HP-UX 11i Version 2 March 2006 Release Notes

HP 9000 and HP Integrity Servers

Legal Notices

Acknowledgements

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.

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 March 2006 Release Notes*

    March 2006, Edition 2, MPN 5991-6741

Previous Documents in This Series

*   *HP-UX 11i Version 2 March 2006 Release Notes* (replaced by Edition 2)

    March 2006, Edition 1, MPN 5991-4803

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

    December 2005, Edition 1, MPN 5991-2710

*   *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, Edition1, MPN 5990-8153

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

    March 2004, Edition 1, MPN 5990-6739

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

    October 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
HP-UX Learning Products
3404 East Harmony Road
Fort Collins, Colorado 80528-9599

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

Typographic Conventions

We use the following typographical conventions.

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

Contents

Contents

6. Disk and File Management

7. Internet and Networking

8. Security

9. Commands and System Calls

10. Libraries and Programming

11. Internationalization

12. Other Functionality

Contents

Contents

1 Overview of the Release Notes

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 March 2006 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 March 2006 Release Notes?

The *HP-UX 11i Version 2 March 2006 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 December 2005 Operating Environment update.

As with other HP-UX release notes, the *HP-UX 11i Version 2 March 2006 Release Notes* does not completely document all the features of this release. Instead, it contains high-level information and pointers to more detailed operating system and product-specific documentation. Where appropriate, it also notes changes in the support of products. These release notes generally apply only to features that are delivered on the HP-UX 11i v2 Operating Environments (OE) media and, where specified, the Software Pack (SPK) media.

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

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

Where Should I Begin?

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

The section "What is New in the March 2006 Release?", in particular, will give you a general overview of how this release differs from the December 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 Workgroup*s: 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/softwarereleases/releases-media2/index.html`

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

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

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

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

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

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

HP Documentation Web Site

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

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

HP-UX 11i v2 Instant Information Media

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

HP-UX 11i Home Page

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

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

HP-UX Welcome Page

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

Manual Pages

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

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

README Documents

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

White Papers on HP-UX

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

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

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

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

What is in the Remaining Chapters?

The remaining chapters of these release notes are as follows:

- Chapter 2, "Introduction to HP-UX 11i Version 2," on page 17, provides an overview of the four Operating Environments, along with information about Software Pack and about compatibility issues.

- Chapter 3, "What is New at a Glance," on page 35, furnishes a quick overview of what is new, has changed, or has been deprecated or obsoleted in this and previous releases of HP-UX 11i v2.

- Chapter 4, "Server-Specific Information," on page 81, 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 127, presents information regarding directory, file system, and disk management.

- Chapter 7, "Internet and Networking," on page 131, covers changes to networking functionality and Internet services.

- Chapter 8, "Security," on page 135, covers changes and enhancements to security services.

- Chapter 9, "Commands and System Calls," on page 141, includes information about new and changed commands and system calls.

- Chapter 10, "Libraries and Programming," on page 143, provides information of particular interest to programmers, including changes to compilers, editors, and libraries.

- Chapter 11, "Internationalization," on page 149, presents information about text fonts and converters relating to various international languages.

- Chapter 12, "Other Functionality," on page 151, includes additional applications or functionality in the Operating Environments.

2 Introduction to HP-UX 11i Version 2

What is in This Chapter?

This chapter provides an introduction to HP-UX 11i v2, along with an overview of the 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 March 2006 Update Release (see page 18)
- HP-UX 11i Release Names and Release Identifiers (see page 19)
- HP-UX 11i v2 Software and Driver Bundle Types (see page 20)
- HP-UX 11i v2 Operating Environments (see page 21)

  — Overview (see page 21)

  — HP-UX 11i v2 Foundation Operating Environment (see page 21)

  — HP-UX 11i v2 Enterprise Operating Environment (see page 24)

  — HP-UX 11i v2 Mission Critical Operating Environment (see page 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 March 2006 (see page 32)

  — Support of Products (see page 33)

Welcome to HP-UX 11i v2 March 2006 Update Release

The March 2006 update release of HP-UX 11i v2 continues to support both the HP 9000 and HP Integrity server families. This Enterprise update release offers the full range of HP-UX Operating Environments (OEs) and capabilities. The March 2006 update release continues to expand on HP-UX 11i v2 virtualization capabilities and security enhancements, and improvements to the VERITAS file system. Significant new capabilities include the following:

- Continued support and improvements for HP Integrity Virtual Machines and HP-UX Virtual Partitions (vPars) A.04.02 (purchasable on separate media)

- Support for the sx2000 chipset and the 1.6MHz/9MB Intel® Itanium2 processor platform

- Enhanced functionality for HP-UX Serviceguard and Storage Management Products

- HP-UX Java Development Kit and HP-UX Java Runtime Environment for the Java™ 2 Platform Standard Edition (JDK/JRE) 5.0 now delivered on the Technical Computing Operating Environment (TCOE), as well as the other OEs

- Quality and feature enhancements to many products bundled in the OEs

- System Fault Management (`SysFaultMgmt`), a collection of tools used to monitor the health of HP servers, added to all OEs

HP's Business Critical Servers group places a premium on customer and partner investment protection. HP-UX 11i v2 maintains compatibility between HP 9000 and HP Integrity servers in the following ways:

- Common "look and feel" for HP-UX 11i on both server families

- Application Build Environment compatibility (source, makefile, and script compatibility)

- Data compatibility (identical data formats)

- Binary compatibility (the Aries dynamic code translation technology, a standard integrated component of every copy of HP-UX 11i for HP Integrity, executes HP 9000 programs on HP Integrity without recompiling or relinking)

With this March 2006 update or both the HP 9000 and HP Integrity server families, HP-UX 11i v2 continues to provide a smooth transition path for HP-UX customers and partners onto the next-generation HP Integrity 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**.

Also please note that upgrading to HP-UX 11i v2 May 2005 or a more recent HP-UX 11i v2 update release is required for the installation of vPars.

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.11.23.0603 HP-UX Mission Critical Operating Environment
Component
```

The above revision string represents the following:

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

`0603`= March 2006 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 HP-UX 11i v2 MTOE is no longer available. If you have questions, contact your HP sales representative.

- **HP-UX 11i v2 Technical Computing OE (TCOE)** — This OE contains extensive graphics applications and Math Libraries. This OE is bundled as `HPUX11i-TCOE`. For more details, see "HP-UX 11i v2 Technical Computing Operating Environment" on page 25.

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

HP-UX 11i v2 Foundation Operating Environment

The HP-UX 11i v2 Foundation Operating Environment is the standard OE from which the Enterprise OE and Mission Critical OE have been derived by adding appropriate applications. The HP-UX 11i v2 Foundation OE includes the base 64-bit HP-UX

operating system, plus the following features. (For an overview of the features that are new or have changed in this release, see Chapter 3, "What is New at a Glance," on page 35.)

Always-Installed Features[1]

- Base-VXFS 3.5
- Base-VXVM (VERITAS Volume Manager)
- BUNDLE11i
- Disks and File Systems (`fsweb`)
- 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 Accounts for Users and Groups
- HP-UX Kernel Configuration
- HP-UX Peripheral Device Tool (`pdweb`)
- HP-UX Security Attributes Configuration
- HP-UX WBEM Fibre Channel Provider
- HP-UX WBEM LVM Provider
- HP-UX WBEM SCSI Provider
- HWEnable11i
- iEther (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 v1.4
- SAM-NNC
- scsiU320-00
- Software Distributor (SD)
- SWGETTOOLS
- SysMgmtBASE
- System Administration Manager (SAM)
- Update-UX
- USB-00

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

- WBEM-LAN-00

Default-Installed Features

- Distributed Systems Administration Utilities
- GTK+ Libraries
- HP Global Workload Manager
- HP Integrity Virtual Machines Provider
- HP Integrity VM Support Library (`VMGuestLib`)
- HP System Management Homepage
- HP-UX Bastille
- HP-UX IPFilter
- HP-UX Java Runtime Environment (JRE) 5.0
- HP-UX Java Development Kit (JDK) for the Java™ 2 Platform Standard Edition (J2SE) 5.0
- HP-UX Secure Shell
- HP-UX Software Development Kit and Runtime Environment for the Java 2 Platform Standard Edition v1.4
- HP-UX Web Server Suite (including HP-UX Apache-based Web Server, HP-UX Tomcat-based Servlet Engine, HP-UX Webmin-based Admin, and HP-UX XML Web Server Tools)
- Instant Support Enterprise Edition (ISEE) (Servers only)
- Java for HP-UX Add-On C++ Libraries for SDK/JDK and RTE/JRE (PA-RISC only) 1.4 and 5.0
- Judy Libraries
- Mozilla Application Suite
- Mozilla Source
- Partition Manager
- Perl
- Sec00Tools
- Security Patch Check
- System Fault Management (`SysFaultMgmt`)
- Utilization Provider
- vPar Provider

Selectable Features

- 10 Gigabit Ethernet
- ATM-00
- Base-VXFS 4.1
- HP OnlineJFS 3.5 (B3929DA) (EOE and MCOE only)
- HP OnlineJFS 4.1 (B3929EA) (EOE and MCOE only)
- HP Pay per use
- HP Systems Insight Manager
- HP-UX Host Intrusion Detection System (HIDS)
- HP-UX iSCSI Software Initiator
- HyperFabric
- Ignite-UX
- Java Out-of-Box
- Mobile IPv6
- Netscape Directory Server
- Red Hat Directory Server for HP-UX
- PCI MUX
- Security Level 10

- Security Level 20
- Security Level 30
- 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 35.)

Always-Installed Features[1]

- 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 35.)

Always-Installed Features[1]

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

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

Default-Installed Features

- See "HP-UX 11i v2 Foundation Operating Environment" on page 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 HP-UX 11i v2 MTOE is no longer available. If you have questions, contact your HP sales representative.

HP-UX 11i v2 Technical Computing Operating Environment

The Technical Computing Operating Environment contains all the base functionality that is common to the other 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 35.)

Always-Installed Features[1]

- Base-VXVM (VERITAS Volume Manager)
- BUNDLE11i
- 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)
- 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

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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 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 v1.4
- 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)
- 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 March 2006 release of SPK delivers the following feature. For more information, see the indicated page:

- PCI Error Handling (see page 92)

NOTE   If you choose to load only the March 2006 version of this SPK feature, without doing a complete update to the March 2006 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. HP provides complete compatibility for the most comprehensive investment protection in the industry. HP provides:

- Binary and source code compatibility across operating system releases (no application recompilation required for binary compatibility)
- Binary and source code compatibility across architectures
- Field upgradability across architectures (HP customers can upgrade their systems in place)

Compatibility Across Operating System Releases

Hewlett-Packard provides forward binary compatibility for "well-behaved" applications between the versions of HP-UX 11i on the same architecture.

A "well-behaved" application is an application that adheres to the following characteristics:

- Uses only documented public APIs

  — Documented interfaces are those found at `http://docs.hp.com`

  — Applications that are kernel intrusive are NOT "well-behaved"

- Adheres to the required practices that are specifically documented

  — For example: Building an application that has a dependency from a shared library to an archive library is NOT supported

- Does not use documented features that are specifically described as having platform architecture or configuration limitations

- Does not decompose an HP-UX product and then reuse the results of the decomposition

  — For example: Extracting and using a module from a system library, or copying a system library or command from one release to another is NOT supported

Within the "well-behaved" application context, the following is true:

- HP-UX 11.0 application programs run unmodified on HP-UX 11i version 1

NOTE   Applications that are kernel intrusive or depend on internal proprietary data structures of HP-UX 11i version 1 may NOT be binary compatible.

- HP-UX 11i version 1.5 applications run unmodified on HP-UX 11i version 1.6 and on HP-UX 11i version 2 (hereafter version 1, version 1.5, version 1.6, and version 2 are referred to as v1, v1.5, v1.6, and v2).

- HP-UX 11i v1.6 applications run unmodified on HP-UX 11i v2.

- The HP-UX 11i v2 update release named "HP-UX 11i v2 September 2004" adds support for the HP 9000 (PA-RISC) and enhancements to HP-UX 11i v2 for Integrity servers based on Intel® Itanium® 2 processors. HP-UX 11i v2 for the HP 9000 is engineered to provide application binary compatibility between HP-UX 11i v1 and HP-UX 11i v2 on PA-RISC. Additionally, applications developed for the original HP-UX 11i v2 release for Integrity (introduced and shipped in 2003) require no actions. Note, however, that this is not an Enterprise release for Integrity servers. Again, binary compatibility does not necessarily apply to kernel-intrusive applications or applications that rely on proprietary data structures inside HP-UX.

NOTE   HP-UX 11i v2 September 2004 returns "B.11.23" as the release identifier in the `uname` command.

The C compiler standard C89 is supported on the HP 9000 (PA-RISC) while the C compiler standard C99 is supported on Integrity servers. This means that while C code developed on PA-RISC is forward compatible to Integrity, the reverse is not necessarily true.

HP-UX 11.0 applications that have been certified or proven to run correctly on HP-UX 11i v1 can also be considered to be compatible with HP-UX 11i v2 for the HP 9000. Compatibility details are fully documented in the Release Notes. Additionally, there is complete data compatibility between the Architectures.

Compatibility features between the two architectures (PA-RISC and Integrity) include the following:

- HP-UX 11i v2 on Integrity servers 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 on Integrity servers. Performance in compatibility mode may be less than native mode, but binary compatibility ensures that all PA-RISC applications can be executed on the Integrity server's architecture without recompilation.

- HP-UX 11i v2 on Integrity servers and HP-UX 11i v2 on PA-RISC 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 on Integrity servers are the same as for HP-UX 11i v2 on PA-RISC. This means that current HP-UX 11i system administrators can apply their skillsets directly to HP-UX 11i Integrity servers.

- HP-UX 11i v2 features application source code and application build environment compatibility across the PA-RISC and Integrity server architectures.

  — Source Code Compatibility:

    Application programs from HP-UX 11i on PA-RISC can be made into native Integrity server applications with recompilation; no source code modifications are necessary regardless of whether the application is 32 or 64 bits on PA-RISC

(HP-UX 11i on Integrity servers supports both 32-bit and 64-bit applications even though Integrity servers are a 64-bit architecture.) However, converting a 32-bit PA-RISC application into a 64-bit Integrity server application may require some source code changes.

— Application Build Environment Compatibility:

HP-UX 11i also features Application Build Environment compatibility across the PA-RISC and Integrity server architectures. This means that PA-RISC application build environments (make files, script files, etc.) can be moved to Integrity servers and will, without modification, function the same way that they did on A-RISC.

- HP-UX 11i on Integrity servers has the same data formats as HP-UX 11i on PA-RISC. This means that there is complete data compatibility between the two architectures. This interoperability allows the seamless integration of HP-UX 11i Integrity servers into a network of HP-UX 11i PA-RISC systems.

HP Integrity Virtual Machines Compatibility

HP Integrity Virtual Machines (VM) are engineered to provide application binary compatibility between HP-UX 11i v2 Integrity server native applications and the same applications running in virtual machines. This binary compatibility applies to applications with no specific device dependencies and to applications that depend only on devices currently virtualized by Integrity VM. Most applications do not have specific device dependencies. However, if your application has specific device dependencies, please refer to the "HP Integrity Virtual Machines QuickSpec" at `http://docs.hp.com` for details.

ISV Application Availability Across Architectures

With the source, data, and binary compatibility that HP provides from the PA-RISC architecture to the Integrity server architecture, it is expected that the vast majority of independent software vendors (ISVs) that support applications on PA-RISC will be able to readily transition these applications to HP-UX 11i on Integrity servers. 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/Integrity server 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 Integrity servers. The following list documents the exceptions to binary compatibility.

HP's Aries dynamic code translator does not support the following:

- binary mixed mode between PA-RISC and Integrity servers (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 NaNs (Not a Number)

- applications or debuggers that use `ptrace`, `ttrace`, and `profil` system calls

- core dumps for PA-RISC applications that abort

- applications that read the B-bit in the PSW (Process Status Word)

- 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 Integrity Servers

In nearly all cases, 32-bit PA-RISC applications can be recompiled for native execution on Integrity servers without source code modifications. This is true because the HP compilers for Integrity servers support both 32-bit and 64-bit data models. 32-bit applications use a data model known as ILP32 in which integers, long integers, and pointers are all 32 bits. 64-bit applications use a data model known as LP64 in which integers are 32 bits but long integers and pointers are 64 bits. HP compilers for Integrity servers support both data models.

In the case of a 32-bit PA-RISC application that is being recompiled for native execution on Integrity servers, 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 for Integrity servers that allow the vast majority of 32-bit PA-RISC applications to be recompiled without source code modification for native execution on the Integrity server architecture.

Help for Independent Software Vendors

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 PA-RISC as it functions on HP-UX v1

or

whose HP-UX 11i v2 Integrity server native application is limited to the devices currently virtualized by Integrity VM and fails to function in a virtual machine as it functions outside of the virtual machine 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. This binary compatibility requires that application software uses only externally documented and supported software interfaces. 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, e.g., they are all PA-RISC-based.

- The hardware platforms are both running the same version of HP-UX.

- The application has used only externally documented and supported software interfaces (e.g., does not use undocumented interfaces).

- The application software has no dependencies on specific types of hardware (e.g., 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/PA-8900 Binary Compatibility

Applications and software developed for systems with the earlier generation PA 8x00 processors will run correctly and without modification on the PA-8800 and PA-8900 processors. These new processors differ from previous ones by providing two cores within a single processor (dual-core).

Compatibility Issues or Exceptions in HP-UX 11i v2 March 2006

Compatibility issues or exceptions have been noted for the following products or features that have been updated in March 2006. For details, see the indicated pages.[1]

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

- HyprFabrc-00 (see page 87)
- scsiU320-00 (see page 89)

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

- USB-00 (see page 90)
- PCI Error Handling (see page 92)

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`

3   What is New at a Glance

What is in This Chapter?

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

- What is New in the March 2006 Release? (see page 36)
- What is New in the December 2005 Release? (see page 39)
- What is New in the May 2005 Release? (see page 45)
- What is New in the September 2004 Release? (see page 51)

  — What is New in September 2004 for Customers Migrating from HP-UX 11i v1? (see page 51)

  — What is New in September 2004 for Existing Customers of HP-UX 11i v2? (see page 60)

- What is New in the March 2004 Release? (see page 67)
- What is New in the Initial (October 2003) HP-UX 11i v2 Release? (see page 70)

What is New in the March 2006 Release?

In the following summaries, you can obtain a general picture of how the March 2006 release of HP-UX 11i v2 differs from the December 2005 release of HP-UX 11i v2.

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

Chapter 4: "Server-Specific Information" (see page 81)

- Hardware Enablement Patch Bundle: New servers with the sx2000 chipset now qualified. (See "Hardware Enablement Patch Bundle" on page 82.)

- HP Instant Support Enterprise Edition: Updated to version A.03.95.043 to incorporate defect fixes. (See "HP Instant Support Enterprise Edition" on page 83.)

- Networking and Mass Storage Drivers (see page 84)

  — `HyprFabrc-00`: Updated to support large user count. Erratum: At the initial release of HP-UX 11i v2, the `/opt/clic/bin/clic_probe` superseded the `/opt/clic/bin/clic_ping` utility. (See "HyprFabrc-00" on page 87.)

  — `scsiU320-00`: Updated to version B.11.23.0603 with disablement of Quick Arbitration and Selection (QAS), significantly reducing the occurrence of any SCSI-related issues seen in a mixed speed disk configuration. (See "scsiU320-00" on page 89.)

  — `SerialSCSI-00`: Updated with quality improvements. Added in December 2005 to support future cards. (See "SerialSCSI-00" on page 91.)

  — `USB-00`: Updated to version C.01.03.01 with various quality improvements from previous releases, a dynamically managed device file system, and USB mass storage encryption support. (See "USB-00" on page 90.)

- **New Product:** PCI Error Handling: Allows an HP-UX system to avoid a Machine Check Abort (MCA) or a High Priority Machine Check (HPMC) if a PCI error occurs. Now available on Software Pack media. (See "PCI Error Handling" on page 92.)

Chapter 5: "General System Administration" (see page 95)

- Distributed Systems Administration Utilities: Updated to incorporate defect fixes. Now delivered as a default-installed product on all OEs, including the TCOE. (See "Distributed Systems Administration Utilities" on page 96.)

- Enterprise Cluster Master Toolkit: Included documentation for version B.03.00 has been updated to include support for the VERITAS Cluster File System (CFS) in selected HP Serviceguard Storage Management Suite bundles. (See "Enterprise Cluster Master Toolkit" on page 97.)

- Feature Enablement Patch Bundle (`FEATURE11i`): Added new patches for VERITAS and Infiniband. (See "Feature Enablement Patch Bundle (FEATURE11i)" on page 98.)

- HP Partitioning (see page 99)

  — HP Global Workload Manager: CMS updated to version A.01.01.02 with changes, new features, and defect fixes for a more robust product. (See "HP Global Workload Manager" on page 99.)

— HP Process Resource Manager: Updated to version C.03.01 with integration with HP SIM and ability to control shared memory. Now works inside HP Integrity Virtual Machines. (See "HP Process Resource Manager" on page 101.)

— HP-UX Virtual Partitions: Updated to version A.04.02 with flexible administration capabilities, tape device support on PA-RISC servers, DRD integration, additional CPU support, and customer-requested fixes. Purchasable separately. (See "HP-UX Virtual Partitions" on page 102.)

— HP-UX Workload Manager: Updated to version A.03.01 with more flexibility in process placement, more workload groups, and more management combinations. (See "HP-UX Workload Manager" on page 104.)

— HP-UX Workload Manager Toolkits: Updated to version A.01.09 with an SAP Toolkit to simplify integration between SAP and WLM. (See "HP-UX Workload Manager Toolkits" on page 105.)

— PRM Libraries: `PRM-Sw-Krn` fileset has been updated to version C.01.04 to incorporate defect fixes. (See "PRM Libraries" on page 106.)

• HP Serviceguard: Included documentation for version A.11.17 has been updated to include support for the VERITAS Cluster File System (CFS) in selected HP Serviceguard Storage Management Suite bundles. Serviceguard A.11.17 on HP-UX 11i v2 and A.11.16 on HP-UX 11i v1 are the last versions that will support RS232 for heartbeat messaging. (See "HP Serviceguard" on page 107.)

• HP Serviceguard NFS Toolkit: Updated to incorporate a defect fix. (See "HP Serviceguard NFS Toolkit" on page 109.)

• HP System Management Homepage: Updated to version A.2.2.2 with defect fixes as well as improved event and hardware management. (See "HP System Management Homepage" on page 110.)

• HP Systems Insight Manager: Updated with support for integration with HP Storage Essentials Enterprise Edition, integration with HP ProLiant Essentials Virtual Machine Management Pack, and integration with HP ProLiant Essentials Server Migration Pack. (See "HP Systems Insight Manager" on page 111.)

• HP WBEM Services for HP-UX: Updated to version A.02.00.09 to incorporate defect fixes. (See "HP WBEM Services for HP-UX" on page 112.)

• HP-UX Accounts for Users and Groups tool: Updated to incorporate defect fixes. (See "HP-UX Accounts for Users and Groups" on page 113.)

• HP-UX WBEM Fibre Channel Provider: Updated to version 11.23.0603.02 to incorporate defect fixes. No new functionality. (See "HP-UX WBEM Fibre Channel Provider" on page 115.)

• HP-UX WBEM LVM Provider: Updated to version 11.23.005 to incorporate defect fixes. No new functionality. (See "HP-UX WBEM LVM Provider" on page 115.)

• HP-UX WBEM SCSI Provider: Updated to version 11.23.010 to incorporate defect fixes. No new functionality. (See "HP-UX WBEM SCSI Provider" on page 116.)

• Ignite-UX: Updated to version C.6.7.x with a defect fix and security improvements. (See "Ignite-UX" on page 117.)

• Online Diagnostics (see page 118)

— `OnlineDiag` Bundle: Updated to enable new HP servers. (See "OnlineDiag Bundle" on page 119.)

— **New Product:** `SysFaultMgmt` Bundle: Contains System Fault Management, which operates in a WBEM environment and provides a collection of tools for monitoring the health of HP servers and receiving information about hardware such as memory, CPU, power supplies, and cooling devices. (See "SysFaultMgmt Bundle" on page 120.)

- Quality Pack Patch Bundle: Included in this release as a superset of the December 2005 HP-UX 11i v2 Quality Pack. (See "Quality Pack Patch Bundle" on page 122.)

- Software Distributor: Updated to incorporate defect fixes. (See "Software Distributor" on page 123.)

- Update-UX: Updated to incorporate defect fixes. (See "Update-UX" on page 124.)

- Utilization Provider: Updated to version A.01.01 to provide defect fixes which enable utilization data to be more reliable for resource partitions and systems that contain more than 255 active disks. (See "Utilization Provider" on page 125.)

Chapter 6: "Disk and File Management" (see page 127)

- HP CIFS Server: Updated to 3.0d (version A.02.02) with fixes and functionality from the new Samba base (version 3.0.14a), including support for the `idmap_rid` facility and support for publishing printers in an MS Windows 2000/2003 ADS domain, as well as other enhancements. (See "HP CIFS Server" on page 128.)

- HP OnlineJFS: Version 1.4 is now "customer-selectable" instead of "default-installed" as in the previous release. (See "VERITAS File System (Base-VXFS and HP OnlineJFS)" on page 129.)

Chapter 7: "Internet and Networking" (see page 131)

- Mozilla for HP-UX: Updated to version 1.7.12.01 with enhancements including improved Asian font support, the Japanese Language Pack, and fixes for security vulnerabilities. (See "Mozilla Web Browser" on page 132.)

- **New Product:** Red Hat Directory Server for HP-UX: Version B.07.10.10 added to HP-UX 11i v2 with Windows user synchronization, get effective rights control, wide-area network replication, fractional replication, and other features. (See "Red Hat Directory Server for HP-UX" on page 133.)

Chapter 8: "Security" (see page 135)

- HP-UX Host Intrusion Detection System: Updated to version 4.0 with new features and enhancements, including support for reduction of alert volume by aggregation, reduction of alert volume by monitoring only critical files, the ability to specify critical users, and more. (See "HP-UX Host Intrusion Detection System" on page 136.)

- HP-UX Security Attributes Configuration tool: Updated to incorporate defect fixes. (See "HP-UX Security Attributes Configuration" on page 137.)

- OpenSSL: Has a new version number due to a packaging change. No change in functionality. (See "OpenSSL" on page 138.)

Chapter 9: "Commands and System Calls" (see page 141)

- No changes in this release.

Chapter 10: "Libraries and Programming" (see page 143)

- Java 2 Standard Edition Platform (see page 144)

  — HP 3D Technology for the Java™ 2 Standard Edition Platform: Upon installation of the OEs, v1.3 will be removed by the `ObsJava13` bundle.

  — HP-UX Java Development Kit and HP-UX Java Runtime Environment for the Java™ 2 Platform Standard Edition (JDK/JRE): Version 5.0 updated to incorporate defect fixes. Now included in the TCOE. `ObsJava13` bundle will remove SDK/RTE and Plug-In 1.3. (See "JDK, JRE, and Plug-In for HP-UX for the Java Platform" on page 144.)

  — Java Out-of-Box: Updated to incorporate defect fixes. (See "Java Out-of-Box" on page 145.)

- Perl: Updated to incorporate defect fixes. (See "Perl" on page 146.)

Chapter 11: "Internationalization" (see page 149)

- No changes in this release.

Chapter 12: "Other Functionality" (see page 151)

- No changes in this release.

What is New in the December 2005 Release?

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

The following summaries are not exhaustive, so it strongly recommended that you consult the *HP-UX 11i Version 2 December 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): May 2005 was last release that included the Minimal Technical OE (MTOE). After May 2005, the HP-UX 11i v2 MTOE is no longer available.

Chapter 4: "Server-Specific Information"

- Hardware Enablement Patch Bundle (`HWEnable11i`): Added support for hp BladeSystems Itanium BL60p servers. Several I/O driver bundles added or updated.

- HP Instant Support Enterprise Edition (ISEE): Updated to incorporate defect fixes and feature enhancements.

- Networking and Mass Storage Drivers (see page 84)

— `10GigEthr-00`: The `ixgbe` driver updated to version B.11.23.06 for December 2005. With the installation of separately available patches, the driver supports port-based steering multiqueue and TCP packet-reassembly in the driver.

— `FibrChanl-00`: Updated to incorporate driver fixes.

— `FibrChanl-01`: Updated to version B.11.23.04.01 with defect fixes and support for to-be-released AB378A and AB379A cards.

— `GigEther-00`: Updated to incorporate defect fixes.

— `RAID-01`: Updated to incorporate defect fixes.

— `scsiU320-00`: Updated with quality and diagnostic improvements for Ultra320 SCSI solutions.

— **New Product:** `SerialSCSI-00`: Added to the HP-UX 11i v2 Operating Environments to support cards that will be released in the future.

— `USB-00`: Updated to version C.01.02.01 with quality improvements.

• Supported Systems: HP-UX 11i v2 not supported on HP Workstations.

Chapter 5: "General System Administration"

• **New Product:** Distributed Systems Administration Utilities: Improves manageability of distributed systems and Serviceguard clusters.

• Enterprise Cluster Master Toolkit: Updated to version B.03.00 with defect fixes and Support for Cluster File System (CFS) in a Serviceguard A.11.l7 environment.

• Event Monitoring Services: Updated to incorporate defect fixes. Will be deprecated post HP-UX 11i v3.

• Feature Enablement Patch Bundle (`FEATURE11i`): Provides new patches required for vPars, VERITAS products, Infiniband, and Serial SCSI functionality.

• GlancePlus Pak: Updated to version C.04.50 with elimination of the dependency of `ttd` to have `rpcbind` or `portmap` running: support for both HTTP and HTTPS-based single port communication; replacement of `perfalarm` by DCE-based alarm management daemon, `alarmgen`; new metrics and other enhancements.

• High Availability Monitors: Updated to support the update of Event Monitoring Service (EMS).

• **New Product:** HP Integrity Virtual Machines Provider: Allows HP Systems Insight Manager (SIM) to display information about HP systems that support HP Integrity Virtual Machines. Not invoked directly by the user.

• **New Product:** HP Integrity VM Support Library (`VMGuestLib`): Subset of the HP Integrity Virtual Machines API Library used by HP Integrity Virtual Machines Provider.

• HP Partitioning

— HP Global Workload Manager: Central Management Server (CMS), one of the gWLM components that was delivered on the AR media, has been removed from the media.

— HP-UX Workload Manager: Updated to version A.03.00.01 with cleaner installations and the ability to manage a complex with mixed architectures.

— nPartition Provider: Updated to version B.23.01.05.01 to add support for new cell-based HP servers.

— Partition Manager v2.0: Updated to version B.23.02.01.02 to add support for new cell-based HP servers, improvements under HP SIM and HP SMH, and defect fixes.

— **New Product:** vPar Provider: Used by HP WBEM Services for HP-UX to extract information about virtual partitions on the system.

• HP Serviceguard: Updated to version A.11.17 with support for HP-UX 11i Security Containment, HP Fabric Clustering System for Infiniband, and Distributed Systems Administration Utilities. Includes enhanced security, a new command option, and a change in memory allocation, as well as other changes.

• HP Serviceguard NFS Toolkit: Updated to version A.11.23.04 to incorporate fixes for two defects.

• HP System Management Homepage (`SysMgmtWeb`): Updated to version 2.2.1.x with integration of SAM Web-based applications; support for legacy SAM X Launch; WBEM-based property pages for OS and software information.

• HP Systems Insight Manager: Updated to version 5.0 with numerous enhancements, including the ability to view more information and perform more tasks; new CLI commands; a First Time Wizard; support for Oracle databases; and other enhancements.

• HP WBEM Services for HP-UX: Updated to version A.02.00.08 to incorporate defect fixes.

• **New Product:** HP-UX Accounts for Users and Groups: Web-based tool (`ugweb`) allows the user to manage the local user accounts, NIS user accounts and group accounts.

• HP-UX Kernel Configuration: Now a plug-in tool in the HP System Management Homepage. TUI changed from previous ObAM-based TUI.

• HP-UX Peripheral Device Tool: Updated to version B11.23.05. The *waconf* (1M) command and the `WEB-ADM` fileset now obsolete and replaced by the HP System Management Homepage, which now integrates the HP-UX Peripheral Device Tool integrated.

• **New Product:** HP-UX WBEM Fibre Channel Provider: Used by client applications to determine information about Fibre Channel HBAs and their properties.

• **New Product:** HP-UX WBEM LAN Provider for Ethernet Interfaces: Used by client applications to determine 100bt and Gigabit links available on the system and collect information about them.

• **New Product:** HP-UX WBEM LVM Provider: Used by client applications to determine information about the LVM via HP WBEM Services for HP-UX.

• **New Product:** HP-UX WBEM SCSI Provider: Used by client applications to determine information about SCSI HBAs present on the system.

• Ignite-UX: Updated to version C.6.5.x with updated documentation, defect fixes, enhancements, and support for VxVM 4.1. No longer supports HP-UX 11i v1.6 (B.11.22). For December 2005, available only the AR DVD; it is not included in the December 2005 Operating Environments.

- Obsolescence Bundle: Upon update to December 2005, now removes MySQL in addition to other obsolete products.

- Online Diagnostics: Updated to include HPVM enablement, as well as integration of `slview` with HP System Management Homepage.

- Quality Pack Patch Bundle: Included in this release as a superset of the May 2005 HP-UX 11i v2 Quality Pack.

- Software Distributor: Updated to incorporate defect fixes.

- `SysMgmtBASE` bundle: First added to the HP-UX 11i v2 OEs in May 2005, provides the TUI framework for HP-UX Security Configuration tool and HP-UX Kernel Configuration. Updated in December 2005 to incorporate defect fixes.

- Software Package Builder: Updated to incorporate defect fixes.

- Update-UX: Updated to version B.11.23.0512.033. No longer supports update from HP-UX 11i v1.6 (B.11.22) to HP-UX 11iv2 December 2005 or later releases.

- **New Product:** Utilization Provider: Lightweight daemon (`utild`) records system-utilization data on a 5-minute interval.

Chapter 6: "Disk and File Management"

- **New Product:** Disks and File Systems (`fsweb`): Provides a GUI to HP-UX system administration tasks.

- **New Bundle**: `EnableVxFS`: Provides libraries and commands for VXFS.

- HP CIFS Client: Updated to version A.02.01 with a substantially revised and improved code base.

- HP CIFS Server: Updated to 3.0c (version A.02.01.02), which is based on Samba 3.0.7 and provides minor enhancements and defect fixes, as well as the new features provided in HP CIFS Server 3.0a (version A.02.01).

- **New Product:** VERITAS File System (HP JFS/HP OnlineJFS): Version 4.1 now available with support for large file systems and large files, as well as other features.

- **New Product:** VERITAS Volume Manager (VxVM): Version 4.1 now available with enhancements including VERITAS Intelligent Storage Provisioning Service, Cross-Platform Data Sharing, and Storage Expert, as well as many other features.

Chapter 7: "Internet and Networking"

- HP-UX Web Server Suite:

  — HP-UX Apache-based Web Server: Updated to version 2.0.54.03 as primarily a bug fix release.

  — HP-UX Tomcat-based Servlet Engine: Updated to version 5.5.9.03 with implementation of the Servlet 2.4 and JavaServer Pages 2.0 specifications. Designed to run on JDK and later versions.

  — HP-UX Webmin-based Admin: Updated to version 1.070.05 as primarily a bug fix release.

- **New Product:** LDAP-UX Integration product: Uses LDAP to centralize user, group and network information management in an LDAP directory. Provides functionality to support migration from the NIS or NIS+ environment to an LDAP environment.

- Mozilla for HP-UX: Updated to version 1.7.*x* with enhancements including improved Asian font support, the Japanese Language Pack, and fixes for security vulnerabilities.

- Netscape Directory Server for HP-UX: Updated to version B.06.21.30 with support for four-way multi-master replication, support for fine-grained password policy, new configuration attributes, and other features and defect fixes.

Chapter 8: "Security"

- HP-UX 11i Security Containment provides a highly secure, easy to maintain, and backwards-compatible environment to deploy business applications. Now available on Software Pack media.

- HP-UX IPFilter: Updated to version A.03.05.12 with NOSYNC pre-enablement, RPC enhancements, and defect fixes.

- HP-UX Role-based Access Control: Allows you to distribute administrative responsibilities by creating roles with appropriate authorizations and assigning them to non-root users and groups. Now available on Software Pack media.

- HP-UX Secure Shell: Updated to version A.04.00.003 with address binding for port forwarding connections, remote binding control, hashing of host names and addresses, and other changes.

- **New Product:** HP-UX Security Attributes Configuration tool (`secweb`): Provides a GUI and TUI for configuring the system-wide and per-user values of security attributes of local and Network Information Service (NIS) users.

Chapter 9: "Commands and System Calls"

- No changes in this release.

Chapter 10: "Libraries and Programming"

- HP MLIB: Updated to version 9.4 with quality enhancements.

- HP MPI: Updated to version 2.1.1 with several enhancements, including additional supported interconnects, and improved gather performance for TCP/IP, alltoall performance and other improvements.

- Java 2 Standard Edition Platform:

  — HP-UX Software Development Kit and Runtime Environment for the Java™ 2 Standard Edition Platform (SDK/RTE) v1.3 and v1.4: Updated to incorporate defect fixes.

  — **New Product:** HP-UX JDK for the Java™ 2 Platform Standard Edition and HP-UX Java Runtime Environment (JDK/JRE) 5.0: New with the December 2005 release of HP-UX 11i v2.

  — Java Out-of-Box: Updated to incorporate defect fixes.

- Judy Libraries: Updated to version B.11.23.04.17 to incorporate packaging changes. Also now removes empty *MANPATH* file that was created at product installation.

- Perl 5.8.3 build 809: Includes better Unicode support and numeric accuracy, new I/O and thread implementation, and other changes.

Chapter 11: "Internationalization"

- No changes in this release.

Chapter 12: "Other Functionality"

- No changes in this release.

What is New in the May 2005 Release?

In the following summaries, you can obtain a general picture of how the May 2005 release of HP-UX 11i v2 differs from the September 2004 release of HP-UX 11i v2. For further information, see the indicated chapters in the *HP-UX 11i Version 2 May 2005 Release Notes*, available in its most current version at `http://www.docs.hp.com/hpux/os/11iV2/`.

The following summaries are not exhaustive, so it 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 (`HWEnable11i`): 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.

  — `FibrChanl-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 as updating of the `waconf` command.

- Ignite-UX: Updated to version C.6.2.*x* with updated documentation, defect fixes, and enhancements.

- Kernel tunable `hdlpreg_hash_locks`: Deprecated and planned for future obsolescence.

- **New Product:** Node and Host Name Expansion (`NodeHostNameXpnd`) product bundle: Provides the ability to set node and host names up to 255 bytes. Now available on Software Pack.

- Obsolescence Bundle: Now removes ObAM 5 and HP-UX Software Development Kit and Runtime Environment for the Java® 2 Standard Edition Platform (SDK/RTE) v1.2, in addition to other obsolete products, upon installation of HP-UX 11i v2 May 2005.

- Online Diagnostics (`OnlineDiag`): Now includes support for HP-UX Virtual Partitions (vPars) A.04.01 and Node and Host Name Expansion, as well as other changes.

- Quality Pack: Once again HP-UX 11i v2 includes Quality Pack, as will future releases of HP-UX 11i v2.

- Software Distributor: Updated with new versions of the `gzip` and `swpackage` commands to provide added capability and increased performance.

- Software Package Builder: Updated with product enhancements.

- Update-UX: Updated to reflect defect fixes. No new features or functionality.

- Upper Layer Module (ULM) Services: Deprecated.

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`, `libtermlib`) and HP curses (`libHcurses`) interfaces deprecated in HP-UX 10.20 and to be removed in a future release. Applications utilizing these libraries should migrate to the standard X/Open curses interfaces.

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 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 51)

2. What is New in September 2004 for Existing Customers of HP-UX 11i v2? (see page 60)

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 60 for a picture of how the September 2004 release differs from the March 2004 release of HP-UX 11i v2.

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

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

- HP Instant Support Enterprise Edition: Formerly delivered on the HP-UX 11i v1 Support Plus media; now available with this release on HP-UX 11i v2.

- HP StorageWorks Command View SDM v1.08.00: Supports HP-UX 11i v2 on Itanium®-based platforms only. Near the release of HP-UX 11i v2 September 2004, a version of CVSDM to support HP-UX 11i v2 on PA-RISC platforms will be available on the Web.

- HP StorageWorks Secure Path V3.0E for HP-UX: Provides EVA Boot and Dump support on HP-UX 11i v2 September 2004 and later releases.

- HP-UX 11i v2 Driver Development Kit: Enhanced to support the current release of HP-UX 11i v2. Includes sample drivers and makefiles, as well as driver development tools for both PA-RISC and Itanium®-based systems, and other enhancements.

- HP-UX 3D Graphics Run Time Environment and Developer's Kit: Modules for hardware-accelerated OpenGL rendering removed because PA-RISC Workstations are not supported by this release. OpenGL rendering to remote displays supported via GLX protocol and HP Virtual Memory Driver.

- Networking and Mass Storage Drivers:

  — Always-Installed Networking Drivers:

    — Gigabit Ethernet and Fast Ethernet: Includes TCP Segmentation Offload (TSO) support for `iether` and `igelan` drivers; 64-bit MIB statistics support; HP-UX LAN provider support.

    — PCI FDDI: Enhanced to provide the FDDI network connectivity from Itanium®-based platforms, in addition to existing PA-RISC platforms. Deprecated and planned for future obsolescence.

  — Selectable Networking Drivers:

    — HyperFabric: Now supports a transparent local failover feature.

    — PCI ATM: Support for A5513A (155 Mbps ATM adapter over MMF) available on IO expander slots of rp8400 platform.

    — PCI Token Ring: Now available on Itanium®-based 64-bit platforms, in addition to existing PA-RISC platforms. Deprecated and planned for future obsolescence.

  — Always-Installed Mass Storage Drivers:

    — `disc3` Driver: Obsolete.

    — Fibre Channel Tachlite Driver: Supports A6795A, A5158A. Boot support provided. Online diagnostic tool changed to support A6826A. Supports Interrupt Migration and OLAR.

    — `FibrChnl-01`: Default interrupt delay settings tuned to improve performance.

    — HP-UX Ultra320 SCSI Driver: Updated with quality and diagnostic improvements for Ultra320 SCSI solutions, including core and add-on HP adapters.

    — `RAID-01`: Delivers the driver `ciss`, which supports the A7143A, A9890A, and A9891A cards.

    — SCSI Drivers: Support limited to PCI cards. New cards A5149A and A5838A supported, with limitations on Intel® Itanium®. HVD cards A4800A, A5159A, and A5159B not supported. OLAR of A6828A and A6869A cards supported. Interrupt migration supported.

  — Selectable Mass Storage Drivers:

    — HP-UX iSCSI Software Initiator: Now available on HP-UX 11i v2.

- Online Addition and Replacement (OL* or OLAR): The `rad` command no longer available. SAM no longer used for OL*. The `olrad` command now used; performs a critical resource analysis to ensure system integrity will not be compromised.

- On Demand Solutions:

  — Instant Capacity on Demand (iCOD) 6.03: Incremented from version 6.02 for support on HP-UX 11i 2.

  — Pay Per Use B.07.00: Updated so that either pricing model can be used as the metric and so that a processor cap can be specified, as well as other changes.

- Supported Servers and Workstations: Many 64-bit PA-RISC servers are supported on this release. No 32-bit servers are supported. PA-RISC workstations are not supported.

- Technical System Configuration (TechSysConf): TC-OpenSource tools removed. Remaining TC-SysSetup alters kernel configurable parameters, as well as selected system configuration files, for improved system performance.

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

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

- Compressed Dump: New feature with HP-UX 11i v2. Speeds up the crash dump process.

- Enterprise Cluster Master Toolkit B.02.11: DB2, Informix, and Sybase not supported. Mixed IA-PA failover for the Oracle9i package not supported.

- Event Monitoring Services: Framework and GUI available as 32-bit native applications on PA-RISC and Intel® Itanium®. 64-bit EMS Itanium®-based native libraries also available. Deprecated. Will be replaced post HP-UX 11i v3 with WBEM.

- GlancePlus Pak C.03.85: Contains enhancements to OVPA and GlancePlus, including new parm file parameters and new process-level metrics, as well as updated default adviser symptoms and alarms.

- High Availability Monitors: Available as 32-bit native binaries on PA-RISC & Itanium®-based platforms. Deprecated. Will be obsoleted post HP-UX 11i v3.

- HP Partitioning:

  — HP Process Resource Manager C.02.03: Installing this or later versions of PRM will not result in a reboot. Installing PHKL patches will.

  — HP-UX nPartition Configuration Commands: Management scope of commands extended to remote partitions and complexes. Additional enhancements added.

  — HP-UX Processor Sets: Once an optional product for the HP-UX 11i v1 release, now part of the HP-UX 11i v2 core kernel.

  — HP-UX Virtual Partitions (vPars) A.04.01: Will not release simultaneously with the September 2004 HP-UX 11i v2 release. Targeted to release in the middle of 2005.

  — HP-UX Workload Manager A.02.03: In most cases, installing this version (or later) will not result in a reboot. Installing PHKL patches will.

  — HP-UX Workload Manager Toolkits A.01.07: the `utilitydc` command, part of the Pay Per Use Toolkit, has been modified.

  — nPartition Provider B.01.03.00.x: Now supported on both PA-RISC and Itanium®-based systems.

  — Partition Manager 2.0: Features now brought to PA-RISC partitionable systems (as well as Itanium®-based), including improved GUI, support for CLM, and ability to configure nPartitions on remote complexes.

- HP Serviceguard A.11.16: Now supports clusters with mixed servers (HP Integrity and HP 9000).

- HP Serviceguard Quorum Server: Supported on both PA-RISC and Itanium®-based systems.

- HP-UX 11i v2 Required Patch Bundle (`BUNDLE11i`): Delivered with this release. Consists of patches for HP-UX 11i v2 that are required to install and update the operating system (OS).

- HP-UX Kernel Configuration: The `kcweb` application incorporates changes and new features. The `maxusers` tunable obsoleted. Kernel Configuration (KC) commands replaced by a new set of commands. Changes made in kernel location, boot-time selection, and automatic backup creation. The `/stand/system/` file enhanced.

- The Peripheral Device Tool (`pdweb`) B11.23.02: New for customers migrating from HP-UX 11i v1.

- Ignite-UX, version B.6.0.*x*: Includes ability to install and recover the HP-UX releases 11.0, B.11.11, B.11.22, B.11.23 PA-RISC, and B.11.23 Itanium®-based clients from a single Ignite-UX server. Also includes booting of both PA-RISC and Itanium®-based, known as dual boot, from a single media source; and installing one unified PA-RISC/Itanium®-based core HP-UX operating system bundle.

- Improved Database Startup and Shutdown Times: Database startup and shutdown times have been drastically reduced.

- Interrupt Migration: New for customers migrating from HP-UX 11i v1, this feature can be used to view and modify the interrupt configuration of the system.

- MySQL: Updated with tightened security. Product has been deprecated.

- Obsolescence Product: New product, used in an update when obsolete software on the system needs to be removed.

- OnlineDiag: Includes cell-local memory (CLM) support for PA-RISC platform, as well as various bug fixes and enhancements. Support added for new devices.

- Quality Pack Patch Bundle: All patches that were in the March 2004 HP-UX 11i v2 Quality Pack will be superseded by dual-architecture patches, which will be placed in `BUNDLE11i`.

- SAM-NNC: Added support for VLAN, IPoIB, large send, and DHCPv6 functionality, plus other changes.

- Servicecontrol Manager: Contains only minor updates. All functionality remains the same. Product has been deprecated.

- Software Distributor (SD): Updated to a new version to support this new release of HP-UX 11i v2.

- Software Package Builder A.02.00: Updated to incorporate defect fixes.

- System Administration Manager (SAM): Includes new tools, HP-UX Kernel Configuration tool and HP-UX Peripheral Devices tool.

- System V Shared Memory: Incorporates the functionality of the now-obsoleted ShmemExtensions product. Maximum for the `shmmni` tunable parameter increased.

- Update-UX: Updated to incorporate defect fixes.

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

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

- 16 Terabyte (TB) File System Support: VxFS 3.5 file systems of up to 16 TB now certified.

- AutoFS 2.3: Upgraded to include the features of the SUN ONC AutoFS version 2.3 product, as well as performance enhancements, including on-demand mounting.

- DeviceIDS: Provides a significant performance improvement for AutoFS at unmount time.

- File Systems Backup and Recovery Commands: The commands *fbackup* (1M), *frecover* (1M), and *ftio* (1) deprecated.

- Hierarchical File System (HFS): Deprecated. Will be removed in a future release.

- HP CIFS Client A.01.09.02: Provides 64-bit PAM-NTLM libraries support and defect fixes.

- HP CIFS Server 2.2i (A.01.11.01): Provides new LDAP support functionality, as well as other new features and defect fixes.

- Logical Volume Manager (LVM) and MirrorDisk/UX: Performance improved. LVM no longer performs software bad block relocation. Defects fixed.

- Network File System (NFS): New option added to the `umount` command. Compatibility exception noted.

- Network Information Service Plus (NIS+): Deprecated and planned for future obsolescence. Valid modification requests to update NIS+ tables will now fail if the size of the request is larger than 9000 bytes.

- Portable File System (PFS): Obsolete.

- VERITAS File System (VxFS/HP OnlineJFS/JFS) 3.5: Contains new and changed features, including new and/or enhanced tunable parameters, enhanced VxFS commands, new I/O error handling policy, new default intent log mode, new default system block size, VxFS system activity reporter, forced unmounts, and more. Enables creation of file systems up to 32 TB (16 TB has been certified).

- VERITAS Volume Manager (VxVM) 3.5 for HP-UX (Base): Includes new versions of VEA and SIG Licensing, as well as defect fixes.

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

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

- HP Data Link Provider Interface (DLPI): Includes enhancements to the Streams interface; new third-party driver interface for non-native Streams drivers; consolidation of `.h` files; obsolescence of the dump read capability of the *lanscan* (1M) command; support for TCP Segmentation Offload (TSO or Large Send), InfiniBand technology, and 64-bit MIB.

- HP Openview Emanate Agent 15.3: Agents are now SNMPv3 compatible. IPv6 agent added.

- HP-UX LAN Provider: New with this release of HP-UX 11i v2. Client applications can use this Provider to determine 100bt and Gigabit links available on the system and collect information about them.

- HP-UX Mobile IPv6 A.01.01: Offers the same functionality as A.01.00, but delivery method has changed.

- HP-UX Web Server Suite:

  — HP-UX Apache-based Web Server 2.0.50.01: Primarily a security, bug fix release with enhancements.

  — HP-UX Webmin-based Admin A.1.070.01: Primarily a security, bug fix release.

- Internet Services:

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

- LAN Administration Commands: Include support for IPoIB, 64-bit MIB, and Native and Non-Native DLPI drivers developed by IHVs, plus new command-line options for `lanadmin`.

- Mozilla Application Suite 1.4.0.01: Contains full Japanese localization as well as other defect fixes and enhancements. Security bulletin posted.

- Netscape Directory Server 6.11: Includes enhancements to Multi-Master replication, login enhancements, virtual attribute search, new plug-ins support, and a data interoperability feature.

- Network Tracing and Logging (NetTL): Changes include formatting support for IPoIB and new CLI option to support configurable trace buffer timer value.

- Network Transport (ARPA): Changes include support for enhancements of HP-UX DLPI; enhancements to CKO interfaces between HP-UX transport and DLPI; removed support for dump reading by `netstat` and `arp`; IPv6 transport supported, and other changes. Problem and work-around noted: HP-UX sends TCP packets with incorrect window size. (

- Point-to-Point Protocol (PPP): Available on HP-UX 11i v2. Includes changes to Point-to-Point Protocol over Ethernet (PPPoE) and Point-to-Point Protocol for IPv6 (PPPv6).

- STREAMS/UX: The *HP-UX 11i v2 September 2004 Release Notes* contains an error and should instead read as follows: For non-blocking writes, during flow control conditions, STREAMS now returns **success (0 return value)** in the case of partial writes on STREAMS-based pipes.

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

September 2004 Release Notes, Chapter 8: "Security"

- Boot Authentication: Now available on all Standard Systems. Standard Mode Boot Authentication feature can be configured by two parameters.

- Generic Security Service Application Programming Interface (GSS-API): IPv6 enabled.

- HP-UX Bastille 2.1: New product for customers migrating from HP-UX 11i v1.

- HP-UX IPFilter A.03.05.10.02: Includes additional defect fixes.

- HP-UX Secure Shell A.03.71.000: Contains several new features, including enhanced `ssh_prng_cmds` file for random number generation, new escape character for requesting a pseudo terminal, and support for generating KEX-GEX groups in the `ssh-keygen` file.

- HP-UX Strong Random Number Generator: New product with HP-UX 11i v2.

- HP-UX Host Intrusion Detection System 2.3: Product bundle renamed and restructured to improve product installation and maintenance.

- Install-Time Security B.01.$x.x$: New product for customers migrating from HP-UX 11i v1.

- Kerberos Client (KRB5-Client): Changes include support for appdefaults section in the `/etc/krb5.conf`; **multidomain support**; IPv6 support.

- OpenSSL A.00.09.07-d: A self-signed host certificate is automatically generated while installing OpenSSL.

- PAM: 64-bit framework now supported on both PA-RISC and Itanium®-based systems. New PAM module introduced. Defect fixes included.

- PAM-Kerberos v1.23: Supports both Itanium®-based and PA-RISC applications in 32-bit mode and 64-bit mode. The `pam_sm_acct_mgmt()` function returns `PAM_USER_UNKNOWN` instead of `PAM_SUCCESS` when the user is not present in the kerberos database.

- Security Patch Check 2.0: New product for customers migrating from HP-UX 11i v1.

- Shadow Passwords: New feature enhances system security by hiding user-encrypted passwords in a shadow password file. Now supported by SAM.

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

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

- The `execve[*]()` system calls: Beginning with HP-UX 11i v1.6, the kernel ignores `setuid` and `setgid` bits on scripts for security reasons. In addition, buffer overflow protection is now enabled.

- The `fuser` Command: Performance improved.

- The `insf`, `lssf`, and `mksf` Commands: Now support IHV drivers.

- The `mmap()` Function: Now possible to perform mappings between a process's address space and I/O device registers or memory.

- The `olrad` Command: The *rad* (1M) command replaced by the more robust *olrad* (1M) command.

- Post/Wait: New. Provides a fast, lightweight synchronization facility for user applications.

- The `ps` command: The default width is now set to 128 characters and a default file has been provided to define the length of the command field, which can be between 64-1020.

- The `rc` Shell Script: When a system needs reboot for some reason, messages in the file `/etc/rc.bootmsg` will be displayed before the system is rebooted.

- The `scsimgr` and `scsiscan` Commands: Deprecated. Planned for obsolescence in HP-UX 11i v3.

- The `settune` and `settune_txn` System Calls: Post HP-UX 11i v2, tunables set using these kernel system calls will not be persistent across reboots.

- The `sfd` Daemon: Deprecated. Planned for obsolescence in HP-UX 11i v3.

- The `sysdef` command: Deprecated. Reports incorrect values for some tunable parameters such as *msgmap*, *sema*, and *shmem*.

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

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

- Absolute Debugger (`adb`): Improved program includes support shared library, threads, multiprocessor dump reading, 64-bit DLKM dump reading, among others. Also includes improved command-line syntax, enhanced capabilities in expressions and format strings, and better file searching and writing capability, among others.

- HP aC++ Compiler for PA-RISC A.03.55.02: Includes numerous new features for customers migrating from HP-UX 11i v1.

- HP C Compiler for PA-RISC: Includes numerous changes to version B.11.11.02 in each subsequent release (B.11.11.04, B.11.11.06, B.11.11.08, B.11.11.10).

- HP Fortran for HP-UX 2.8.2: Includes performance tuning enhancements.

- HP MLIB 8.6: FFT routines support data sizes of any positive length.

- HP MPI 2.0.1: InfiniBand interconnect on PA-RISC supported.

- HP-UX Buffer Cache Tunable Parameters: All tunables associated to the sizing of the buffer cache (`nbuf`, `bufpages`, `bufcache_max_pct`, `dbc_min_pct`, and `dbc_max_pct`) have been deprecated and will be obsolete in HP-UX 11i v3.

- Java 2 Standard Edition Platform:

  — HP 3D Technology for the Java 2 Standard Edition Platform: Only for Itanium®-based systems. PA-RISC-based systems not supported.

  — Java for HP-UX PA-RISC Add-On C++ Libraries for SDK and RTE: Now included in HP-UX 11i v2.

- Math Library (libm): Although the C Math Library's API for PA-RISC is unchanged from HP-UX 11i v1, differences between it and the API for Itanium®-based systems should be noted.

- POSIX Threads: Augmented for PA-RISC systems to support two modes of scheduling, system scope (1x1) and process scope (MxN).

- The Software Transition Kit (STK): Available on the Web or Application Release media is a collection of tools and documents designed to help transition HP-UX applications from earlier versions of HP-UX to the latest version of HP-UX on the PA-RISC or the Itanium®-based platform.

- Transition Links: Deprecated. Will become obsolete in post-HP-UX 11i v2 releases.

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

September 2004 Release Notes, Chapter 11: "Internationalization"

- Internationalization Features: Changes include Unicode 3.0 support, GB18030 standard, simplified Chinese input methods, mainframe `iconv` converters for Japanese characters, system support for Latin and South American locales, new locale binaries and `iconv` converters, Hong Kong supplementary character set (HKSCS), TrueType fonts for Asian languages, and other changes.

- Deprecated Functionality: Several commands, library routines, and lp model files deprecated. Will be removed in next major release of HP-UX.

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

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

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

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

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

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

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

For a general picture of how this release differs from the June 2004 release of HP-UX 11i v1, you should review the list "What is New in September 2004 for Customers Migrating from HP-UX 11i v1?" on page 51.

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

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

- HP Instant Support Enterprise Edition: New with this release of HP-UX 11i v2.

- HP StorageWorks Secure Path V3.0E for HP-UX: Provides EVA Boot and Dump support on HP-UX 11i v2 September 2004 and later releases.

- Networking and Mass Storage Drivers

  — Always-Installed Networking Drivers:

    — Gigabit Ethernet and Fast Ethernet: Includes TCP Segmentation Offload (TSO) support for `iether` and `igelan` drivers; 64-bit MIB statistics support; HP-UX LAN provider support; Virtual LAN (VLAN) support.

  — Selectable Networking Drivers:

    — HyperFabric: Now supports a transparent local failover feature.

    — PCI ATM: Support for A5513A (155 Mbps ATM adapter over MMF) available on I/O expander slots of rp8400 platform.

    — PCI Token Ring: Deprecated and planned for future obsolescence.

  — Always-Installed Mass Storage Drivers:

    — `disc3` Driver: Obsolete.

    — `FibrChnl-00`: Online diagnostic tool changed to support A6826A.

    — `FibrChnl-01`: An option has been added to the `fcmsutil` utility that updates the EFI driver stored in the flash ROM of an A6826A HBA port.

    — HP-UX Ultra320 SCSI Driver: Updated with quality and diagnostic improvements for Ultra320 SCSI solutions, including core and add-on HP adapters.

    — `RAID-01`: Delivers the driver `ciss`, which supports A7143A, A9890A, and A9891A cards.

    — SCSI Drivers: Cards A4800A, A5159A, and A5159B obsoleted.

— Selectable Mass Storage Drivers:

— HP-UX iSCSI Software Initiator: Now available on HP-UX 11i v2.

- Online Addition and Replacement (OL* or OLAR): Now available for both PA-RISC and Itanium®-based systems.

- On Demand Solutions:

— Instant Capacity on Demand (iCOD) 6.03: Incremented from version 6.01 to incorporate defect fixes.

— Pay Per Use B.07.00: Updated so that either pricing model can be used as the metric and so that a processor cap can be specified, as well as other changes.

- Secure Path V3.0E for HP-UX: Provides EVA Boot and Dump support on HP-UX 11i v2 September 2004 and later releases.

- Supported Servers and Workstations: Many 64-bit PA-RISC servers are supported on this release. No 32-bit servers are supported. PA-RISC workstations are not supported.

- Technical System Configuration (TechSysConf): Now supported on PA-RISC servers that run HP-UX 11i v2.

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

September 2004 Release Notes, Chapter 5: General System Administration

- Enterprise Cluster Master Toolkit B.02.11: New scripts added: HP Apache, HP Tomcat, HP CIFS.

- Event Monitoring Services: Framework and GUI available as 32-bit native applications on PA-RISC and Intel® Itanium®. 64-bit EMS Itanium®-based native libraries also available. Deprecated. Will be replaced post HP-UX 11i v3 with WBEM.

- GlancePlus Pak C.03.85: Contains enhancements to OVPA and GlancePlus, including new `parm` file parameters and new process-level metrics, as well as updated default adviser symptoms and alarms.

- High Availability Monitors: Available as 32-bit native binaries on PA-RISC and Itanium®-based platforms. Deprecated. Will be obsoleted post HP-UX 11i v3.

- HP Partitioning:

— HP Process Resource Manager C.02.03: Installing this or later versions of PRM will not result in a reboot. Installing PHKL patches will.

— HP-UX nPartition Configuration Commands: Includes changes to the `parmodify`, `parcreate`, and `parstatus` commands, as well as notes regarding the side effects of using WBEM's Trust Store file.

— HP-UX Virtual Partitions (vPars) A.04.01: Will not release simultaneously with the September 2004 HP-UX 11i v2 release. Targeted to release in the middle of 2005.

— HP-UX Workload Manager A.02.03: In most cases, installing this version (or later) will not result in a reboot. Installing PHKL patches will.

— HP-UX Workload Manager Toolkits A.01.07: The `utilitydc` command, part of the Pay Per Use Toolkit, has been modified.

— nPartition Provider B.01.03.00.*x*: Now supported on both PA-RISC and Itanium®-based systems. Now supports WBEM 2.0.

— Partition Manager 2.0: Supported on both PA-RISC and Itanium®-based systems. Now interacts with nPartition Provider using WBEM 2.0.

- HP Serviceguard A.11.16: Updated with new functionality, defect repairs, and support for future new hardware configurations.

- HP ServiceGuard Manager A.04.00: Allows administrators to create/configure clusters and packages, as well as monitor and manage clusters.

- HP Serviceguard Quorum Server: Supported on both PA-RISC and Itanium®-based systems.

- HP-UX 11i v2 Required Patch Bundle (`BUNDLE11i`): Delivered with this release. Consists of patches for HP-UX 11i v2 that are required to install and update the operating system (OS).

- HP-UX Kernel Configuration tool: TUI changed from earlier version. The `/stand/system/` file enhanced.

- The Peripheral Device Tool (`pdweb`) B11.23.02: TUI introduced.

- Ignite-UX, version B.6.0.*x*: Includes ability to install and recover 11.0, B.11.11, B.11.22, B.11.23 PA-RISC, and B.11.23 Itanium®-based clients from a single Ignite-UX server. Also includes booting of both PA-RISC and Itanium®-based, known as dual boot, from a single media source; and installing one unified PA-RISC/Itanium®-based core HP-UX operating system bundle.

- Improved Database Startup and Shutdown Times: Database startup and shutdown times have been drastically reduced.

- MySQL: Updated with tightened security. Product has been deprecated.

- Obsolescence Product: New product, used in an update when obsolete software on the system needs to be removed.

- OnlineDiag: Includes various bug fixes and enhancements. Support added for new devices.

- Quality Pack Patch Bundle: All patches that were in the March 2004 HP-UX 11i v2 Quality Pack will be superseded by dual-architecture patches, which will be placed in `BUNDLE11i`.

- SAM-NNC: Added support for VLAN, IPoIB, and large send functionality, plus defect fixes.

- Servicecontrol Manager: Contains only minor updates. All functionality remains the same. Product has been deprecated.

- Software Distributor: Updated to a new version to support this new release of HP-UX 11i v2.

- Software Package Builder A.02.00: Updated to incorporate defect fixes, as well as support new features, including the ability to edit multiple PSFs at the same time.

- System Administration Manager (SAM): Updated TUIs in the kernel configuration functional area and the Cards and Devices subarea. Will support shadow mode only for password aging.

- System V Shared Memory: Maximum for the *shmmni* tunable parameter increased.

• Update-UX: Updated to incorporate defect fixes.

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

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

• 16 Terabyte (TB) File System Support: VxFS 3.5 file systems of up to 16 TB now certified.

• Hierarchical File System (HFS): Deprecated. Will be removed in a future release.

• HP CIFS Client A.01.09.02: Provides 64-bit PAM-NTLM libraries support and defect fixes.

• HP CIFS Server 2.2i (A.01.11.01): Provides new LDAP support functionality, as well as other new features and defect fixes.

• Logical Volume Manager (LVM) and MirrorDisk/UX: Performance improved. LVM no longer performs software bad block relocation. Defects fixed.

• Network File System (NFS): New option added to the `umount` command. Compatibility exception noted.

• Network Information Service Plus (NIS+): Deprecated and planned for future obsolescence. Valid modification requests to update NIS+ tables will now fail if the size of the request is larger than 9000 bytes.

• Portable File System (PFS): Obsolete.

• VERITAS File System (VxFS/HP OnlineJFS/JFS) 3.5: File systems of up to 16 TB now certified.

• VERITAS Volume Manager 3.5 for HP-UX (Base): Includes new versions of VEA and SIG Licensing, as well as defect fixes.

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

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

• HP Data Link Provider Interface (DLPI): Includes support for VLAN functionality, TCP Segmentation Offload (TSO or Large Send), InfiniBand technology, and 64-bit MIB, as well as other changes.

• HP Openview Emanate Agent 15.3: Incorporates a defect fix.

• HP-UX LAN Provider: New with this release of HP-UX 11i v2. Client applications can use this Provider to determine 100bt and Gigabit links available on the system and collect information about them.

• HP-UX Mobile IPv6 A.01.01: Offers the same functionality as A.01.00, but delivery method has changed.

• HP-UX Web Server Suite:

— HP-UX Apache-based Web Server 2.0.50.01: Updated as a security, bug fix, and feature release which contains support for Microsoft® FrontPage 2002, more pHP extensions, and numerous version upgrades.

— HP-UX Tomcat-based Servlet Engine 4.1.29.03: Updated with Tomcat version upgraded to 4.1.29; `mod_jk` and related configuration files shipped with HP-UX Apache-based Web Server; and defect fix to the Tomcat Admin application.

— HP-UX Webmin-based Admin 1.070.00.01: Updated as security, bug fix, and full-feature release that contains the numerous enhancements.

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

• Internet Services:

— BIND 9.2.0: Option to enable or disable the Extended DNS (EDNS) option provided.

— BOOTP and DHCP: Both implement a new tag to configure the IP address of the `tftp` server.

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

• LAN Administration Commands: Includes support for IPoIB and VLAN interfaces, along with new command-line options.

• Mozilla Application Suite 1.4.0.01: Contains full Japanese localization as well as other defect fixes and enhancements. Security bulletin posted.

• Netscape Directory Server 6.11: New product for customers of HP-UX 11i v2.

• Network Tracing and Logging (NetTL): Changes include formatting support for IPoIB, Mobile IPv4 extension headers, tunneled IPv6 packets, and Mobile IPv6 packets, as well as new CLI option to support configurable trace buffer timer value.

• Network Transport (ARPA): Changes include Limited Transmit (IPv4 only); support for TCP Segmentation Offload and for IPoIB links; IPv6 router advertisement daemon; Multicast Listener Discovery support for IPv6 (host only); and other changes. Problem and work-around noted: HP-UX sends TCP packets with incorrect window size.

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

September 2004 Release Notes, Chapter 8: "Security"

• HP-UX Host Intrusion Detection System 2.3: Product bundle renamed and restructured to improve product installation and maintenance.

• HP-UX IPFilter A.03.05.10.02: Includes defect fixes and performance enhancements.

• HP-UX Secure Shell A.03.71.000: Contains several new features, including enhanced `ssh_prng_cmds` file for random number generation, new escape character for requesting a pseudo terminal, and support for generating KEX-GEX groups in the `ssh-keygen` file.

• OpenSSL A.00.09.07-d: New to HP-UX 11i v2.

• PAM: 64-bit framework now supported on both PA-RISC and Itanium®-based systems. New PAM module introduced. Defect fixes included.

• PAM-Kerberos v1.23: Supports both Itanium®-based and PA-RISC applications in 32-bit mode and 64-bit mode. The `pam_sm_acct_mgmt()` function returns `PAM_USER_UNKNOWN` instead of `PAM_SUCCESS` when the user is not present in the Kerberos database.

• Security Patch Check 2.0: Now provides update and manual action analysis, whereas prior releases only analyzed patches.

• Shadow Passwords: Now supported by SAM.

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

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

- The `fuser` Command: Performance improved.

- Post/Wait: New. Provides a fast, lightweight synchronization facility for user applications.

- The `ps` command: The default width now set to 128 characters and a default file provided to define the length of the command field.

- The `rc` Shell Script: When a system needs reboot for some reason, messages in the file `/etc/rc.bootmsg` will be displayed before the system is rebooted.

- The `scsimgr` and `scsiscan` Commands: Deprecated. Planned for obsolescence in HP-UX 11i v3.

- The `settune` and `settune_txn` System Calls: Post HP-UX 11i v2, tunables set using these kernel system calls will not be persistent across reboots.

- The `sfd` Daemon: Deprecated. Planned for obsolescence in HP-UX 11i v3.

- The `sysdef` command: Deprecated. Reports incorrect values for some tunable parameters such as *msgmap*, *sema*, and *shmem*.

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

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

- HP aC++ Compiler for Itanium®-Based Systems: No changes except for defect fixes.

- HP aC++ Compiler for PA-RISC Systems: The new `placement delete` feature now supported.

- HP Fortran for HP-UX 2.8.2: Includes performance tuning enhancements.

- HP MLIB 8.6: FFT routines support data sizes of any positive length.

- HP MPI 2.0.1: InfiniBand interconnect on Intel® Itanium® supported.

- HP-UX Buffer Cache Tunable Parameters: All tunables associated to the sizing of the buffer cache (`nbuf`, `bufpages`, `bufcache_max_pct`, `dbc_min_pct`, and `dbc_max_pct`) have been deprecated and will be obsolete in HP-UX 11i v3.

- Java 2 Standard Edition Platform:

  — HP 3D Technology for the Java 2 Standard Edition Platform: Only for Itanium®-based systems. PA-RISC-based systems not supported.

  — HP-UX Software Development Kit and Runtime Environment for the Java 2 Platform Standard Edition: For this release of HP-UX 11i v2, the full SDK as well as the RTE for versions 1.3 and 1.4 are being delivered.

  — Java for HP-UX PA-RISC Add-On C++ Libraries for SDK and RTE: Now included in HP-UX 11i v2 for Java developers on PA-RISC.

  — Java Out-of-Box 2.03: Includes defect fixes.

- Math Library (libm): Current release includes Math Library Cumulative Patch, which contains new functions, performance and accuracy enhancements, and minor defects.

- POSIX Threads: Defect correction applied to Itanium®-based systems to make the thread library, source and relocatable compatible with release HP-UX 11i v1.

- The Software Transition Kit (STK): Available on the Web or Application Release media is a collection of tools and documents designed to help transition HP-UX applications from earlier versions of HP-UX to the latest version of HP-UX on the PA-RISC or the Itanium®-based platform.

- Transition Links: Deprecated. Will become obsolete in post-HP-UX 11i v2 releases.

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

September 2004 Release Notes, Chapter 11: "Internationalization"

- Internationalization Features: Includes defect fixes. No new features beyond those supplied in the initial (October 2003) release of HP-UX 11i v2.

- Deprecated Functionality: Several commands, library routines, and `lp` model files deprecated. Will be removed in next major release of HP-UX.

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

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

- ccNUMA: Additional platforms supported.

- Common Desktop Environment (CDE): X11R6-based Xfree86 `xterm` 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 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.

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

— HP-UX Workload Manager Toolkits updated to version A.01.05. Utilities now use `/opt/perl/bin/perl`; ApacheTK begins supporting Apache 2.*x*; the `cntl_smooth` configuration file keyword now offered; `utilitydc` modified; and other changes.

— The nPartition Provider updated to version B.01.02.00.02 to incorporate several minor defect fixes to improve the overall quality of the product.

— Partition Manager updated to version B.11.23.02.00.02 to incorporate several minor defect fixes, as well as changes to functionality, including checking of the complex for configuration problems, and validation of SSL certificates sent from the CIM server.

• HP WBEM Services for HP-UX updated to version A.01.05.08 to use OpenSSL 0.9.6k.

• Ignite-UX updated to version B.5.2 with several enhancements, including updating the `make_*_recovery` tools.

• MC/ServiceGuard NFS Toolkit updated to version A.11.23.02 to deliver the File Lock Migration enhancement.

• Online Diagnostics (`OnlineDiag`):

— EMS Hardware Monitor added to monitor the operation of the iSCSI Software Initiator. IPMI Event Viewer Web Interface Tool added.

• The Quality Pack Patch Bundle now delivered on the Core OE media as well as the Web.

• Servicecontrol Manager updated to version 3.05 to incorporate defect fixes.

• Software Distributor updated to incorporate defect fixes.

• Software Package Builder updated to version A.01.04 to allow the setting of corequisites and prerequisites attributes using the OR relationship. SPB also now able to detect ambiguous objects.

• Update-UX updated to provide the flexibility to "deselect" bundles through an alternate to the default selections file. Update-UX will also create two backup kernel configurations from the update process.

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

• HP CIFS Client updated to version A.01.09.01 to incorporate a defect fix.

• HP CIFS Server 2.2g updated to version A.01.10 to incorporate fixes and minor enhancements developed since Samba version 2.2.5.

• VERITAS File System 3.5 (HP OnlineJFS 3.5) now enables creation of file systems of up to 8 TB.

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

• HP-UX Apache-based Web Server updated to version v.1.0.10.03 as primarily a security and bug fix release which addresses vulnerabilities and problems.

• HP-UX Tomcat-based Servlet Engine updated to version 1.0.10.01 to correspond with the HP-UX Apache-based Web Server v.1.0.10.03 with Apache 2.0.48. Upgraded `mod_jk` to v1.2.5.

• LAN Commands:

— The `lanadmin` command's hard link, `/usr/bin/landiag`, deprecated.

— The file `/etc/lanscan` deprecated.

— The file `/etc/linkloop` deprecated.

- Mozilla updated to version 1.4.00.01 with full Japanese localization as well as other defect fixes and enhancements. Netscape is no longer included, but can be downloaded at `http://www.hp.com/go/netscape`.

March 2004 Release Notes, Chapter 8: "Security"

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

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

- Topics in this chapter are unchanged for March 2004.

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

- GTK+ Libraries updated to version 1.4.gm.46.4 to support changes to the Operating Environments. No new functionality added.

- HP Message Passing Interface (MPI) updated to version 2.0 with full MPI-2 Standard functionality and other enhancements.

- Perl updated to version 5.8.0 build 806 with several bug fixes and other improvements.

March 2004 Release Notes, Chapter 11: "Internationalization"

- ATOK 8 Japanese input method now deprecated.

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

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

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

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

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

- Always-installed Network Drivers:

    — 100Base-T Driver, `btlan`: Updated to support interrupt migration and OLAR on Itanium®-based platforms.

    — 1000Base-T (Gigabit Ethernet): GigEther-01 supported and IEther-00 introduced. 1024~9000 MTU supported.

    — PCI FDDI: Enhanced to provide FDDI network connectivity for Itanium®-based platforms.

- Mass Storage Drivers:

    — Fibre Channel Tachlite Driver: Updated to support interrupt migration and OLAR.

    — SCSI Drivers: Support limited to PCI cards. New cards A5149A and A5838A supported, with limitations. HVD cards A4800A, A5159A, and A5159B not supported. OLAR of A6828A and A6869A cards supported. Interrupt migration supported.

- Selectable Network Drivers:

    — ATM Networking Solution: Now available on Itanium®-based platforms. Only ATM adapter A5513A supported.

    — HyperFabric: The `/opt/clic/bin/clic_probe` has superseded the `/opt/clic/bin/clic_ping` utility.

    — INTL100: Required for HP Integrity rx2600 server, as well as HP zx6000 workstation. A6792A add-on card not supported on HP-UX 11i v2.

    — Online Addition and Replacement (OLAR): New `olrad` command provides critical resource analysis routines. New `hotplugd` daemon provides Doorbells capability. The `rad` command deprecated.

    — PCI Mux Networking Solution, TermIO-00: Now available on Itanium®-based platforms.

    — PCI Token Ring Networking Solution: Now available Itanium®-based platforms.

- ATI FireGL X1 and ATI FireGL Z1: Provide compatibility with, and performance increase from, ATI FireGL4 card. Appropriate drivers shipped with the products.

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

- Instant Capacity on Demand (iCOD) 6.0: Now always-installed and supported on HP Integrity Superdome, HP Integrity rx7620 and rx8620.

- Pay Per Use 6.0: Available as a selectable product. Supports HP Integrity Superdome, HP Integrity rx7620 and rx8620.

- Technical System Configuration (TechSysConf): TC-OpenSource tools removed. Remaining TC-SysSetup alters kernel configurable parameters, as well as selected system configuration files, for improved system performance.

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

- Compressed Dump: New feature. Speeds up memory dumps.

- Diagnostics:

  — Offline Diagnostic Environment: Supports new hardware platforms, including HP Integrity Superdome, HP Integrity rx2600, rx4640, rx5670, rx8620, rx7620, zx2000.

  — Online Diagnostics (EMS Hardware Monitors and Support Tools Manager): Modified to support current systems releasing on HP-UX 11i v2. I/O tools and monitors modified to support new cards and peripherals.

- Enterprise Cluster Master Toolkit version B.01.08: Supports the Oracle 9i database in MC/ServiceGuard clusters.

- Event Monitoring Service A.04.00: Framework and GUI available as 32-bit native applications on Itanium®-based platforms. HA Monitors available as 32-bit native binaries on Itanium®-based platforms. New command line utility, EMS CLI, available to configure and manage persistent monitoring requests for EMS monitors.

- File Systems Tunable Parameters: HP-UX File Systems now has 13 dynamic tunable parameters available in HP-UX 11i v2. In addition, the $MAXSYMLINKS$ literal traditionally included in the $<sys/param.h>$ header is being deprecated in HP-UX 11i v2 and should not be used by applications. $MAXSYMLINKS$ was defined as the maximum number of symbolic links that may be expanded in a path name. This limit is now a tunable parameter: $fs\_symlinks$.

- GlancePlus Pak C.03.71.23: Incorporates defect repairs and enhancements, including enhancements to OVPA and GlancePlus.

- HP Caliper 3.0: Incorporates enhancements, including full multi-process support, ability to attach to a running process, new report and info modes, and usability improvements.

- HP Partitioning:

  — HP Process Resource Manager version C.02.01.01: Now supports VxVM. Various PRM utilities have wide-column option for better display of group names.

  — HP-UX nPartition Configuration Commands: Management scope of commands extended to remote partitions and complexes. Additional enhancements added.

  — HP-UX Processor Sets: The `psrset` command enhanced to display Locality Domain information. Kernel now supports Real Time Extension (RTE) to processor sets.

  — HP-UX Workload Manager version A.02.01.01: Offers greater functionality and ease of use.

— HP-UX Workload Manager Toolkits version A.01.04.01: Now has a toolkit for BEA WebLogic Server.

— nPartition Provider: New product with HP-UX 11i v2, used by Partition Manager and partition commands to configure and manage both local and remote HP systems that support nPartitions.

— Partition Manager version B.11.23.01.00: Incorporates major enhancements to the user interface, as well as support for Cell Local Memory (CLM).

• HP WBEM Services for HP-UX version A.01.05.05: Supports strong SSL encryption; simultaneous support of both SSL and non-SSL connections; local connections enhanced to use UNIX Domain Sockets; four additional providers added.

• HP-UX Kernel Configuration: The `kcweb` application incorporates changes and new features. The `maxusers` tunable obsoleted. Kernel Configuration (KC) commands replaced by a new set of commands. Changes made in kernel location, boot-time selection, and automatic backup creation.

• HP-UX Peripheral Devices: New tool; replaces the peripheral devices functionality of SAM and introduces two new commands, `pdweb` and `waconf`.

• Ignite-UX version B.5.0: Supports the new HP-UX Service Partition, incorporates enhanced support for dual media recovery, and incorporates enhancements to support new `/stand/system` syntax.

• Interrupt Migration: New feature; can be used to view and modify the interrupt configuration of the system.

• MC/ServiceGuard version A.11.15.00: Updated with new features, including support for VxVM 3.5, Quorum Server 2.0, ServiceGuard Manager 3.0, and IPv6 (with restrictions). Operation with IPFilter requires specific IPFilter rules to ensure proper operation of ServiceGuard clusters.

• MC/ServiceGuard Extension for SAP R/3 version B.03.09: Provides same functionality as B.03.08 for PA-RISC. B.03.09 also provides means to use Secure Shell as a communication method between nodes running mySAP components.

• MC/ServiceGuard NFS Toolkit version A.11.23.01: Enhanced for better performance and easier troubleshooting. NFS-related control functions and variables now in separate NFS-specific control script. Supports VxVM 3.5 and NFS high availability over NFS TCP and NFS UDP.

• MC/ServiceGuard Quorum Server version A.2.0: Runs on both HP-UX and Linux. Supports multiple HP-UX and/or Linux clusters. Can be configured in a package in a cluster.

• MySQL version 3.23: Used instead of NDS by Servicecontrol Manager 3.0 for the repository.

• SAM - Nodal Network Communication: Supports DHCPv6.

• Scalable Boot: Reduces boot time by 5 to 95%, depending on the I/O configuration.

• Servicecontrol Manager version 3.0: Provides new features, including Linux-based central management server, certified HP ProLiant Linux agents, XML file format, and improved user interface and ease-of-use.

• ServiceGuard Extension for RAC version A.11.15.00: Provides new features, including fast detection of Oracle instance crash and rolling upgrade. ServiceGuard Manager will show RAC instances in property sheet.

- ServiceGuard Manager version A.03.00: Provides new features, including availability in five languages, support for clusters on different subnets, ability to display several sessions, and Alerts icon to show the most critical problem.

- Software Distributor: Runs in Intel® Itanium® as a native application. Supports DLKM software packaging.

- Software Package Builder: New product; provides a visual method to create and edit software packages using the HP-UX Software Distributor package format.

- System Administration Manager: Introduces the HP-UX Kernel Configuration and HP-UX Peripheral Devices tools. SAM is available as PA-RISC binaries on HP-UX 11i v2 and requires the Aries translator.

- System-V IPC Kernel Tunable Parameter (`semmap`)(Obsolete): The memory allocation of semaphore sets previously controlled by `semmap` is now done dynamically by the kernel. The `semmap` kernel parameter is no longer tunable.

- System-V IPC Kernel Tunable Parameter (`semmsl`): Minimum value now 1; default value 2048; upper limit remains 10240.

- The `update-ux` Command: New with HP-UX 11i v2. Allows update of the HP-UX operating system from HP-UX 11i v1.6 (11.22) to HP-UX 11i v2 (11.23).

Initial Release Notes, Chapter 5: "Disk and File Management"

- AutoFS: Upgraded to include the features of the SUN ONC AutoFS version 2.3 product, as well as performance enhancements, including on-demand mounting. The system C library, `libc`, changed to improve AutoFS performance.

- Automounter: Obsoleted. AutoFS is the recommended replacement.

- HP CIFS Client version A.01.09: Provides defect fixes and new features, including Kerberos authentication, integration with the system Kerberos cache, and improved interoperability with third-party CIFS servers that do no support older SMB infolevels.

- HP CIFS Server version 2.2e: Based on Samba version 2.2.5. Incorporates new tools and new configuration parameters.

- Logical Volume Manager (LVM): Supports SLVM in configurations of up to 16 nodes. LVM powerfail message changed.

- VERITAS File System (VxFS/HP OnlineJFS/JFS) 3.5: New version contains new and changed features, including new and/or enhanced tunable parameters, enhanced VxFS commands, new I/O error handling policy, new default intent log mode, new default system block size, VxFS system activity reporter, forced unmounts, and more. Enables creation of file systems up to 4 TB (maximum file size is 2 TB).

- VERITAS Volume Manager (VxVM) 3.5: New features include VERITAS Cluster Volume Manager 3.5 for HP-UX (purchased separately); Device Discovery Layer; SIG Licensing Product; and VERITAS Enterprise Administrator. VxVM 3.5 offers significant enhancements over the previous VxVM 3.1, which speed transactions, reduce processing time, and improve bandwidth usage.

Initial Release Notes, Chapter 6: " Internet and Networking"

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

- HP-UX Data Link Provider Interface (DLPI): Includes enhancements to the Streams interface; new third-party interface for non-native Streams drivers; updates to the native Stream driver models; obsolescence of the dump read capability of `lanscan`; status logging for DLPI through `nettl`; and other changes.

- HP-UX Web Server Suite: Includes HP-UX Apache-based Web Server, HP-UX Webmin-based Admin, HP-UX Tomcat-based Servlet Engine, and HP-UX XML Web Server Tools. Each component includes fixes and/or enhancements. Installation changes have been made.

- Internet Services:

  — BIND 9.2.0: New options added. New commands added in `rndc` remote name daemon control program. Supports IXFR and all DNS security features.

  — Dynamic Host Configuration Protocol (DHCP) v6: New features include new message types, multiple IP address request, configuration parameters from a DHCPv6 server, and reconfiguration messages.

  — The `gated` Routing Daemon: `ospfagt` available to obtain OSPF routing information from the `gated` product.

  — The `inetd` Daemon: New option added for use by `inetd` to identify a UDP service as broken or in-loop. New variable added to enable or disable `inetd` during system startup.

  — IPv6 Support for Internet Service Products: BIND 9.2, DHCPv6, `inetd`, name and address resolution resolver routines, R-commands, `telnet`, WU-FTPD 2.6.1, and Secure Internet Services are IPv6 enabled.

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

  — The `named-xfer` Ancillary Program: Obsolete; replaced by the `dig` utility.

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

  — The `rexecd` utility: New option added. Now uses `utmps`/`wtmps`/`btmps` interfaces to log user accounting information.

  — The `rwhod` sever: Updated to use `utmps` interfaces to read user accounting information.

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

  — Sendmail 8.11.1: New options added.

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

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

  — WU-FTPD 2.6.1: The `ftp` daemon audits all login activities irrespective of success/failure login. Logs bad login attempts in `/var/adm/btmps` file. New options added.

- IPv6 Support: IPv6 support by Transport, Internet Services, DCE, DLPI, FDDI, SAM-NNC, libc, HP-UX commands, Desktop (CDE), X11R6-based applications, C2 Audit, EMS, Online Diagnostics, SNMP, NetTL, IPSec, Kerberos Client, ServiceGuard, GlancePlus Pak, HP-UX Secure Shell, HP-UX Web Server Suite, and the Runtime Environment (RTE) for the Java. 2 platform.

- IPv6 Network Transport Software: Features include IPv4/IPv6 dual stock support; enablement of IPv4/IPv6 host and router connections over existing IPv4 network; Ethernet and FDDI links; IPv6 stateless address auto configuration; IPv6 Neighbor Discovery; network configuration and troubleshooting utilities; name service switch, and more.

- IPv6 Support by Common Desktop Environment (CDE): CDE 2.1 supports IPv6, in addition to IPv4.

- IPv6 Support by HP Openview Emanate Agent: Relevant MIB support with the IPv6 subagent, `ipv6agt`. RFCs supported as part of the IPv6 stack.

- IPv6 Support by HP-UX libc and HP-UX Commands: While providing support for IPv6, new solution addresses previous performance and feature scalability problems. New daemon and library introduced to manage user accounting. Various commands modified and options added to support IPv6. Solution speeds response time for users to log in to large server systems which support a large number of users/login sessions.

- Kernel Logging: Deprecated. Will not be supported post-HP-UX 11i v2.

- LAN Commands

  — Local Area Network Administration Program (`lanadmin`): New options added. Now supports third-party LAN drivers.

  — The `linkloop` Command: Now works correctly with Ethernet interfaces set for an MTU size other than 1500. Now supports third-party LAN drivers.

  — The `lanscan` Command: New option added. Can no longer be used to read from crash dumps.

- Network Information Service Plus (NIS+): Deprecated. HP-UX 11i v2 is the last release to support NIS+. HP will introduce a migration strategy to facilitate move from NIS+ to LDAP.

- Network Tracing and Logging (NetTL): Supports tracing and formatting of IPv6 packets. Improved performance. GUI `nettladm` added. Options added.

- Network Transport (ARPA): Support for enhancements of HP-UX DLPI. Enhancements to CKO interfaces between HP-UX transport and DLPI. Removed support for dump reading by `netstat` and `arp`. IPv6 transport supported.

- Networking `libc` APIs `getaddrinfo()` and `getnameinfo()`: Both functions have additional lookup.

- Networking `libc` APIs `getipnodebyname()` and `getipnodebyaddr()`: Deprecated. Both functions not supported post-HP-UX 11i v2. In applications, the APIs `getaddrinfo()` and `getnameinfo()` functions should be used instead.

- The `nslookup` Program: Extended to follow the configured host name resolution algorithm and to query NIS, DNS, and host tables.

- Router Discovery Protocol Daemon (`rdpd`): Obsolete. Functionality has been subsumed in `gated`.

- Web Browsing:

  — Mozilla Application Suite 1.2.1: Added as default browser for HP-UX 11i v2.

  — Netscape 7: Replaces Netscape Communicator 4.79.

Initial Release Notes, Chapter 7: "Security"

- Boot Authentication: Now available on all Standard Systems. Standard Mode Boot Authentication feature can be configured by two parameters.

- Generic Security Service Application Programming Interface (GSS-API): Now delivered as part of HP-UX 11i v2. IPv6 enabled.

- HP-UX Auditing System: Several system call options and event type options are accepted, but will be obsoleted in the next release.

- HP-UX Bastille 2.1: Now included in HP-UX 11i v2. New version adds finer granularity of configuration, improved question flow, better input validation, and new lockdown features.

- HP-UX Host Intrusion Detection System (HIDS) 2.2: Maintenance release with defect fixes and a few enhancements. No new functionality in this version.

- HP-UX IPFilter A.03.05.06: Supports HP-UX 11i v2 on Itanium®-based platforms. Automatically installed with all OEs. Using IPFilter and ServiceGuard requires specific IPFilter rules to ensure proper operation of ServiceGuard clusters.

- HP-UX Secure Shell A.03.10: New product. Based on OpenSSH 3.1p1, provides a secure channel for remote communication by transparently encrypting network traffic. Uses hashing to ensure data integrity and supports several authentication methods.

- Install-Time Security 1.$x.x$: Adds a security step to the install/update process that allows you to configure the Bastille security lockdown engine during system installation.

- Kerberos Client (KRB5-Client): Now delivered as part of HP-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 `ioctls DIOC_CAPACITY`, `DIOC_DESCRIBE`, and `SIOC_CAPACITY`: Applications that use the `DIOC_CAPACITY` or `DIOC_DESCRIBE ioctl` calls should be rebuilt because `capacity_type` and `disk_describe_type` now better represent the size of newer, larger devices. Applications that use the `SIOC_CAPACITY ioctl` for devices that may become large at some point should now use the new `SIOC_STORAGE_CAPACITY ioctl`.

- Usage of `ustat()`, `statfs()`, and `statvfs()`: When old binaries that still use `ustat()`, the various forms of `statfs()`, and the various forms of the 32-bit flavor of `statvfs()`, are exposed to a truly large file system, these calls will return an EOVERFLOW error that the binaries have never seen before, resulting in misinterpretations.

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

- 400K File Descriptors: The maximum supported number of file descriptors per process raised from 60000 (60K) to 400,000 (400K). Precautions apply to this new functionality.

- Adaptive Address Space (AAS) 1.0: Allows you to create binaries that provide you with a large address space and more control over it.

- Aries Binary Translator: Changes include support for MxN threads, support for Itanium®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.

4 Server-Specific Information

What is in This Chapter?

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

Hardware Enablement Patch Bundle

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

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

For help in finding firmware requirements, see "Finding Firmware Information" on page 94.

Summary of Change

With this release of HP-UX 11i v2, the following new servers with the sx2000 chipset have been qualified:

- HP Integrity rx7640-16 server (8 sockets) with 1.6GHz/9MB Intel® Itanium® 2 processor
- HP Integrity rx8640-32 server (16 sockets) with 1.6GHz/9MB Intel® Itanium® 2 processor
- HP Superdome server SD16B (16 sockets) with 1.6GHz/9MB Intel® Itanium® 2 processor
- HP Superdome server SD32B (32 sockets) with 1.6GHz/9MB Intel® Itanium® 2 processor
- HP Superdome server SD64B (64 sockets) with 1.6GHz/9MB Intel® Itanium® 2 processor

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 March 2006 version of this patch bundle, without doing a complete update to the March 2006 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

The "bundle readme" document can be found on the OE media under the `/DOCS/PATCH` directory, or on the IT Resource Center Web site at `http://itrc.hp.com`.

For information on patch management, refer to the *Patch Management User Guide for HP-UX 11.x Systems*, available at `http://www.docs.hp.com/en/oshpux11iv2.html#Patch%20Management`.

Obsolescence

Not applicable.

HP Instant Support Enterprise Edition

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

Summary of Change

ISEE Client has been updated to version A.03.95.043 to incorporate defect fixes. 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 85)
- Selectable Networking Drivers (see page 86)
- Always-Installed Mass Storage Drivers (see page 88)
- Selectable Mass Storage Drivers (see page 91)

Always-Installed Networking Drivers

The following table lists networking drivers that are automatically installed. There are no changes to the always-installed networking drivers in March 2006.

Table 4-1   Always-Installed Networking Drivers

Networking Driver Bundle	Driver	Card Number	Description
`FDDI-00`	`fddi4`	A3739A/B	PCI FDDI card
`FibrChanl-01` and `GigEther-01`	`fcd` and `igelan`	A9782A	PCI-X 2Gb Fibre Channel/1000Base-SX (Fibre) Combination Card
`FibrChanl-01` and `GigEther-01`	`fcd` and `igelan`	A9784A	PCI-X 2Gb Fibre Channel/1000Base-T (Copper) Combination Card
`FibrChanl-01` and `GigEther-01`	`fcd` and `igelan`	AB465A	PCI-X Multifunction 2-Port 2Gb FC / 2-Port 1000Base-T Adapter
`GigEther-00`	`gelan`	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
`HPUXBaseOS`	`btlan`	A3738A	PCI 10/100Base-TX card
`HPUXBaseOS`	`btlan`	A5230A	PCI 10/100Base-TX card for servers
`HPUXBaseOS`	`btlan`	A5506A	PCI 4-port 10/100Base-TX card
`HPUXBaseOS`	`btlan`	A5506B	PCI 4-port 10/100Base-TX card
`HPUXBaseOS`	`btlan`	A5838A	PCI Combination Dual port 10/100Base-TX and Wide Ultra2 SCSI card
`HPUXBaseOS`	`btlan`	B5509BA	PCI 10/100Base-TX card for workstations
`HPUXBaseOS`	`btlan`	J3514A opt #001	HSC 10/100Base-TX 2-port for K-Class and T600 servers
`HPUXBaseOS`	`btlan`	J3514A opt #002	HSC 10/100Base-FX (fiber) 2-port for K-Class and T600 servers

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

Networking Driver Bundle	Driver	Card Number	Description
`HPUXBaseOS`	`btlan`	J3515A	HSC 10/100Base-TX 1-port for C, J workstations and A, D, R-Class servers (except D200)
`HPUXBaseOS`	`btlan`	J3516A opt #001	HSC 10/100Base-TX 2-port for C, J workstations and A, D, R-Class servers (except D200)
`HPUXBaseOS`	`btlan`	J3516A opt #002	HSC 10/100Base-FX (fiber) 2-port for C, J workstations and A, D, R-class servers (except D200)
`HPUXBaseOS`	`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 `HWEnable11i` bundle, which is normally installed by default on the 11i OE media, provides the patches that are required for the installation of these networking bundles. When updating an existing 11i system, you can install the `HWEnable11i` bundle *and* the desired networking bundle from the OE media in the same install session to meet software dependencies.

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

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	clicd	A4919A	PCI HyperFabric
		A4920A	HSC HyperFabric
		A4921A	HSC HyperFabric
		A6092A, A6386A	PCI HyperFabric
TermIO-00	pci_mux0	J3592A, A6748A	PCI MUX (8-port)
		J3593A, A6749A	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.

HyprFabrc-00

HyperFabric is a high-speed network link that runs on various HP systems running HP-UX. HyperFabric supports Hyper Messaging Protocol (HMP) and the IP network protocol stack (TCP/IP/UDP).

Summary of Change

The March 2006 version of HyperFabric supports large user count. Large user count builds on top of Hyper Messaging Protocol (HMP) software which includes support for transparent local failover feature. The number of users supported depends on the number of Card-Pairs configured. For more information, see the *HyperFabric Configuration Guidelines*, available at **http://docs.hp.com/hpux/netcom/index.html#HyperFabric**.

Impact

There are no impacts other than the support of large user count.

Compatibility

Newer versions of MPI will not be certified with HF2.

Performance

HyperFabric provides up to 2.5 Gb/s Full Duplex Bandwidth per card, with latency of <22us for the HF2 Card.

Documentation

For further information, refer to the following documents, available at `http://docs.hp.com/hpux/netcom/index.html#HyperFabric`:

- *HyperFabric Release Notes*
- *HyperFabric Administrator's Guide*
- *HyperFabric Configuration Guidelines*

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	PCI-X Single Port 1Gb/2Gb/4 Gb Fibre Channel Adapter
`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

Table 4-3   Always-Installed Mass Storage Drivers (Continued)

Mass Storage Driver Bundle	Driver	Card Number	Description
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.

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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 to version B.11.23.0603 with disablement of Quick Arbitration and Selection (QAS), significantly reducing the occurrence of any SCSI-related issues seen in a mixed speed disk configuration. Review support documentation for details (see the following "Documentation" section).

Impact

Customers using mixed speed disk configurations may notice a small decrease in overall performance. HP highly recommends not mixing Ultra160 and Ultra320 disks in the same SCSI configuration.

Compatibility

HP highly recommends not mixing Ultra160 and Ultra320 disks in the same SCSI configuration.

Performance

Customers using mixed speed disk configurations may notice a very small decrease in overall performance. HP highly recommends not mixing Ultra160 and Ultra320 disks in the same SCSI configuration.

Documentation

When new cards are available, documentation will be made available at `http://docs.hp.com` (Click **I/O Cards and Networking Software**, then **SCSI Host Bus Adapters**.) Documentation includes the following:

- *HP A7173A PCI-X Dual Channel Ultra320 SCSI Host Bus Adapter Support Guide*
- *HP A7173A PCI-X Dual Channel Ultra320 SCSI Host Bus Adapter Installation Guide*
- *HP-UX Ultra320 SCSI mpt Driver Release Notes - Revision B.11.11.02*
- *HP-UX A7173A PCI-X Dual Channel Ultra320 SCSI Host Bus Adapter Support Matrix*
- *HP A7173A PCI-X Dual Channel Ultra320 SCSI Host Bus Adapter Performance White Paper for HP PA-RISC Servers*

Obsolescence

Not applicable.

USB-00

The USB-00 product, version C.01.03.01, delivers a USB infrastructure and driver package to support keyboards, mice, and HP DVD boot for the HP BladeSystems.

Summary of Change

USB-00, version C.01.03.01, includes various quality improvements from previous releases, a dynamically managed device file system, and USB mass storage encryption support.

Impact

USB-00 delivers a new subsystem for dynamically managing USB device special files. The Device File System is not enabled by default, but you can optionally enable it by referring to product documentation (see the following "Documentation" section).

USB-00 also delivers a utility to encrypt USB mass storage devices, *usbencrypt* (1), that allows the user to control access to a USB device. For more information, please refer to the *usbencrypt* (1) manpage.

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`. For more information please refer to the *HP-UX Device File System User's Guide*, available at `http://docs.hp.com/en/7407/DevFSUsersGuide.pdf`.

Performance

There is no performance impact.

Documentation

For further information, refer to the following documentation:

*   The manpage for USB encryption utility, *usbencrypt* (1)

*   *HP-UX USB Mass Storage Device Encryption User's Guide*, available at
    `http://docs.hp.com/en/7406/UsbEncryptionUsersGuide.pdf`

*   *HP-UX Device File System User's Guide*, available at
    `http://docs.hp.com/en/7407/DevFSUsersGuide.pdf`

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

For March 2006, the `SerialSCSI-00` driver bundle has been updated with quality
improvements. The `SerialSCSI-00` driver bundle was added in December 2005 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.

PCI Error Handling

The PCI Error Handling feature allows an HP-UX system to avoid a Machine Check
Abort (MCA) or a High Priority Machine Check (HPMC) if a PCI error occurs (for
example, a parity error).

Without the PCI Error Handling feature installed, PCI slots are set in hardfail mode. If a
PCI error occurs when a slot is in hardfail mode, an MCA or HPMC will occur; then the
system will crash.

When the PCI Error Handling feature is installed, the PCI slots containing I/O cards
that support PCI Error Handling will be set in softfail mode. If a PCI error occurs when
a slot is in softfail mode, the slot will be isolated from further I/O, the corresponding
device driver will report the error, and the driver will be suspended. The `olrad` command
and the Attention Button can be used to recover, restoring the slot, card, and driver to a
usable state.

The PCI Error Handling feature is only supported on certain I/O card drivers and a
limited number of systems. A firmware update may be required. For more information
about supported drivers and systems, as well as firmware requirements, see the *PCI
Error Handling Product Note* (HP Manufacturing Part Number 5991-4793), available at
`http://docs.hp.com` in the "High Availability" section.

Summary of Change

The PCI Error Handling feature is now available on the Software Pack (SPK) media for
HP-UX 11i v2 March 2006. For more information about SPK, see "Software Pack
(Optional HP-UX 11i v2 Core Enhancements)" on page 27.

Impact

This feature allows your systems to continue running even when a PCI error occurs.

Compatibility

This feature is optional. You must be aware that with this feature, a PCI error will no longer cause the system to fail. There may be instances when a system failure is desirable in order to force a failover to another system.

Performance

This feature has no measurable performance impact.

Documentation

For further information, refer to the following documentation, available at `http://docs.hp.com` in the "High Availability" section:

• *PCI Error Handling Product Note* (Manufacturing Part Number 5991-4793)

Obsolescence

Not applicable.

Supported Systems

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

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

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

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

• HP Servers and Enterprise Systems

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

• HP Workstations

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

• Enterprise Servers, Workstations and Systems Hardware Documentation

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

PA-RISC Servers

- HP 9000 rp24x0 and rp34x0 series

- HP 9000 rp44x0 and rp54x0 series

- HP 9000 rp74x0 and rp84x0 series

- HP 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 rx76x0/rx86x0 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 **patch/firmware database**.

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

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

5 General System Administration

What is in This Chapter?

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

- Distributed Systems Administration Utilities (see page 96)
- Enterprise Cluster Master Toolkit (see page 97)
- Feature Enablement Patch Bundle (FEATURE11i) (see page 98)
- HP Partitioning (see page 99)
  - HP Global Workload Manager (see page 99)
  - HP Process Resource Manager (see page 101)
  - HP-UX Virtual Partitions (see page 102)
  - HP-UX Workload Manager (see page 104)
  - HP-UX Workload Manager Toolkits (see page 105)
  - PRM Libraries (see page 106)
- HP Serviceguard (see page 107)
- HP Serviceguard NFS Toolkit (see page 109)
- HP System Management Homepage (see page 110)
- HP Systems Insight Manager (see page 111)
- HP WBEM Services for HP-UX (see page 112)
- HP-UX Accounts for Users and Groups (see page 113)
- HP-UX WBEM Fibre Channel Provider (see page 115)
- HP-UX WBEM LVM Provider (see page 115)
- HP-UX WBEM SCSI Provider (see page 116)
- Ignite-UX (see page 117)
- Online Diagnostics (see page 118)
  - OnlineDiag Bundle (see page 119)
  - SysFaultMgmt Bundle (see page 120)
- Quality Pack Patch Bundle (see page 122)
- Software Distributor (see page 123)
- Update-UX (see page 124)
- Utilization Provider (see page 125)

Distributed Systems Administration Utilities

Distributed Systems Administration Utilities (DSAU) is a new set of utilities for HP-UX that improve the manageability of distributed systems and Serviceguard[1] clusters. 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.

- 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 has been updated to incorporate defect fixes. As of the March 2006 release, DSAU is delivered as a default-installed product on all OEs, including the TCOE.

Impact

There is no impact, beyond improved quality.

Compatibility

There are no known compatibility issues.

Performance

There are no known performance issues.

Documentation

For further information, refer to *Managing Systems and Workgroups: A Guide for HP-UX System Administrators*, available at
`http://docs.hp.com/en/oshpux11iv2.html#System%20Administration`.

In addition, refer to the *Distributed Systems Administration Utilities V1.0 Release Notes for HP-UX 11iV2 December 2005*, available at
`http://docs.hp.com/en/T2786-9002/index.html`.

You can also consult the manpages for the following commands:

- `csshsetup`
- `csync_wizard`
- `clog_wizard`
- `clog`
- `cfagent`
- `cfenvd`

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1. See also "HP Serviceguard" on page 107.

- `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

The Enterprise Cluster Master Toolkit (ECMT) is a set of templates and scripts that allow you to configure Serviceguard[1] 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 of Change

ECMT version B.03.00 March 2006 includes support for the VERITAS Cluster File System (CFS) in selected HP Serviceguard Storage Management Suite bundles.[2]

As previously documented in December 2005, ECMT version B.03.00 includes the following:

- Support for Oracle 9i and 10g with CFS in a Serviceguard A.11.l7 environment

- Support for Oracle 10g on SLVM and Cluster Volume Manager (CVM) version 3.5 in the same configuration as with Serviceguard version A.11.16 and later

- Fixes to the ECM Oracle Toolkit

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1. See also "HP Serviceguard" on page 107.
2. For more information about HP Serviceguard Storage Management Suite, go to `http://docs.hp.com` -> High Availability -> Serviceguard Storage Management Suite.

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 *Enterprise Cluster Master Toolkit Version B.03.00 Release Notes*, available at `http://docs/hp/com/hpux/ha`.

Obsolescence

Not applicable.

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 March 2006 release, the `FEATURE11i` bundle consists of all its previous patches, plus new patches required for VERITAS and Infiniband.

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

The "bundle readme" document can be found on the OE media under the `/DOCS/PATCH` directory, or on the IT Resource Center Web site at `http://itrc.hp.com`.

For information on patch management, refer to the *Patch Management User Guide for HP-UX 11.x Systems*, available at `http://www.docs.hp.com/en/oshpux11iv2.html#Patch%20Management`.

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 several of these solutions are described in the following sub-sections:

- HP Global Workload Manager (see page 99)
- HP Process Resource Manager (see page 101)
- HP-UX Virtual Partitions (see page 102)
- HP-UX Workload Manager (see page 104)
- HP-UX Workload Manager Toolkits (see page 105)
- PRM Libraries (see page 106)

HP Global Workload Manager

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

gWLM A.01.01.x has three components:

- Central Management Server, or CMS (T2412AA)

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

  _____
  1. See also "HP Systems Insight Manager" on page 111.

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

- 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. This license is available from the Application Release media.

Summary of Change

gWLM A.01.01.02 CMS provides the following changes and new features:

- gWLM now assumes a constant size for each shared resource domain
- License agreement is displayed when you first run the gWLM agent
- gWLM history truncation now deletes configuration data as well as historical data
- HP-UX systems running the gWLM agent only need the JRE[1]

Fixes include:

- The CMS daemon is more robust
- CMS memory issue resolved
- Improved performance of report generation
- Restoration of an SRD is more robust
- Hostname comparisons are now case-insensitive
- Removed extra save on agent restart
- Updated the open source files
- Message catalog interoperability restored
- Fixed owner and execution issues for a number of binary and library files
- The uninstall now stops the CMS process

Impact

gWLM A.01.01.02 CMS is a more robust product.

You can no longer manually adjust CPU resources on systems managed by gWLM.

---

1. See also "JDK, JRE, and Plug-In for HP-UX for the Java Platform" on page 144.

Compatibility

There are no known compatibility issues.

Performance

gWLM improves performance system utilization when properly configured.

Documentation

For further information, refer to the following:

- Manpages:

    — `/opt/gwlm/man/man1m.Z/gwlm.1m`
    — `/opt/gwlm/man/man1m.Z/gwlmcmsd.1m`
    — `/opt/gwlm/man/man1m.Z/gwlminitconfig.1m`
    — `/opt/gwlm/man/man1m.Z/gwlmplace.1m`
    — `/opt/gwlm/man/man1m.Z/gwlmreport.1m`
    — `/opt/gwlm/man/man1m.Z/gwlmsend.1m`
    — `/opt/gwlm/man/man1m.Z/gwlmsslconfig.1m`
    — `/opt/gwlm/man/man4.Z/gwlmxml.4`
    — `/opt/gwlm/man/man5.Z/gwlm.5`

- Web site:

    — `http://www.hp.com/go/gwlm`

- Documents (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.01.01.02 Release and Installation Notes for HP-UX 11i v1,
      HP-UX 11i v2, and Linux*

Obsolescence

Not applicable.

HP Process Resource Manager

HP Process Resource Manager (PRM) C.03.01 provides an efficient and flexible way to
manage resource allocation at times of peak system load. It gives the system
administrator the ability to group users or processes together and guarantee each group
minimum amounts of the total CPU, real memory, and disk bandwidth available.

Summary of Change

PRM has been updated to version C.03.01 with the following changes:

- Can now control shared memory

- Works inside HP Integrity Virtual Machines

- Greater flexibility in wildcarding

Previously, if you used wildcards in a filename in an application record, you could not use alternate names in that record. Now, you can have alternate names in that case. You can even use wildcards when specifying those alternate names.

- User-space memory manager `prm0d` has been removed

  The obsolete `prm0d` memory manager has been removed. The more robust `prm2d` memory manager is now the only memory manager.

Impact

There are no impacts other than those listed previously.

Compatibility

There are no known compatibility issues.

Performance

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

Documentation

For further information, refer to the following:

- Manpages:

  — The *prm* (5) manpage provides an overview of PRM and points to all the other manpages.

- Web sites:

  — `http://www.hp.com/go/prm` (the "Information Library" provides white papers)

- Documents (available at `http://docs.hp.com/hpux/ha/index.html#Process%20Resource%20Manager`):

  — *HP Process Resource Manager User's Guide*

  — *HP PRM Version C.03.01 Release Notes for HP-UX 11i v1 and HP-UX 11i v2*

Obsolescence

Not applicable.

HP-UX Virtual Partitions

HP-UX Virtual Partitions (vPars) A.04.02 enables multiple instances of a selected HP-UX 11i v2 OE to run simultaneously on one server or within one nPartition, with each OE instance hosting its own set of applications in an isolated environment.

When vPars A.04.02 is available, it can be purchased at the HP-UX Virtual Partitions (T1335BC) Web site at
`http://h20293.www2.hp.com/portal/swdepot/displayProductInfo.do?productNumber=T1335BC.`

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

NOTE   Please note that upgrading to HP-UX 11i v2 May 2005 or a more recent HP-UX 11i v2 update release is required for the installation of vPars.

Summary of Change

vPars A.04.02 provides the following:

- Flexible administration capabilities
- Tape device support on PA-RISC servers
- DRD integration (Dynamic Root Disk)
- Additional CPU support
- Customer-requested fixes

For detailed information, please see the *HP-UX Virtual Partitions Release Notes (A.04.02)*, available at `http://docs.hp.com/en/hpux11iv2.html#Virtual%20Partitions`.

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 vPars documents available at `http://docs.hp.com/hpux/os/11i/index.html#Virtual%20Partitions`.

In addition, see the following site at the Software Depot: `http://h20293.www2.hp.com/portal/swdepot/displayProductInfo.do?productNumber=T1335BC`

Obsolescence

Not applicable.

HP-UX Workload Manager

HP-UX Workload Manager (WLM) A.03.01 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 (vPars),[1] nPartitions, Processor Sets (PSETs), and HP Process Resource Manager (PRM).[2]

Summary of Change

WLM has been updated to version A.03.01 with the following changes:

- No longer requires PRM to be installed (without PRM, WLM can manage nPartitions and virtual partitions)
- Process maps, which allow you to define your own criteria for placing processes in workload groups rather than using WLM's default criteria (apps, users, or scomp records)
- Extended shares that allow for more precise allocations as well as smaller minimum allocations
- Extended groups, which allow you to define up to 256 workload groups (patch `PHKL_32518` is required and can be obtained at the HP IT Resource Center at `http://itrc.hp.com`)
- Can now manage PSETs inside virtual partitions (vPars 4.*x* or later required) and nPartitions (HP Instant Capacity v7 or later required)
- Works inside HP Integrity Virtual Machines
- Additional metric information is available through EMS
- The `wlm_watch.cgi` script provides `wlmd -C` and `wlminfo proc` data
- Integration with HP Pay per use v7
- Enhanced memory management

Impact

The changes in this release have the following impacts:

- More flexibility in process placement
- More workload groups
- More management combinations

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.

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1. See also "HP-UX Virtual Partitions" on page 102.
2. See also "HP Process Resource Manager" on page 101.

Documentation

For further information, refer to the following:

- Manpages:

  — The *wlm* (5) manpage provides a list of all the manpages in its SEE ALSO section.

- Web sites:

  — `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.03.01 Release Notes for HP-UX 11i v1 and HP-UX 11i v2*

Obsolescence

Not applicable.

HP-UX Workload Manager Toolkits

The Workload Manager Toolkits (WLMTK) product version A.01.09 enhances functionality provided by HP-UX Workload Manager (WLM)[1] and simplifies the integration of various products with WLM. These products include Apache, Oracle database instances, SAP, SAS, SNMP, and WebLogic.

Summary of Change

WLMTK has been updated to version A.01.09 with an SAP Toolkit to simplify integration between SAP and WLM.

Impact

There is no impact other than that 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:

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1. See "HP-UX Workload Manager" on page 104.

— The *wlmtk* (5) manpage provides an overview of the toolkits and lists all the other manpages.

• Web sites:

— `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 Toolkits User's Guide*

— *HP-UX Workload Manager Toolkits Version A.01.09 Release Notes for HP-UX 11.0, HP-UX 11i v1, and HP-UX 11i v2*

Obsolescence

Not applicable.

PRM Libraries

The PRM Libraries (version C.03.01) contains only the PRM kernel fileset, `PRM-Sw-Krn`.

Summary of Change

The `PRM-Sw-Krn` fileset has been updated to version C.01.04 to incorporate defect fixes.

Impact

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

Compatibility

There are no known compatibility issues.

Performance

There are no known performance issues.

Documentation

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

• *HP Process Resource Manager User's Guide*

• *HP PRM Version C.03.01 Release Notes for HP-UX 11i v1 and HP-UX 11i v2*

Also see "HP Process Resource Manager" on page 101.

Obsolescence

Not applicable.

HP Serviceguard

HP Serviceguard is a high availability software product for protecting mission critical applications from a wide variety of hardware and software failures. 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] Product T1905BA-A.11.17 includes the Serviceguard software and license. The documentation is product T1906BA-A.11.17.

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`.

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

Summary of Change

Serviceguard version A.11.17 includes support for the VERITAS Cluster File System (CFS) in selected HP Serviceguard Storage Management Suite bundles.

As previously documented in December 2005, HP Serviceguard version A.11.17 includes 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*.

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

- HP Fabric Clustering System for InfiniBand[1] 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:

    — 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:

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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 96.

- *Managing Serviceguard User's Guide*

- *Serviceguard A.11.17 Release Notes*

- *Serviceguard Manager A.05.00 Release Notes*

- *Quorum Server Release Notes*

Obsolescence

Current and earlier versions of Serviceguard on HP-UX support using a serial line (RS232) as an alternate heartbeat in some configurations, but future Serviceguard and HP-UX releases will not: Serviceguard A.11.17 on HP-UX 11i v2 and A.11.16 on HP-UX 11i v1 are the last versions that will support RS232 for heartbeat messaging. Instead, a minimum configuration will need two network interface cards for the heartbeat in all cases, using one of the following configurations:

- two heartbeats subnets; or

- one heartbeat subnet with a standby

To provide the required redundancy for both networking and mass storage connectivity on servers with fewer than three I/O slots, you may need to use multifunction I/O cards that contain both networking and mass storage ports.

HP Serviceguard NFS Toolkit

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

Summary of Change

- HP Serviceguard NFS Toolkit version A.11.23.05 includes a fix for a problem with `rpc.statd` failing to restart when a package is restarted.

- HP Serviceguard NFS Toolkit documentation has been updated to include information about support for the Veritas Cluster Filesystem (CFS) and integration with Serviceguard version A.11.17.

Impact

For more information about the defect fix, refer to the *Serviceguard NFS Toolkit A.11.11.06 and A.11.23.05 Release Notes*, available at
`http://docs.hp.com/hpux/ha/index.html#Highly%20Available%20NFS`.

Compatibility

There are no known compatibility issues.

Performance

There are no known performance issues.

Documentation

For more information, refer to the following documents:

- *Serviceguard NFS Toolkit A.11.11.06 and A.11.23.05 Administrator's Guide*
- *Serviceguard NFS Toolkit A.11.11.06 and A.11.23.05 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

Besides numerous defect fixes, version A.2.2.2 of HP System Management Homepage for HP-UX introduces support of the following:

- Event management providing WBEM event subscription and local system event monitoring
- WBEM-based property pages for hardware attributes and status

Impact

There is no significant change other than support of the features listed previously.

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 the product. In addition, 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 Systems Insight Manager 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 with the following:

- Added support for integration with HP Storage Essentials Enterprise Edition.

- New version of HP SIM integration with HP ProLiant Essentials Virtual Machine Management Pack (VMM) 2.0.1

  In this new version, all Virtual Machine Management Pack functions are integrated into the HP SIM menus, leveraging HP SIM discovery, identification, event notification and handling; role-based access to specific Virtual Machine (VM) hosts; scheduling of tasks (for example, VM backups); and group-based actions.

- New version of HP ProLiant Essentials Server Migration Pack (SMP) 2.0.1

  All Server Migration Pack functions are integrated into HP SIM menus, leveraging HP SIM discovery and identification for source and target platforms and the HP SIM scheduling mechanism for scheduling migrations.

- Numerous bug fixes, please refer to the HP SIM README for a list.

Impact

There are no impacts other than those previously listed.

Compatibility

For a list of operating systems supported by HP SIM version 5.0, see the HP SIM product-specific documentation.

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

Summary of Change

HP WBEM Services for HP-UX has been updated to version A.02.00.09 to incorporate defect fixes. For more information, see the *HP WBEM Services Version A.02.00 Release Notes*, available at `http://www.docs.hp.com/hpux/netsys/index.html`

Impact

There is no significant change.

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 packages with the product and are placed in the directory `/opt/wbem/share/man`.

- The WBEM Services Web site is at `http://hp.com/go/wbem`.

- The following documents are available at `http://www.docs.hp.com/hpux/netsys/index.html`:

  — *HP WBEM Services for HP-UX and Linux System Administrator's Guide*

  — *HP WBEM Services Version A.02.00 Release Notes* (HP-UX 11i v1, HP-UX 11i v2, Linux)

Obsolescence

Not applicable.

HP-UX Accounts for Users and Groups

The HP-UX Accounts for Users and Groups tool (`ugweb`) allows you to manage local user accounts, NIS user accounts, and group accounts. You can manage 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]

Summary of Change

The HP-UX Accounts for Users and Groups tool has been updated to incorporate defect fixes.

Impact

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

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1. See also "HP-UX Security Attributes Configuration" on page 137.
2. See also "HP System Management Homepage" on page 110.
3. See also "HP Systems Insight Manager" on page 111.

HP-UX WBEM Fibre Channel Provider

The HP-UX WBEM Fibre Channel Provider is the HP-UX WBEM Services provider for Fibre Channel HBAs on the system. This component makes available various attributes related to 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

The HP-UX WBEM Fibre Channel Provider has been updated to version 11.23.0603.02 to incorporate defect fixes. There is no new functionality.

Impact

There are no impacts.

Compatibility

There are no known compatibility issues.

Performance

There are no known performance issues.

Documentation

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

Obsolescence

Not applicable.

HP-UX WBEM LVM Provider

The HP-UX WBEM LVM Provider (`LVMProvider`) 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.

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1. See also "HP WBEM Services for HP-UX" on page 112.

The LVM Provider is only used through a WBEM interface. It is not invoked directly by the user. It is a read-only provider. The LVM Provider is also available for download at HP Software Depot at `http://hp.com/go/softwaredepot`.

Summary of Change

HP-UX WBEM LVM Provider has been updated to version 11.23.005 to incorporate defect fixes.

Impact

There are no impacts.

Compatibility

There are no known compatibility issues.

Performance

There are no known performance issues.

Documentation

Complete information is in the LVM Provider product data sheet, 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 SCSI 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

HP-UX WBEM SCSI Provider has been updated to version 11.23.010 to incorporate defect fixes. There is no new functionality.

Impact

There are no impacts.

Compatibility

There are no known compatibility issues.

Performance

There are no known performance issues.

Documentation

Complete information is in the SCSI provider product data sheet, installed at `/opt/scsiprovider/doc/SCSIDataSheet.pdf`

Obsolescence

Not applicable.

Ignite-UX

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

- install HP-UX 11.0 and 11i v1 (B.11.11) 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.

Summary of Change

Ignite-UX version C.6.6.x delivers the following:

- Defect fix
- Security improvements

NOTE	In the December 2005 release of HP-UX 11i v2, Ignite-UX was available only on the Application Release (AR) DVD. It was not part of the December 2005 Operating Environments (OEs). As of March 2006, it is available as a selectable product in the OEs as well as the AR.
	For information about the changes included in the previous version of Ignite-UX, version C.6.5.*x*, see the *HP-UX 11i Version 2 December 2005 Release Notes*, available at `http://www.docs.hp.com/hpux/os/11iV2/`.
	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://docs.hp.com/en/IUX/`.

The *Ignite-UX Administration Guide*, Edition 22 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.

Online Diagnostics

The diagnostics software that is installed with HP-UX 11i v2 consists of the following product bundles:

- OnlineDiag Bundle (see page 119)

• SysFaultMgmt Bundle (see page 120)

These bundles provide many tools to help verify, troubleshoot, and monitor PA-RISC and Itanium®-based system hardware such as CPUs, memory, interface cards, mass storage, and other devices.

To ensure the reliability of your computer system, HP highly recommends that you install the `OnlineDiag` and `SysFaultMgmt` bundles with HP-UX 11i v2. Both bundles are installed by default with any HP-UX 11i v2 Operating Environment.

OnlineDiag Bundle

The `OnlineDiag` bundle delivers the following tools:

• EMS Hardware Monitors

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

• Support Tools Manager (STM)

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

Summary of Change

STM and EMS Hardware Monitors are supported on the following HP servers:

• HP Integrity rx1620-2 1-socket server with new Itanium®-based processor

• HP Integrity rx2620-4 2-socket server with new Itanium®-based processors

• HP Integrity rx4640-8 4-socket server with new Itanium®-based processors

• HP Integrity rx7640-16 server (8 sockets) with 1.6GHz/9MB Itanium®-based processors

• HP Integrity rx8640-32 server (16 sockets) with 1.6GHz/9MB Itanium®-based processors

• HP Superdome server SD16B (16 sockets) with 1.6GHz/9MB Itanium®-based processors

• HP Superdome server SD32B (32 sockets) with 1.6GHz/9MB Itanium®-based processors

• HP Superdome server SD64B (64 sockets) with 1.6GHz/9MB Itanium®-based processors

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*

  — *STM Online Help*

  — *STM Overview*

  — *STM Tutorial*

Obsolescence

As of May 2005 (HP-UX 11i v2) and September 2005 (HP-UX 11i v1), tape drives are no longer supported.

SysFaultMgmt Bundle

The `SysFaultMgmt` bundle includes the System Fault Management (SFM) software, which delivers the following tools:

- SFM Providers

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

•   EVWEB

    SFM includes EVWEB, which can be used to view and administer WBEM indications generated on the HP-UX 11i v2 system.

Summary of Change

•   As of the March 2006 release, SFM is delivered on the Operating Environments.

•   Currently, SFM is supported on the following platforms:

    —   PA-RISC servers

        —   rp3410, rp3440

        —   rp4410, rp4440

        —   rp7410, rp7420

        —   rp8400, rp8420

        —   SD16, SD32, SD64

        —   SD16A, SD32A, SD64A

        —   SD16B, SD32B, SD64B

        —   A180, A180C, A400-44, A400-6x, A500-7x

        —   L1000-36, L1500-7x, L1500-8x, L2000-36, L3000-6x, L3000-7x, L3000-8x

    —   Itanium®-based Servers

        —   cx2600, cx2620

        —   rx1600, rx1620-2

        —   rx2600, rx2620, rx2620-2

        —   rx3600

        —   rx4640

        —   rx5670

        —   rx6600

        —   rx7620, rx7640

        —   rx8620, rx8640

        —   SD16A, SD32A, SD64A

        —   SD16B, SD32B, SD64B

        —   BL60p

        —   Integrity Virtual Machine

•   In September 2004, a version of SFM with minimal features was released on the Web. That version included the following providers:

    —   CPU Instance Provider

    —   Memory Instance Provider

    —   EMS Wrapper Provider

With HP-UX 11i v2 March 2006, the following new providers are also included:

— Filter Metadata (FMD) Provider

— Environmental Provider

• Included in this release is EVWEB, a tool that you can use to view and administer WBEM events generated on an HP-UX 11i v2 system.

Impact

You can now monitor the health of supported HP servers in the WBEM environment and receive information about hardware such as memory, CPU, power supplies, and cooling devices.

Compatibility

There are no known compatibility issues.

Performance

There are no known performance issues.

Documentation

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

• *System Fault Management User's Guide*

• *System Fault Management Release Notes*

• *System Fault Management Frequently Asked Questions (FAQs)*

• *System Fault Management Provider Data Sheets*

Obsolescence

Not applicable.

Quality Pack Patch Bundle

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

Summary of Change

In March 2004, the first ever Quality Pack (QPK) patch bundle for HP-UX 11i v2 (B.11.23) was delivered. In September 2004, HP-UX 11i v2 was updated to support both PA-RISC and Itanium®-based systems, as opposed to the initial release of HP-UX 11i v2,

which only supported Itanium®-based systems. HP-UX 11i v2 September 2004 was delivered via updated 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 March 2006 HP-UX 11i v2 Quality Pack is a superset of the December 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 March 2006 version of the Quality Pack without doing a complete update to the March 2006 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 "bundle readme" document can be found on the OE media under the `/DOCS/PATCH` directory, or on the IT Resource Center Web site at **http://itrc.hp.com**.

For information on patch management, refer to the *Patch Management User Guide for HP-UX 11.x Systems*, available at
http://www.docs.hp.com/en/oshpux11iv2.html#Patch%20Management.

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. For details, refer to the SD Web site at `http://www.docs.hp.com/en/SD/`

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.

Update-UX

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

Summary of Change

There are no new features or functionality in `update-ux`. Update-UX 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:

- 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

As of the December 2005 release of HP-UX 11i v2, Update-UX no longer supports update from HP-UX 11i v1.6 (B.11.22) to HP-UX 11i v2 December 2005 or later releases.

Utilization Provider

The Utilization Provider version A.01.01 is a lightweight daemon (`utild`) that records system-utilization data on a 5-minute interval. System-utilization data includes CPU, memory, disk, and network. This product also includes a WBEM provider for access to the utilization data.

Summary of Change

The `UtilProvider` bundle contains defect fixes which enable utilization data to be more reliable for resource partitions and systems that contain more than 255 active disks.

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, which will be available via special media release, 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

Not applicable.

6 Disk and File Management

What is in This Chapter?

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

- HP CIFS Server (see page 128)
- VERITAS File System (Base-VXFS and HP OnlineJFS) (see page 129)

HP CIFS Server

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

Summary of Change

HP CIFS Server 3.0d (version A.02.02) is included on the HP-UX 11i v2 March 2006 release.

HP CIFS Server 3.0d version A.02.02 is based on Samba 3.0.14a. It delivers fixes and functionality from the new Samba base version while maintaining all previously supported HP-specific fixes and enhancements. HP CIFS Server 3.0d version A.02.02 provides the following enhancements:

- Provides `idmap_rid` support. The `idmap_rid` facility with `winbind` provides a unique mapping of Windows SIDs to local UNIX UIDs and GIDs throughout a domain without requiring an LDAP directory.

- Provides support for publishing printers in an MS Windows 2000/2003 ADS domain. Publishing printers makes it easy for clients to find printers and download printer drivers.

- Changes some supported `smb.conf` configuration parameters in this release.

- Provides disk quota support for NFS mounted directories exported as shares.

Impact

HP CIFS Server 3.0d (version A.02.02) delivers fixes and the enhancements previously listed.

Compatibility

There will be no compatibility impact.

Performance

The implementation of HP CIFS Server 3.0d (version A.02.02) does not degrade performance.

Documentation

For more information, refer to the following documentation:

- 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` (navigate to **CIFS**):

  — *HP CIFS Server 3.0d Administrator's Guide Version A.02.02* (part number
  B8725-90093)

  — *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)

  — *HP CIFS Server 3.0d Release Note Version A.02.02* (part number B8725-90094)

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 March 2006 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 and HP OnlineJFS 4.1 are both selectable. For more information about
installation, see the *HP-UX 11i v2 Installation and Update Guide* for March 2006,
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

HP OnlineJFS v1.4 is now "customer-selectable" instead of "default-installed" as in the
previous release.

Impact

HP OnlineJFS 4.1 will no longer be installed by default. If you want to install the product, you can select it during installation of an Operating Environment.

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.

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.

7 Internet and Networking

What is in This Chapter?

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

- Mozilla Web Browser (see page 132)
- Red Hat Directory Server for HP-UX (see page 133)

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.

The bundles in the suite are as follows:

- `MOZILLA` - **Mozilla**
- `MOZILLAsrc` - **Mozilla Source**
- `B6848BA` - **GTK+ Runtime Libraries**

Summary of Change

Mozilla version 1.7.12.01 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 1.7.11.00.

Impact

Mozilla version 1.7.12.01 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 `http://www.hp.com/go/mozilla`.

Obsolescence

HP will release new versions of Mozilla for HP-UX periodically. The HP Mozilla Web site (`http://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.

Red Hat Directory Server for HP-UX

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

Summary of Change

Red Hat Directory Server for HP-UX has been added to HP-UX 11i v2 starting with version 7.1. Red Hat Directory Server for HP-UX B.07.10.10 is a 64-bit version of Directory Server.

Red Hat Directory Server B.07.10.10 for HP-UX contains all features delivered with version 7.0 (available with HP-UX 11i v1), as well as the following new features:

- Windows User Synchronization

  This feature synchronizes changes in groups, user entries, attributes, and passwords between Red Hat Directory Server and Microsoft Active Directory and Windows NT4 Server in a process similar to replication.

- Get Effective Rights Control

  Directory Server 7.1 allows an LDAP client to request the access control permissions set on each attribute within an entry, allowing administrators to find and control the access rights set on an individual entry.

- Wide-Area Network Replication

  Directory Server 7.1 achieves much higher performance over high-delay network paths by not waiting for acknowledgements before sending updates, allowing more changes to be relayed more quickly.

- Fractional Replication

  Directory Server 7.1 introduces fractional replication, a way of replicating a database without replicating all information in it. This feature allows an administrator to select a set of attributes that will not be replicated.

- Password Change Extended Operation

  This allows users to change their passwords using a suitable client, according to industry standards.

- Filesystem Replica Initialization

  Directory Server 7.1 adds the capability to initialize a replica using the database files from the supplier server, avoiding the need to rebuild the consumer database, and can be done at the speed of the raw network between the two servers by transferring the files.

Impact

The Red Hat Directory Server B.07.10.10 for HP-UX provides the new features previously listed.

Compatibility

There are no known compatibility issues.

Performance

Red Hat Directory Server B.07.10.10 for HP-UX improves performance over high-delay network paths by not waiting for acknowledgements before sending updates, allowing more changes to be relayed more quickly. Red Hat Directory Server 7.1 also adds the capability to initialize a replica using the database files from the supplier server without the need to rebuild the consumer database. This feature improves performance specially for the servers containing large amount of data.

Documentation

For further information, refer to the following documents, available at `http://docs.hp.com/hpux/internet` (click **Netscape Directory Server/Red Hat Directory Server**):

- *Red Hat Directory Server B.07.10.10 for HP-UX Release Notes and Supplemental Instructions*
- *Red Hat Directory Server 7.1 Installation Guide*
- *Red Hat Directory Server 7.1 Configuration, Command, and File Reference*
- *Red Hat Directory Server 7.1 Deployment Guide*
- *Red Hat Directory Server 7.1 Administrator's Guide*
- *Red Hat Directory Server 7.1 Schema Reference*
- *Red Hat Directory Server 7.1 Plug-In Programmer's Guide*
- *Red Hat Directory Server 7.1 Gateway Customization Guide*

Obsolescence

Not applicable.

8 Security

What is in This Chapter?

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

- HP-UX Host Intrusion Detection System (see page 136)
- HP-UX Security Attributes Configuration (see page 137)
- OpenSSL (see page 138)

HP-UX Host Intrusion Detection System

HP-UX Host Intrusion Detection System (HIDS) Release 4.0 is a host-based security product for HP computers running HP-UX 11i. HP-UX HIDS Release 4.0 enables security administrators to proactively monitor, detect, and respond to attacks targeted at specific hosts. There are many types of attacks that can bypass network-based detection systems. HP-UX HIDS Release 4.0 complements existing network-based security mechanisms and enhances enterprise security.

Summary of Change

HP-UX HIDS version 4.0 supports the following new features and enhancements:

- Reducing alert volume by aggregation - HIDS supports a new feature called alert aggregation that can significantly reduce the alert volume for a monitored system. When enabled, alerts that are generated by a process or a group of related processes are aggregated until the processes terminate or a certain amount of time elapses.

- Reducing alert volume by monitoring only critical files - The template property values of the file-related preconfigured groups and templates have been modified to monitor only the core critical files to reduce the alert volume. For example, only certain files in the `/etc` directory (such as `/etc/passwd` and `/etc/shadow`) are monitored instead of the entire directory.

- Configuring critical users - In earlier releases, the system templates (`login`/`logout` and `su`) hard-coded root and ids as being critical for determining alerts with high severity. Since applications like HP-UX Role-Based Access Control[1] support the assignment of root privileges to several users, HIDS must support configuration of critical users. The system templates support new template properties to specify the critical user names.

- Support to specify user names and user IDs - The template properties that specify user IDs (for example, `priv_uid_list`) in previous releases now support the specification of both user IDs and user names.

- Measuring the event rate - A new `idscor` option (`-t`) is supported to measure the rate of events generated by a system and monitored by HIDS. If you know the event rate, you can refer to the HIDS Tuning and Sizing primer (available at **http://docs.hp.com/en/internet.html#Host%20Intrusion%20Detection%20Sy stem**) to determine the impact of HIDS on memory and CPU consumption.

Impact

There are no impacts other than those listed previously.

Compatibility

HP-UX HIDS Release 4.0 is backward compatible with Release 3.1 and Release 3.0. It is not backward compatible with Release 1.0, Release 2.0, Release 2.1, and Release 2.2.

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1. HP-UX Role-Based Access Control is available on the Software Pack (SPK) media for HP-UX 11i v2 December 2005.

Performance

There are no known performance issues.

Documentation

For further information, refer to the following:

Manpages (directory path `/opt/ids/share/man/man1m`):

- *IDS_checkAdminCert* (1M)
- *IDS_checkAgentCert* (1M)
- *IDS_checkInstall* (1M)
- *IDS_genAdminKeys* (1M)
- *IDS_genAgentCerts* (1M)
- *IDS_importAgentKeys* (1M)
- *idsadmin* (1M)
- *idsagent* (1M)
- *idsgui* (1M)

Documents (available at
`http://docs.hp.com/en/internet.html#HP-UX%20Host%20Intrusion%20Detection%20System`):

- *HP-UX Host Intrusion Detection System Release 4.0 Release Notes*

- *HP-UX Host Intrusion Detection System Administrator's Guide, Software Release 4.0.3*

- *HP OpenView Operations SMART Plug-In for HP-UX HIDS* (available at the HP Openview Management Software site at `http://openview.hp.com`. Choose **Downloads**, then **Smart Plug-ins**.)

Obsolescence

Effective March 31, 2007, support for Release 2.*x* of HIDS will be discontinued. HP recommends that all customers using HIDS Release 2.*x* upgrade to Release 4.0. To learn more about discontinuance, see
`http://www.hp.com/softwarereleases/releases-media2/index.html`.

HP-UX Security Attributes Configuration

The HP-UX Security Attributes Configuration tool 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),[1] HP System Management Homepage (SMH),[2] or by running the *secweb* (1M) command.

- Configure system-wide values of security attributes from the System Defaults tab.

- Configure per-user values of security attributes of local users from the Local Users tab.

- Configure per-user values of security attributes of NIS users from the NIS Users tab.

- Preview commands that support the GUI actions, prior to execution.

Summary of Change

The HP-UX Security Attributes Configuration tool has been updated to incorporate defect fixes.

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 and TUI.

Compatibility

There are no known compatibility issues.

Performance

There are no known performance issues.

Documentation

For more information, refer to the *sam* (1M) and *secweb* (1M) manpages, as well as the product online help.

Obsolescence

Not applicable.

OpenSSL

OpenSSL A.00.09.07e 021 (OpenSSL A.00.09.07e) is based on the open source product OpenSSL 0.9.7e, which offers a general purpose cryptography library and implementation of the Secure Sockets Layer (SSLv2/v3) and Transport Layer Security (TLS v1) protocols.

1. See also "HP Systems Insight Manager" on page 111.
2. See also "HP System Management Homepage" on page 110.

OpenSSL A.00.09.07e automatically generates a self-signed host certificate and a private key. The host certificate is stored as `/opt/openssl/certs/hosts.pem`, and the private key of the host certificate as `/opt/openssl/private/hostkey.pem`.

Summary of Change

For the March 2006 release, OpenSSL has a new version number to accommodate a packaging change. There is no change in functionality.

Impact

There is no impact.

Compatibility

There are no known compatibility issues.

Performance

There are no known performance issues.

Documentation

For more information about OpenSSL, refer to the *OpenSSL A.00.09.07-e Release Notes* at `http://docs.hp.com/en/internet.html#OpenSSL`.

Obsolescence

Not applicable.

9 Commands and System Calls

What is in This Chapter?

This chapter includes information about new and changed commands and system calls. Topics in this chapter are unchanged for the March 2006 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 35.

10 Libraries and Programming

What is in This Chapter?

This chapter covers a variety of changes of particular interest to programmers, such as changes to compilers, editors, and libraries, including the following:

- Java 2 Standard Edition Platform (see page 144)

  — JDK, JRE, and Plug-In for HP-UX for the Java Platform (see page 144)

  — Java Out-of-Box (see page 145)

- Perl (see page 146)

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

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

Also installed are the Java for HP-UX Add-on Standard C++ Runtime libraries for the SDK (product `T1456AAaddon`), for the RTE (product `T1457AAaddon`), for the JDK (product `Java15JDKadd`), and for the JRE (product `Java15JRE`). Java developers on PA-RISC will need these C++ libraries if they are using the ANSI Standard C++ runtime (`-AA`) option in an application that loads Java.

The `ObsJava12` (Obsolescence for Java 1.2) bundle removes SDK/RTE 1.2 upon installation of the HP-UX 11i v2 Operating Environments.

The JDK, JRE, and Plug-in bundles are as follows:

- `T1456AA` - Java 1.4 SDK
- `T1456AAaddon` - Java 1.4 SDK Addon
- `T1457AA` - Java 1.4 RTE
- `T1457AAaddon` - Java 1.4 RTE Addon
- `T1458AA` - Java 1.4 Plugin
- `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
- `ObsJava13` - Obsolescence for Java 1.3

Summary of Change

The March 2006 release includes the following changes:

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

- JDK/JRE 5.0 and the JDK/JRE Add-ons have been updated to incorporate defect fixes.

- JDK/JRE 5.0 is now delivered on the Technical Operating Environment (TCOE) as well as the other OEs. (It was not included on the TCOE in the December 2005 release.)

- The `ObsJava13` (Obsolescence for Java 1.3) bundle is now included and will remove SDK/RTE and Plug-In 1.3 upon installation of the Operating Environments.

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

Upon installation of the HP-UX 11i v2 Operating Environments, SDK/RTE 1.2 and 1.3 are obsolete and are removed by `ObsJava12` (Obsolescence for Java 1.2) and `ObsJava13` (Obsolescence for Java 1.3), respectively.

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 March 2006, 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.

Perl

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

Summary of Change

Perl has been updated to incorporate defect fixes.

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 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.

11 Internationalization

What is in This Chapter?

This chapter usually describes internationalization functionality. Topics in this chapter are unchanged for the March 2006 release of HP-UX 11i v2.

For a summary of changes in previous releases of HP-UX 11i v2, see the chapter Chapter 3, "What is New at a Glance," on page 35.

12 Other Functionality

What is in This Chapter?

This chapter describes other new and changed operating-system software functionality. Topics in this chapter are unchanged for the March 2006 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 35.