX RBAC with components of the HP-UX 11i Security Containment feature, specifically the Fine-Grained Privileges and Compartments components. HP-UX RBAC B.11.23.02 also provides the opportunity for customization by utilizing its APIs and includes several enhancements from the previous HP-UX RBAC release.

Compatibility

There are no known compatibility issues.

Performance

There are no known performance issues.

Documentation

For further information, refer to the following:

- Manpages:
 - *rbac* (5)

1. HP-UX 11i Security Containment is available on the Web via the HP Software Depot at <http://hp.com/go/softwaredepot>.

- *privrun* (1M)
 - *privedit* (1M)
 - *acps* (3)
 - *acps.conf* (4)
 - *acps_api* (3)
 - *acps_spi* (3)
 - *rbacdbchk* (1M)
 - *roleadm* (1M)
 - *authadm* (1M)
 - *cmdprivadm* (1M)
- Guides and White Papers located in the Role-Based Access Control section on the Internet and Security Solutions page of the HP Documentation Web site at <http://docs.hp.com/en/internet.html#Role-Based%20Access%20Control>
 - *HP-UX 11i Security Containment Administrator's Guide*
 - *HP-UX Role-Based Access Control B.11.23.02 Release Notes*
 - *Securing Virtual Partitions with HP-UX Role-Based Access Control*

Obsolescence

Not applicable.

HP-UX Secure Shell

HP-UX Secure Shell A.04.00.003 is based on OpenSSH 4.0p1. The client/server architecture supports the SSH-1 and SSH-2 protocols and provides secured remote login, file transfer, and remote command execution.

Summary of Change

Following lists the features introduced in HP-UX Secure Shell A.04.00.003:

- Address binding for port forwarding connections
- Remote binding control
- Hashing of host names and addresses
- Includes new *ssh-keygen* (1) options
- Improved logging of connection sources
- Improved handling of bad data in *authorized_keys* files
- Improved connection multiplexing support in *ssh* (1)
- Output from failing PAM session modules
- Choice of *AddressFamily* configuration directive in *sshd_config* (server)
- New configuration directives in *ssh_config* (client):

- *HashKnownHosts*
- *KdbInteractiveDevices*

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 more information, refer to the *HP-UX Secure Shell A.04.00.000/001 Release Notes* at <http://www.docs.hp.com> under the section “Internet and Security Solutions.”

Obsolescence

Not applicable.

HP-UX Security Attributes Configuration

The HP-UX Security Attributes Configuration tool (*secweb*) is an easy-to-use Web-based graphical user interface (GUI) for configuring system-wide and per user values of security attributes of local and Network Information Service (NIS) users.

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

- Launch the tool from System Administration Manager (SAM), HP Systems Insight Manager (SIM), HP System Management Homepage (SMH),¹ or by using the *secweb* 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.

1. For information about HP SIM, see “HP Systems Insight Manager” on page 118. For information about HP SMH, see “HP System Management Homepage” on page 117.

- View lock information of security attributes of local and NIS users

Summary of Change

Starting with the December 2005 release, the HP-UX Security Attributes Configuration tool is available on HP-UX 11i v2.

In this release, the HP-UX Security Attributes Configuration tool is a plug-in for the HP System Management Homepage. On launching from SAM, the new tool is displayed from the HP System Management Homepage on the Web browser.

Impact

You will be able to configure the system-wide and per-user values of security attributes of local and Network Information Service (NIS) users from SAM in a new look-and-feel GUI.

Compatibility

There are no known compatibility issues.

Performance

There are no known performance issues.

Documentation

For more information, refer to the product online help.

Obsolescence

Not applicable.

What is in This Chapter?

This chapter includes information about new and changed commands and system calls. Topics in this chapter are unchanged for the December 2005 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 covers a variety of changes of particular interest to programmers, such as changes to compilers, editors, and libraries, including the following:

- HP MLIB (see page 174)
- HP MPI (see page 175)
- Java 2 Standard Edition Platform (see page 176)
 - JDK, JRE, and Plug-In for HP-UX for the Java Platform (see page 176)
 - Java Out-of-Box (see page 177)
- Judy Libraries (see page 178)
- Perl (see page 179)

HP MLIB

HP MLIB contains mathematical software and computational kernels for engineering and scientific applications involving linear equations, least squares, eigenvalue problems, singular value decomposition, vector and matrix computations, convolutions, and Fourier Transforms. MLIB has six components: VECLIB, LAPACK, ScaLAPACK, SuperLU DIST, SOLVERS, and VMATH.

Summary of Change

HP MLIB has updated to version 9.4 with quality enhancements.

Impact

The impact of the HP MLIB update is improved performance.

Compatibility

HP MLIB 9.4 is supported on PA-RISC 2.0 11i v1 (or later) and Itanium 2 11i v1.6 (or later). There are no differences in default behavior or functionality across PA-RISC and Itanium®-based architectures. There are no regressions from previous releases.

Performance

There are no known performance issues.

Documentation

For further information, refer to the following:

- *mllib* (3M) manpage installed at `/opt/mlib/share/man`
- Web site at www.hp.com/go/mlib
- *HP MLIB User's Guide* and release notes at <http://docs.hp.com/hpux/dev/index.html#Performance%20Tools%20and%20Libraries>

Obsolescence

Not applicable.

HP MPI

HP MPI Version 2.1.1 is a high-performance implementation of the Message Passing Interface (MPI) standard. HP MPI complies fully with the 1.2 standard and provides full MPI-2 functionality. HP MPI provides an application programming interface and software libraries to support parallel, message passing applications that are efficient, portable, and flexible.

Summary of Change

HP MPI has been updated to version 2.1.1 with the following enhancements:

- Interconnects supported include:
 - InfiniBand on Itanium®-based systems
 - HyperFabric2
 - TCP/IP on clusters
- Improved gather performance for TCP/IP
- Improved alltoall performance
- Improved ssh support
- Improved socket progression for TCP/IP communication

Impact

There are no impacts other than those listed previously.

Compatibility

There are no known compatibility issues.

Performance

There are no known performance issues.

Documentation

For further information, refer to the following:

- Manpages are installed in `/opt/mpi/share/man`. Manpages for HP MPI utilities are located in `man1*`. Manpages for the HP MPI library are located in `man3*`.
- The *HP MPI User's Guide (Ninth Edition)* is available from the MPI Web site at <http://www.hp.com/go/mpi> Web site.
- The *HP MPI V2.0 for HP-UX Release Note* is available at <http://docs.hp.com/hpux/pdf/B6060-96014.pdf> and from the <http://www.hp.com/go/mpi> Web site at <http://h21007.www2.hp.com/dspp/files/unprotected/mpi/hpux/B6060-96014.pdf>.

Obsolescence

There are no product obsolescence plans.

Java 2 Standard Edition Platform

Java™ 2 Standard Edition (J2SE™) products for HP-UX provide solutions to develop or deploy Java applications with the best performance on HP-UX systems.

JDK, JRE, and Plug-In for HP-UX for the Java Platform

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 JDK for the Java™ 2 Platform Standard Edition and HP-UX Java Runtime Environment (JDK/JRE) v5.0. 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, 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 ObsJava12 (Obsolescence for Java 1.2) bundle removes SDK/RTE 1.2 upon installation of the HP-UX 11i v2 Operating Environments. (See also “Obsolescence Bundle” on page 132.)

The JDK, JRE, and Plug-in¹ bundles for December 2005 are as follows:

NOTE

In the December 2005 release, the Java for HP-UX version 5.0 products are not a part of the Technical Computing Operating Environment (TCOE).

- B9788AA - Java 1.3 SDK
- B9789AA - Java 1.3 RTE
- T1455AA - Java 1.3 Plugin
- T1456AA - Java 1.4 SDK

1. There is no plug-in for JDK/JRE v5.0. The functionality is incorporated into the products.

- T1456AAaddon - Java 1.4 SDK Addon
- T1457AA - Java 1.4 RTE
- T1457AAaddon - Java 1.4 RTE Addon
- T1458AA - Java 1.4 Plugin
- Java15JDK - Java 5.0 JDK
- Java15JDKadd - Java 5.0 JDK Addon
- Java15JRE - Java 5.0 JRE
- Java15JREadd - Java 5.0 JRE Addon
- ObsJava12 - Obsolescence for Java 1.2

Summary of Change

SDK/RTE versions 1.3 and 1.4 have been updated to incorporate defect fixes. JRE/JDK 5.0 is new with the December 2005 release of HP-UX 11i v2.

Impact

There are no impacts.

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 1.2 is obsolete and is removed by ObsJava12 (Obsolescence for Java 1.2) upon installation of the HP-UX 11i v2 Operating Environments.

Java Out-of-Box

Java Out-of-Box (JAVAOOB) is a stand-alone bundle that, upon installation, will install startup (RC) scripts, modify kernel parameters, rebuild the kernel, and reboot the system. During startup, the startup scripts will modify system tunables, thus providing better “Out of The Box” behavior for Java.

For a list of the system tunables that are modified by JAVAOOB, see Chapter 10 of the *HP-UX 11i Version 2 September 2004 Release Notes* at <http://docs.hp.com/en/oshpux11iv2.html#Release%20Notes>.

Summary of Change

For December 2005, JAVAOOB has been updated to incorporate defect fixes.

Impact

There are no impacts.

Compatibility

There are no known compatibility issues.

Performance

There are no known performance issues.

Documentation

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

Not applicable.

Judy Libraries

Judy Libraries are development and runtime libraries for handling dynamic arrays.

Summary of Change

The Judy Libraries product has been updated to version B.11.23.04.17 to incorporate packaging changes. There has been no change in functionality.

Impact

When Judy is installed, an empty *MANPATH* file is created in the “ / ” directory. This updated version will remove this file.

Compatibility

There are no known compatibility issues.

Performance

There are no known performance issues.

Documentation

For information about the Judy Libraries product, refer to the following:

- `/usr/share/doc/Judy/README`
- `/usr/share/doc/Judy/Judy1_3x.htm`

- /usr/share/doc/Judy/Judy1_funcs_3x.htm
- /usr/share/doc/Judy/JudyL_3x.htm
- /usr/share/doc/Judy/JudyL_funcs_3x.htm
- /usr/share/doc/Judy/JudySL_3x.htm
- /usr/share/doc/Judy/JudySL_funcs_3x.htm
- /usr/share/doc/Judy/Judy_3x.htm
- /usr/share/man/man3.Z/Judy.3x
- /usr/share/man/man3.Z/Judy1.3x
- /usr/share/man/man3.Z/Judy1_funcs.3x
- /usr/share/man/man3.Z/JudyL.3x
- /usr/share/man/man3.Z/JudyL_funcs.3x
- /usr/share/man/man3.Z/JudySL.3x
- /usr/share/man/man3.Z/JudySL_funcs.3x

Obsolescence

Not applicable.

Perl

Perl is a high-level programming language created and enhanced by the Open Source community. Perl takes the best features from other languages, such as C, awk, sed, sh, and BASIC, among others, and at least a dozen other tools and languages. The version that is submitted is 5.8.3 build 809.

Summary of Change

Perl 5.8.3 build 809 corresponds to the Perl 5.8.3 source code release and includes the following:

- Better Unicode support
- New IO implementation
- New thread implementation
- Better numeric accuracy
- Safe Signals
- Many new modules
- More extensive regression testing

Significant changes that have occurred in the 5.8.3 build 809 release are documented in `perldelta`. This document can be viewed by entering `man perldelta`.

Impact

There are no impacts other than those listed previously.

Compatibility

Perl 5.8 is not binary compatible with earlier releases of Perl. for XS modules. These modules have to be recompiled. (Pure Perl modules should continue to work.) The major reason for the discontinuity is the new IO architecture called PerlIO. PerlIO is the default configuration because without it, many new features of Perl 5.8 cannot be used. In other words: you just have to recompile your modules containing XS code.

Performance

There are no known performance issues.

Documentation

For further information, refer to the `perldelta` manpage and to the following Web sites:

- <http://www.perl.org>
- <http://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 December 2005 release of HP-UX 11i v2.

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

What is in This Chapter?

This chapter describes other new and changed operating-system software functionality. Topics in this chapter are unchanged for the December 2005 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.

