

HP-UX 11i Version 3 March 2009 Release Notes Operating Environments Update Release

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Publication History

This document is part of a series. Each document in the series describes what is new, changed, deprecated, or obsoleted since the previous release of HP-UX 11i v3 (or, in the case of the initial release, since the September 2005 release of HP-UX 11i v1 and the June 2006 release of HP-UX 11i v2).

For the most recent documents in this series, as well as the most recent version of this document, see the HP-UX 11i v3 documentation at <http://docs.hp.com/en/oshpux11iv3.html>. Documents in this series are also available on the Instant Information media.

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

Current Document in This Series

- *HP-UX 11i Version 3 March 2009 Release Notes*, Edition 1, MPN 5992-5804

Previous Documents in This Series

- *HP-UX 11i Version 3 September 2008 Release Notes*, Edition 1, MPN 5992-4174
- *HP-UX 11i Version 3 March 2008 Release Notes*, Edition 1, MPN 5992-3373
- *HP-UX 11i Version 3 September 2007 Release Notes*, Edition 3, MPN 5992-3231
- *HP-UX 11i Version 3 September 2007 Release Notes*, Edition 2, MPN 5992-1996 (retired)
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- *HP-UX 11i v3 Release Notes Errata*, Edition 2, MPN 5992-2881 (retired)
- *HP-UX 11i v3 Release Notes Errata*, Edition 1, MPN 5991-7585 (retired)
- *HP-UX 11i Version 3 Release Notes* (February 2007), Edition 1, MPN 5991-6469



NOTE: Revisions to the initial (February 2007) *HP-UX 11i Version 3 Release Notes* are contained in the *HP-UX 11i v3 Release Notes Errata*, Edition 3, MPN 5992-5827, located at <http://docs.hp.com/en/oshpux11iv3.html> (navigate to **Release Notes**).

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Typographic Conventions

We use the following typographical conventions.

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

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1 About This Document

What is in This Chapter

This chapter will help you use these release notes effectively. The following topics are covered in this overview:

- “The Purpose of the HP-UX 11i Version 3 March 2009 Release Notes” (page 22)
- “Where You Should Begin” (page 23)
 - “What is in the Remaining Chapters” (page 23)
- “Related Information” (page 25)
 - “Other Sources of Information about This Release” (page 26)
 - “Locating Release Notes for Previous Versions of HP-UX” (page 28)

The Purpose of the HP-UX 11i Version 3 March 2009 Release Notes

This document is part of a series. Each document in the series describes what is new, changed, deprecated, or obsoleted since the previous release of HP-UX 11i v3 (or, in the case of the initial, February 2007, release, since the September 2005 release of HP-UX 11i v1 and the June 2006 release of HP-UX 11i v2).

As with other HP-UX release notes, the *HP-UX 11i Version 3 March 2009 Release Notes* does not completely document all the features of this release. Instead, it contains high-level information and pointers to more detailed 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 v3 Operating Environments (OE) media.

Information about known problems, defect fixes, and work-arounds are not normally documented in these release notes. Instead, you are provided with pointers to the product's own documentation where you can find such information. Installation-related known problems can also be found in the *HP-UX 11i Version 3 Installation and Update Guide* and *HP-UX 11i v3 Read Before Installing or Updating*, available on the Instant Information DVD and on the Web at

<http://docs.hp.com/en/oshpux11iv3.html>

About the Initial HP-UX 11i v3 Release Notes (February 2007) The *HP-UX 11i Version 3 Release Notes* describes what is new, has changed, or has been deprecated or obsoleted in HP-UX 11i v3 since the following two releases:

- HP-UX 11i v1 September 2005 Operating Environment Update Release
- HP-UX 11i v2 June 2006 Operating Environment Update Release

The *HP-UX 11i Version 3 Release Notes* addresses two sets of customers: those who are migrating from the HP-UX 11i v1 September 2005 release; and those are migrating from the HP-UX 11i v2 June 2006 release.



NOTE: Revisions to the *HP-UX 11i Version 3 Release Notes* (February 2007) are contained in the *HP-UX 11i v3 Release Notes Errata*, Edition 3, MPN 5992-5827, located at <http://docs.hp.com/en/oshpux11iv3.html> (navigate to **Release Notes**).

Where You Should Begin

This book is organized in such a way that you need only read Chapter 3: “What is New at a Glance” (page 45) for a quick overview of what is new, has changed, and has been deprecated or obsoleted in the current and previous HP-UX 11i v3 releases.

Chapter 3 contains a set of summaries for each update (or the initial) release. Each summary in the set contains a very high-level sampling of the changes for a single product or feature.



NOTE: For the initial (February 2007) release of HP-UX 11i v3, you will find *two* sets of change-summaries in Chapter 3: one set of change-summaries for customers migrating from HP-UX 11i v1 and one set of change-summaries for customers migrating from HP-UX 11i v2.

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

Each product/feature section in the remainder of this document is divided into the following subsections:

- Description of the Product/Feature
- Summary of Change
- Impact
- Compatibility
- Performance
- Documentation
- Obsolescence



NOTE: The *HP-UX Release Notes* document does not provide exhaustive information about the changes in any one product or feature. It provides only high-level highlights and pointers to product-specific documentation. For more detailed information, you should see the product’s own documentation, especially if you would like to learn more about defect fixes, known problems, and work-arounds.

What is in the Remaining Chapters

The remaining chapters of these release notes are as follows:

- Chapter 2: “Introduction to HP-UX 11i Version 3” (page 29), provides an overview of the Operating Environments, along with information compatibility and compatibility issues.
- Chapter 3: “What is New at a Glance” (page 45), furnishes a quick overview of what is new, has changed, or has been deprecated or obsoleted in this release.
- Chapter 4: “Hardware-Specific Information” (page 95), presents information regarding supported systems, networking and mass storage cards and drivers, as well as other information that is hardware-specific.
- Chapter 5: “General System Administration” (page 111), includes information of particular interest to system administrators.
- Chapter 6: “Disk and File Management” (page 161), presents information regarding directory, file system, and disk management.
- Chapter 7: “Internet and Networking” (page 165), covers changes to networking functionality and Internet services.
- Chapter 8: “Security” (page 175), covers changes and enhancements to security services.
- Chapter 9: “Commands and System Calls” (page 187), includes information about new and changed commands and system calls.
- Chapter 10: “Libraries and Programming” (page 193), provides information of particular interest to programmers, including changes to compilers, editors, and libraries.

- Chapter 11: “Internationalization” (page 199), presents information about text fonts and converters relating to various international languages.
- Chapter 12: “Other Functionality” (page 201), includes additional applications or functionality in the Operating Environments.

Related Information

HP offers information on a wide variety of subjects. The following websites may be of interest.

- HP Software Depot:
<http://hp.com/go/softwaredepot>
- IT Resource Center (ITRC):
<http://itrc.hp.com>.
- Dev Resource Central:
<http://devresource.hp.com>
- Developer & Solution Partner Program (DSPP):
<http://www.hp.com/dspp>
- HP Software Releases and Media:
<http://www.hp.com/software/releases/releases-media2/index.html>
- HP Servers:
 - HP 9000 Server Family: <http://www.hp.com/go/hp9000>
 - HP Integrity Server Family: <http://www.hp.com/go/integrity>
 - HP BladeSystem: <http://www.hp.com/go/blades>
- HP Workstations:
<http://hp.com/go/workstations>
- Enterprise Servers, Workstations and Systems Hardware Documentation:
<http://docs.hp.com/hpux/hw/>

Other Sources of Information about This Release

In addition to these release notes, many other sources of information related to the HP-UX 11i v3 release are available on the Web at the following sites:

- HP-UX 11i v3 for HP Integrity and HP 9000 servers
<http://hp.com/go/hpux11iv3>
- HP-UX 11i v3 Documentation
<http://docs.hp.com/en/oshpux11iv3.html>
- QuickSpecs: HP-UX 11i v2 & v3
http://h18004.www1.hp.com/products/quickspecs/12079_div/12079_div.PDF
- HP-UX 11i v3 on HP Integrity Servers
<http://h71028.www7.hp.com/ERC/downloads/5982-7653EN.pdf>

Of particular interest at <http://docs.hp.com/en/oshpux11iv3.html> are the following documents:

- *HP-UX 11i Version 3 Installation and Update Guide*
- *HP-UX 11i v3 Read Before Installing or Updating*
- *The HP-UX System Administrator's Guide*

Beginning with HP-UX 11i v3, a new multi-volume set of manuals, collectively known as *The HP-UX System Administrator's Guide*, replaces *Managing Systems and Workgroups* as the primary source of information on HP-UX system administration tasks and concepts. *The HP-UX System Administrator's Guide* covers an expanded set of topics, logically organized to guide you to the correct volume with minimal searching. While some material in *The HP-UX System Administrator's Guide* may apply to previous releases of HP-UX 11i, the new set focuses on HP-UX 11i v3.

Other sources of information include the following:

- HP Documentation Website
HP provides a website where the latest HP-UX documentation and updates are available:
<http://www.docs.hp.com/>
- HP-UX 11i v3 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.
- Manual Pages
For the HP-UX 11i v3 release, the manual pages (manpages) are available on the HP-UX Welcome Page of your system, on the Instant Information DVD under the title HP-UX Reference, through the use of the man command, and on the Web at
http://www.docs.hp.com/en/hpuxman_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 3 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 v3 is included with your media kit.
- White Papers on HP-UX
You can locate a collection of white papers on various topics related to the HP-UX 11i v3 release at

www.hp.com/go/hpux11iv3resources

White papers on various topics related to HP-UX can also be found at the HP Documentation Web site at

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

Locating Release Notes for Previous Versions of HP-UX

Release notes for previous versions of HP-UX can be found at the following websites:

- HP-UX 11.0:
<http://www.docs.hp.com/en/oshpux11.0.html>
- HP-UX 11i v1.5:
<http://docs.hp.com/en/hpuxos11iv1.5.html>
- HP-UX 11i v1.6:
<http://www.docs.hp.com/en/oshpux11iv1.6.html>
- HP-UX 11i v1:
<http://www.docs.hp.com/en/oshpux11i.html>
- HP-UX 11i v2:
<http://www.docs.hp.com/en/oshpux11iv2.html>

2 Introduction to HP-UX 11i Version 3

What is in This Chapter

This chapter provides an introduction to HP-UX 11i v3 and the Operating Environments, along with information about compatibility and compatibility issues.

- “Welcome to HP-UX 11i Version 3” (page 30)
- “HP-UX 11i Release Names and Release Identifiers” (page 31)
- “HP-UX 11i v3 Operating Environment Install/Update Structure” (page 32)
 - “HP-UX 11i v3 Software Bundles” (page 32)
- “Original HP-UX 11i v3 Operating Environments” (page 33)
- “NEW HP-UX 11i v3 Operating Environments” (page 34)
 - “Overview” (page 34)
 - “HP-UX 11i v3 Base Operating Environment” (page 34)
 - “HP-UX 11i v3 Virtual Server Operating Environment” (page 38)
 - “HP-UX 11i v3 High Availability Operating Environment” (page 39)
 - “HP-UX 11i v3 Data Center Operating Environment” (page 40)
- “Software Pack (Optional HP-UX 11i v3 Core Enhancements)” (page 42)
- “HP-UX 11i Compatibility for HP Integrity and HP 9000 Servers” (page 43)
- “Compatibility Issues or Exceptions in HP-UX 11i v3 March 2009” (page 43)

Welcome to HP-UX 11i Version 3

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

Some key highlights of HP-UX 11i v3 include advancements in performance, integrated multi-pathing, new security and availability offerings which provide increased resiliency, layered security and in-depth protection, Hyper-Threading (HT) Technology support using Dynamic LCPU, and multi-OS management across HP-UX and other HP supported OS's. HP-UX 11i and Virtual Server Environment (VSE) solutions accelerate deployment times.

With the March 2008 release, HP began offering new HP-UX 11i v3 Operating Environments. The new Operating Environments, which offer a richer set of products, are available only for version 3 of HP-UX 11i. Customers requiring versions 1 or 2 of HP-UX 11i may still purchase the original set of Operating Environments through the end of their planned sales life. For detailed information on the new HP-UX 11i v3 Operating Environments, please see:

<http://www.hp.com/go/hpux11iv3>

Information about the new OE contents is also available in this Release Notes document at “NEW HP-UX 11i v3 Operating Environments” (page 34).

Abundant information about the HP-UX 11i v3 release is available at the following websites:

- HP-UX 11i v3 for HP Integrity and HP 9000 servers
www.hp.com/go/hpux11iv3
- QuickSpecs: HP-UX 11i v2 & v3
http://h18004.www1.hp.com/products/quickspecs/12079_div/12079_div.PDF
- HP-UX 11i v3 on HP Integrity Servers
<http://h71028.www7.hp.com/ERC/downloads/5982-7653EN.pdf>

HP-UX 11i Release Names and Release Identifiers

Each HP-UX 11i release has an associated release name and release identifier. The `uname(1)` command with the `-r` option returns the release identifier. 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 ¹
HP-UX 11i v3	B.11.31	Intel® Itanium® PA-RISC

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

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

```
# swlist | grep HPUX11i
```

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

```
HPUX11i-BOE B.11.31.0903 HP-UX Base Operating Environment
```

The above revision string signifies the following:

B.11.31 = HP-UX 11i v3

0903 = March 2009 Update Release

HP-UX 11i v3 Operating Environment Install/Update Structure

HP-UX 11i v3 has an Operating Environment (OE) Install/Update structure that provides more flexibility in managing the products you wish to install and update on your system. The OE structure for HP-UX 11i v3 separates software components into several product categories, making it easier and more reliable for you to incrementally update your system with OE software components.

For more information about installation with the HP-UX 11i v3 OE structure, see the *HP-UX 11i Version 3 Installation and Update Guide*, available at <http://docs.hp.com/en/oshpux11iv3.html>.

HP-UX 11i v3 Software Bundles

HP-UX 11i v3 contains three types of OE software components:

- *Required*: Software and network driver bundles that are required and is always installed with the operating system. Software in this category cannot be deselected.
- *Recommended*: Software bundles that are recommended and should be installed because it fulfills required software dependencies, if any exist. You can manually deselect the bundles before you install or update your system.
- *Optional*: Software bundles that are not installed or updated by default. You must manually select these bundles before you install or update your system.

HP recommends that you do not deselect recommended bundles or remove them from your system unless you know for certain that the software contained in these bundles is not required for your operating environment.

For a detailed list of the required, recommended, and optional software bundles, see the *HP-UX 11i Version 3 Installation and Update Guide*, available at <http://docs.hp.com/en/oshpux11iv3.html>.

Original HP-UX 11i v3 Operating Environments

The March 2008 release of HP-UX 11i v3 was the last full Operating Environments Update Release (OEUR) provided for the following original HP-UX 11i Operating Environments (OEs):

- Foundation OE
- Enterprise OE
- Mission Critical OE
- Technical Computing OE

Although the end of sale for HP-UX 11i v3 media of original Operating Environments (March 2008 release) was October 30th 2008, you may still continue to purchase licenses for these products. These licenses, along with Operating Environment media for version 1 and version 2 will also be available until the planned end of sales life for the original OEs.

Information on v3 Operating Environments is located in this document at “NEW HP-UX 11i v3 Operating Environments” (page 34). Information on transition, support, and mapping from original to new v3 Operating Environments can be found at

<http://www.hp.com/go/tov3oes>

NEW HP-UX 11i v3 Operating Environments

Overview

The March 2009 release represents HP's third release of new Operating Environments for version 3 of HP-UX 11i. These new Operating Environments, listed below, provide a richer set of products and improved choices over the original set of HP-UX 11i OEs.

Licenses for the original set of OEs are still available, and customers requiring versions 1 or 2 of HP-UX 11i may purchase the original set of Operating Environments through the end of their planned sales life. For more information on transition, mapping, etc. from original OEs to new OEs please see:

<http://www.hp.com/go/tov3oes>

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 new HP-UX 11i v3 OEs:

- **HP-UX 11i v3 Base OE (BOE)** — Provides integrated HP-UX functionality for customers requiring less complex installations. The BOE contains all the applications included in the Foundation OE, and improves the bundle set by adding much-requested products such as HP Process Resource Manager (PRM), APA, as well as math libraries and graphics for technical computing applications. This OE is bundled as HPUX11i-BOE. For more details, see "HP-UX 11i v3 Base Operating Environment" (page 34).
- **HP-UX 11i v3 Virtual Server OE (VSE-OE)** — Designed for customers seeking higher resource utilization or embarking on consolidation projects and need virtualization for a flexible UNIX environment. The VSE-OE contains all the products included in the BOE (and the original EOE) and adds a host of other products including the entire VSE Suite. This OE is bundled as HPUX11i-VSE-OE. For more details, see "HP-UX 11i v3 Virtual Server Operating Environment" (page 38).
- **HP-UX 11i v3 High Availability OE (HA-OE)** — For customer requiring high availability for large mission critical applications, this OE contains all the products included in the BOE (and the original EOE), plus applications such as HP Serviceguard and HA toolkits required to enable a mission-critical server. This OE is bundled as HPUX11i-HA-OE. For more details, see "HP-UX 11i v3 High Availability Operating Environment" (page 39).
- **HP-UX 11i v3 Data Center OE (DC-OE)** — For customers who need both flexibility and high availability, the Data Center OE provides mission critical virtualization by combining the robust product selection in the VSE-OE and HA-OE in one integrated and tested bundle. This OE contains all the products included in the BOE, VSE-OE, HA-OE (and the original MCOE) and is bundled as HPUX11i-DC-OE. For more details, see "HP-UX 11i v3 Data Center Operating Environment" (page 40).

HP-UX 11i v3 Base Operating Environment

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

Along with the 64-bit HP-UX operating system, the Base OE contains the following features.



NOTE: For a description of the *recommended* core OS bundles, which are not listed here, see the *HP-UX 11i Version 3 Installation and Update Guide*, available at <http://docs.hp.com/en/oshpux11iv3.html>.

For definitions of *required*, *recommended*, and *optional*, see “HP-UX 11i v3 Software Bundles” (page 32).

For an overview of the features that are new or have changed in this release, see Chapter 3 (page 45).

Required Features

- CommonIO
- EMSWeb
- Event Monitoring Service
- Feature Enablement Patch Bundle (FEATURE11i)
- GigEther-00
- GigEther-01
- Hardware Enablement Patch Bundle (HWEnable11i)
- HP Instant Capacity (iCAP, formerly iCOD)
- HP Instant Capacity Manager
- HP WBEM Services for HP-UX
- HP-UX Accounts for Users and Groups
- HP-UX Disks and File Systems (fsweb)
- HP-UX Kernel Configuration
- HP-UX Peripheral Device Tool
- HP-UX Security Attributes Configuration
- IEther-00
- Judy Libraries
- Logical Volume Manager (LVM)
- Network Interfaces & Network Services Configuration (Ncweb)
- nPartition Commands
- nPartition Provider
- Obsolescence Bundle (for Updates only)
- ONCplus (NFS/AutoFS/CacheFS/NIS/RPC)
- Online Diagnostics
- OpenSSL
- Printer Management Tool
- Prop Plus (SysMgmtPlus)
- Provider Utils (ProviderSvcBase)
- Quality Pack Patch Bundles (QPKBASE and QPKAPPS)
- scsiU320-00
- RAID-01
- Sendmail
- SerialSCSI-00
- SWGETTOOLS
- SWManager
- SysMgmtBASE

- SysMgmtMin
 - Software Distributor
- System Fault Management
- Update-UX
- USB-00
- VxFS 4.1

Recommended Features

- Distributed Systems Administration Utilities
- Dynamic nPartitions
- Dynamic Root Disk
- FibrChanl-00
- FibrChanl-01
- FibrChanl-02
- Firefox/Firefox Source
- GuestAvioLan
- GuestAVIOStor
- GNOME
- GTK/GTK Source
- GTK+ Libraries
- HostAVIOLan
- HostAVIOStor
- HP Auto Port Aggregation
- HP Caliper
- HP CIFS Client
- HP CIFS Server
- HP Integrity VM Guest Support Libraries (VMGuestLib)
- HP Process Resource Manager
- HP Wildebeest Debugger
- HP-UX Bastille
- HP-UX FTP Server (WU-FTPD)
- HP-UX IPFilter
- HP-UX Java Runtime Environment (JRE) 5.0 (1.5)
- HP-UX Java Runtime Environment (JRE) 6.0
- HP-UX Java Development Kit (JDK) for the Java™ 2 Platform Standard Edition (J2SE) 5.0 (1.5)
- HP-UX Java Development Kit (JDK) for the Java 2 Platform Standard Edition 6 (Java™ SE 6) 6.0
- HP-UX Nameserver (BIND)
- HP-UX Software Development Kit and Runtime Environment for the Java 2 Platform Standard Edition v1.4
- HP-UX Secure Shell
- HP-UX WBEM Storage Indication Provider (DAS Provider)
- 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)
- Java for HP-UX Add-On C++ Libraries for SDK/JDK and RTE/JRE 1.4, 5.0, 6.0
- Java Runtime Plug-in (JPI) for HP-UX 1.4
- LDAP-UX

- Mozilla Application Suite
- Mozilla Source
- PAM Kerberos
- Partition Manager
- Perl
- PRMKernelSW
- PRMLibraries
- ProviderDefault Bundle
 - HP Application Discovery Agent (AppDiscAgent)
 - HP Global Workload Manager Agent
 - HP Integrity Virtual Machines Provider (VMProvider)
 - HP-UX WBEM Fibre Channel Provider
 - HP-UX WBEM File System Provider
 - HP-UX WBEM IOTree Indication Provider
 - HP-UX WBEM KC Providers
 - HP-UX WBEMP-LAN Provider (WBEMP-LAN-00)
 - HP-UX WBEM Online Operations Service Provider (OLOS)
 - HP-UX WBEM RAIDSA Provider
 - HP-UX WBEM SAS Provider
 - HP-UX WBEM SCSI Provider
 - HP-UX WBEM Storage Indication Provider (DAS Provider)
 - Utilization Provider
 - vPar Provider
- Red Hat Directory Server
- Sec00 Security Tools
- Software Assistant
- SysMgmtWeb (contains HP System Management Homepage)
- Thunderbird/Thunderbird Source
- Tune-N-Tools

Optional Features

- 3D Graphics Run Time Environment
- 10GigEthr-00
- 10GigEthr-01
- Base VxTools 5.0
- Common Desktop Environment (all languages)
- Cpio Enhancement
- Dynamic System V Semaphore Tunables
- FIFOENH
- getenv Performance Enhancement
- HP MLIB
- HP MPI
- HP Pay per use
- HP Process Resource Manager Web GUI Systems Insight Manager Integration Files (PRMSIMTools)
- HP Systems Insight Manager
- HP Virtual Server Environment Management Software (VSEMGmt)
- HP-UX Atomic APIs (libatomic)

- HP-UX Auditing System Extensions
- HP-UX Host Intrusion Detection System (HIDS)
- HP-UX IPSec
- HP-UX Mobile IPv4
- HP-UX NSA (Network Server Accelerator) HTTP
- HP-UX Password Hash Infrastructure for HP-UX 11i v3
- HP-UX Role-based Access Control Extension
- HP-UX Security Containment Extensions
- HP-UX Swapoff (Command)
- HyprFabrc-00
- IB4X-00 Driver for InfiniBand
- Ignite-UX
- IPv6 Upgrade for HP-UX 11i v3
- Kerberos Client (KRB5CLIENT)
- Libc Enhancement
- MallocNextGen
- MemFS
- Mobile IPv6
- Multimedia Streaming Protocols
- Numeric User Group Name
- Pax Enhancement
- PCIMUX-00
- Java Out-of-Box
- Security Level 10
- Security Level 20
- Security Level 30
- Software Package Builder
- TermIO-00
- UmountallEnh
- Virtual Server Environment Configuration Assistant (VseAssist)
- VxFS 5.0
- VxVM 5.0

HP-UX 11i v3 Virtual Server Operating Environment

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

In addition to the features described previously in the HP-UX 11i v3 Base OE (upon which it is built), the Virtual Server OE includes the following additional features.



NOTE: For a description of the *recommended* core OS bundles, which are not listed here, see the *HP-UX 11i Version 3 Installation and Update Guide*, available at <http://docs.hp.com/en/oshpux11iv3.html>.

For definitions of *required*, *recommended*, and *optional*, see “HP-UX 11i v3 Software Bundles” (page 32).

For an overview of the features that are new or have changed in this release, see Chapter 3 (page 45).

Required Features

- See Required Features (page 35).

Recommended Features

- GlancePlus Pak
- High Availability Monitors
- HP Capacity Advisor LTU
- HP Global Workload Manager LTU
- HP Integrity Virtual Machines (VMGuestSW)
- HP Integrity VM Manager (VMMGR)
- HP Virtualization Manager LTU
- HP VSE Suite LTU
- HP-UX Workload Manager
- HP-UX Workload Manager Toolkits
- MirrorDisk/UX (not in BOE)
- OnlineJFS 4.1
- Plus the list in Recommended Features (page 36)

Optional Features

- HP Integrity Virtual Machines
- HP OnlineJFS 5.0
- HP-UX Virtual Partitions
- VMKernelSW
- Plus the list in Optional Features (page 37)

HP-UX 11i v3 High Availability Operating Environment

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

In addition to the features described previously in the HP-UX 11i v3 Base OE (upon which it is built), the High Availability OE includes the following features.



NOTE: For a description of the *recommended* core OS bundles, which are not listed here, see the *HP-UX 11i Version 3 Installation and Update Guide*, available at <http://docs.hp.com/en/oshpux11iv3.html>.

For definitions of *required*, *recommended*, and *optional*, see “HP-UX 11i v3 Software Bundles” (page 32).

For an overview of the features that are new or have changed in this release, see Chapter 3 (page 45).

Required Features

- See Required Features (page 35).

Recommended Features

- Enterprise Cluster Master Toolkit
- GlancePlus Pak
- High Availability Monitors
- HP Serviceguard
- HP Serviceguard NFS Toolkit
- MirrorDisk/UX (not in BOE)
- OnlineJFS 4.1
- Plus the list in Recommended Features (page 36)

Optional Features

- HP OnlineJFS 5.0
- Plus the list in Optional Features (page 37)

HP-UX 11i v3 Data Center Operating Environment

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

In addition to the features described previously in the HP-UX 11i v3 Base OE (upon which it is built), the Data Center OE includes the following features.



NOTE: For a description of the *recommended* core OS bundles, which are not listed here, see the *HP-UX 11i Version 3 Installation and Update Guide*, available at <http://docs.hp.com/en/oshpux11iv3.html>.

For definitions of *required*, *recommended*, and *optional*, see “HP-UX 11i v3 Software Bundles” (page 32).

For an overview of the features that are new or have changed in this release, see Chapter 3 (page 45).

Required Features

- See Required Features (page 35).

Recommended Features

- Enterprise Cluster Master Toolkit
- GlancePlus Pak
- High Availability Monitors
- HP Serviceguard
- HP Serviceguard NFS Toolkit

- HP Capacity Advisor LTU
- HP Global Workload Manager LTU
- HP Integrity Virtual Machines (VMGuestSW)
- HP Integrity VM Manager (VMMGR)
- HP Virtualization Manager LTU
- HP VSE Suite LTU
- HP-UX Workload Manager
- HP-UX Workload Manager Toolkits
- MirrorDisk/UX (not in BOE)
- OnlineJFS 4.1
- Plus the list in Recommended Features (page 36)

Optional Features

- HP Integrity Virtual Machines
- HP OnlineJFS 5.0
- HP-UX Virtual Partitions
- VMKernelSW
- Plus the list in Optional Features (page 37)

Software Pack (Optional HP-UX 11i v3 Core Enhancements)

The HP-UX 11i v3 Software Pack (SPK) contains optional core enhancements for HP-UX 11i v3. For the March 2009 release of HP-UX 11i v3, the following SPK products have been added to the Operating Environments as optionally installed features/products:

- “CpioCmdEnh” (page 188)
- “HP-UX Parallel Umounts (UmountallEnh)” (page 202)
- “HP-UX Password Hash Infrastructure for HP-UX 11i v3” (page 178)
- “HP-UX Security Containment Extensions” (page 180)
- “Kerberos Client” (page 182)
- “MemFS” (page 162)
- “PAX-ENH” (page 190)

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

Hewlett-Packard (HP) understands your need for investment protection. By providing multiple levels of compatibility between operating system versions, between hardware platforms, on virtual machines, and even between chip architectures, we believe the HP-UX operating system provides the most comprehensive investment protection in the industry.

For more information about HP-UX compatibility, see the white paper at <http://www.hp.com/go/hpux11compatibility>

Compatibility Issues or Exceptions in HP-UX 11i v3 March 2009

Compatibility issues or exceptions have been noted for the following products or features in HP-UX 11i v3 March 2009. For details, see the indicated pages.

Chapter 4 (page 95)

- “Dynamic P-States Feature” (page 96)

Chapter 5 (page 111)

- “HP Application Discovery (AppDiscAgent)” (page 119)
- “HP Integrity Virtual Machines (Integrity VM)” (page 120)
- “HP-UX Virtual Partitions” (page 130)
- “ProviderSvcsBase” (page 145)

Chapter 7 (page 165)

- “Red Hat Directory Server for HP-UX” (page 172)

Chapter 8 (page 175)

- “HP-UX Password Hash Infrastructure for HP-UX 11i v3” (page 178)

Chapter 10 (page 193)

- “Perl” (page 196)

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 v3 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 HP-UX 11i v3 March 2009 Release” (page 46)
- “What is New in the HP-UX 11i v3 September 2008 Release” (page 53)
- “What is New in the HP-UX 11i v3 March 2008 Release” (page 59)
- “What is New in the HP-UX 11i v3 September 2007 Release” (page 65)
- “What is New in the Initial (February 2007) HP-UX 11i v3 Release” (page 70)

What is New in the HP-UX 11i v3 March 2009 Release

In the following summaries, you can obtain a general picture of how the March 2009 release of HP-UX 11i v3 differs from the September 2008 release of HP-UX 11i v3.

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

Chapter 2 (page 29)

- Software Pack (Optional HP-UX 11i v3 Core Enhancements): Several new and updated Software Pack products are available in the Operating Environments as optional products. See “Software Pack (Optional HP-UX 11i v3 Core Enhancements)” (page 42).

Chapter 4 (page 95)

- CommonIO: Updated with quality improvements. See “CommonIO” (page 102).
- **New:** Dynamic P-States Feature: Adds the ability to control processor performance from within HP-UX, allowing systems to conserve power when not fully loaded. Requires Intel® Itanium® 9100 series or later processors. See “Dynamic P-States Feature” (page 96).
- Hardware Enablement Bundle for HP-UX 11i v3 (HWEEnable11i): Includes support for new PCI-Express I/O adapters in HP Integrity Servers, and HP-UX support for HP servers with PA8900 processors and the sx2000 chipset. Also includes new HP-UX 11i v3 patches that improve PCIe Error Recovery (ER) and support of new PCIe devices. New patches were also added for CPU and memory On-Line Addition/Deletion (OLAD) for future HP platforms. See “Hardware Enablement Bundle for HP-UX 11i v3” (page 96).
- Mass Storage Stack: Enhancements include congestion control, server manageability, ease-of-use, and I/O performance. See “Mass Storage Stack” (page 97).
- “Networking and Mass Storage Drivers” (page 98)
 - FibrChanl-00: Updated to version B.11.31.0903 for a defect fix. See “FibrChanl-00 (Fibre Channel Mass Storage Driver)” (page 105).
 - FibrChanl-01: Updated with quality improvements. See “FibrChanl-01 (Fibre Channel Mass Storage Driver)” (page 105).
 - FibrChanl-02: Updated with quality improvements. See “FibrChanl-02 (Fibre Channel Mass Storage Driver)” (page 106).
 - GigEther-00: Updated to incorporate defect fixes. See “GigEther-00” (page 98).
 - GigEther-01: Updated to incorporate defect fixes. See “GigEther-01” (page 99).
 - IB4X-00 Driver for InfiniBand: Supports the Reliable Datagram Sockets (RDS) protocol for Oracle RAC environments and for connectivity to the HP/Oracle Exadata intelligent storage cell. See “IB4X-00 Driver for InfiniBand” (page 101).
 - IEther-00: Updated with quality improvements. See “IEther-00” (page 100).
 - RAID-01: Updated with quality improvements. See “RAID-01” (page 102).
 - scsiU320-00: Updated with quality improvements. See “scsiU320-00” (page 103).
 - SerialSCSI-00: Updated with quality improvements. See “SerialSCSI-00” (page 103).
 - USB-00; Version D.11.31.0903 bundle enables the new USB 2.0 support. See “USB-00” (page 104).
- “Utility Pricing Solutions” (page 107)
 - HP Instant Capacity: Updated to version B.11.31.09.01.00. Provides more versatility in configuring GiCAP groups (with IPV6) and more functionality with gWLM and iCAP Manager; and defect fixes. See “HP Instant Capacity” (page 108).

Chapter 5 (page 111)

- Distributed Systems Administration Utilities: You can benefit from the ease-of-use that the web-based interface provides for configuration synchronization and consolidated logging. See “Distributed Systems Administration Utilities” (page 113).
- Dynamic Root Disk: You will be able to update your OE level on the clone while your original system remains up and running. Once the update on the clone is done, you can boot the clone and keep your original image as backup. Defect fixes and packaging changes involving run time checks and dependencies are also being introduced. See “Dynamic Root Disk” (page 114).
- Enterprise Cluster Master Toolkit: Version B.05.00 includes support for Modular Packages, Oracle 11g R1, Oracle 10g R2 ASM on Itanium servers, and more. See “Enterprise Cluster Master Toolkit” (page 114).
- Event Monitoring Service: Updated to incorporate defect fixes. See “Event Monitoring Service” (page 115).
- Feature Enablement Patch Bundle (FEATURE11i): Updated for HP-UX 11i v3 with patches that enhance or provide new core features (including performance improvements) and enable support for improved dump time and dump analysis tools, file system enhancements including MemFS, performance improvements for multithreaded applications, power minimization and management enhancements, Internationalization improvements, and many other enhancements. See “Feature Enablement Patch Bundle (FEATURE11i)” (page 116).
- FirstBoot: Updated to support Dynamic Root Disk (DRD). See “FIRSTBOOT” (page 116).
- High Availability Monitors: Updated to incorporate defect fixes. See “High Availability Monitors” (page 117).
- “HP Partitioning and Virtual Server Environment” (page 118)
 - Accelerated Virtual I/O (AVIO) (includes GuestAvioLan, HostAvioLan, GuestAVIOStor, and HostAVIOStor): Provide significant performance improvements over the existing VIO products and support Integrity VM Online Guest Migration with Integrity VM V4.1. See “Accelerated Virtual I/O (AVIO)” (page 118).
 - HP Application Discovery (AppDiscAgent): You will obtain more reliable behavior and data from Application Discovery agent. You no longer need to configure the agent on installation. See “HP Application Discovery (AppDiscAgent)” (page 119).
 - HP Integrity Virtual Machines (Integrity VM): Updated to version 4.1. Includes support for online VM migration, SSH 3rd-party alternative for secure communications, and more. See “HP Integrity Virtual Machines (Integrity VM)” (page 120).
 - HP Integrity VM Guest Support Libraries (VMGuestLib): Upgrade to Version 4.1 includes support for the new features of HP Integrity Virtual Machines V4.1. See “HP Integrity VM Guest Support Libraries (VMGuestLib)” (page 121).
 - **New:** HP Integrity Virtual Machines (VMGuestSW): A repackaging of the software on the Integrity VM virtual machines that was contained in the T2767BC bundle to the VMGuestSW bundle. See “HP Integrity Virtual Machines (VMGuestSW)” (page 122)
 - HP Integrity Virtual Machines (VMKernelSW): Updated in support of the Integrity VM V4.1. See “HP Integrity Virtual Machines (VMKernelSW)” (page 122).
 - **New:** HP Integrity Virtual Machines Manager: Enables managers to view and manipulate Integrity VM resources on VM Hosts running HP-UX 11.31. VM Manager supports HP Integrity Virtual Machines V4.0, including support of HP-UX 11.31 agile storage device addressing and other features. Newly added as optional software on the VSE-OE and DC-OE. See “HP Integrity Virtual Machines Manager” (page 123)
 - HP Integrity Virtual Machines Provider (VM Provider): Upgrade to V4.1 supports the new features of HP Integrity Virtual Machines V4.1, including support for Online VM Migration. See “HP Integrity Virtual Machines Provider (VM Provider)” (page 124).
 - HP Process Resource Manager: With version C.03.05, you can now have PRM use the real user ID for placing processes based on user records. See “HP Process Resource Manager ” (page 125).

- HP Virtual Server Environment (VSE) Management Software: In version 4.1 (A.04.01.00), the following components were added or updated:
 - HP Virtualization Manager
 - Logical Server Management
 - HP Integrity Virtual Machines Manager
 - HP Application Discovery
 - HP Capacity Advisor
 - HP Partition Manager
 - Virtual Server Environment Configuration Assistant
 - HP Process Resource Manager

For information about the above components and about licensing requirements, see “HP Virtual Server Environment (VSE)” (page 126).

- **New:** HP-UX nPartition Configuration Commands: New command *parconfig(1M)* runs a set of the Locality-Optimized Resource Alignment (LORA) rules and provides recommended configuration of the nPartition that is LORA compliant. (LORA will be released in the future.) See “HP-UX nPartition Configuration Commands” (page 129).
- HP-UX Virtual Partitions: Includes defect fixes and will support LORA when the feature is released. See “HP-UX Virtual Partitions” (page 130).
- Partition Manager: Includes a defect fix. See “Partition Manager” (page 130).
- Utilization Provider: Updated to version A.01.08.01.02 to support VSE Management Software and HP Insight Dynamics - VSE version 4.1. Supports dynamic nPartition systems and is now available for both 32-bit and 64-bit HP ProLiant Linux systems. See “Utilization Provider” (page 131).
- PRMLibraries: Version number has changed to stay in-sync with the B3835DA (HP PRM) bundle. See “HP Process Resource Manager ” (page 125).
- PRMKernelSW Version number has changed to stay in-sync with the B3835DA (HP PRM) bundle. See “HP Process Resource Manager ” (page 125).
- PRMSIMTools: Updated to support the new features of HP PRM. See “HP Process Resource Manager ” (page 125).
- HP Serviceguard: Version A.11.19 provides faster failover, improved cluster and package uptime, more robust network monitoring, greater scope and flexibility in network configuration, and more. See “HP Serviceguard” (page 132).
- HP Serviceguard NFS Toolkit: Updated to incorporate a set of defect fixes. See “HP Serviceguard NFS Toolkit” (page 133).
- HP System Management Homepage: Provides better user experience by offering custom views - icon and list, and controls to determine settings such as session timeout and login page display. Additionally, you can now determine software dependency using the new *smhassist* command. See “HP System Management Homepage” (page 134).
- HP Systems Insight Manager: Version 5.3 includes support for display of IPv6 addresses, improved Linux identification, improved discovery and identification of ESX hosts, and more. HP Insight Power Manager no longer contained by HP SIM version 5.3 and later. See “HP Systems Insight Manager ” (page 134).
- HP-UX Disks and File Systems (*fsweb*): You can now perform backup and recovery tasks using a web-based interface, and can resize VxFS 5.0 without unmounting the file system. Reporting and auditing of changes to Veritas file systems is improved. With the newly available file system consistency check feature, you are better equipped to diagnose and manage corrupted file systems. See “HP-UX Disks and File Systems (*fsweb*)” (page 136).
- HP-UX Kernel Configuration (*kcweb*): Updated to incorporate defect fixes. See “HP-UX Kernel Configuration (*kcweb*)” (page 137).
- HP-UX Peripheral Devices Manager (*pdweb*): Offers additional diagnostics features for Fibre Channel (FC) adapters. See “HP-UX Peripheral Devices Manager (*pdweb*)” (page 137).

- HP-UX Software Assistant: Updated to version C.02.11. Now allows you to select the analyzers to be used when generating reports within HP SIM and now supports Java™ SE6. And more. See “HP-UX Software Assistant” (page 181).
- iCAP Manager: Updated to provide configuration capabilities for Instant Capacity on a single system. Provides capability to apply an Instant Capacity codeword, modify Instant Capacity properties, and change the number of active cores on the system. See “iCAP Manager” (page 138).
- Ignite-UX: Updated to version C.7.8. Includes improved Ignite and vPars interaction on 11i v3, ability to avoid use of TFTP networking, ability to use Ignite on a network that has IPV6 enabled, and more. See “Ignite-UX” (page 139).
- Logical Volume Manager: Includes `vgmodify` command enhancements that enable you to handle the physical volume size changes and modify configuration parameters of an existing LVM volume group belonging on all supported volume group versions. Also includes new command, `vgversion`, which enables you to take advantage of the improvements in volume group Version 2.0 and higher, and to get higher limits, in-place volume group migration from 1.0 to 2.0 and higher. Plus much more. See “Logical Volume Manager” (page 140).
- Network Interfaces Configuration and Network Services Configuration: You can now use the HP SMH web interface for managing IPv6 neighbor discovery cache. See “Network Interfaces Configuration and Network Services Configuration” (page 141).
- Obsolescence Bundle: Used during an update when obsolete software on the system needs to be removed. Is automatically selected for updates. During the update process selected obsolete or incompatible products and/or drivers are removed. See “Obsolescence Bundle” (page 142).
- Online Diagnostics: Updated to support new and future devices, and to incorporate defect fixes. Has new pre-requisite. See “Online Diagnostics” (page 143).
- Printer Management (web-based): Includes defect fixes. See “Printer Management (web-based)” (page 144).
- **New:** PropPlus (SysMgmtPlus): Enhances the property pages of HP SMH by adding additional details and introducing dynamic capability to the web page. Newly added as a required (always-installed) product in all OEs. See “PropPlus (SysMgmtPlus)” (page 144).
- **New:** ProviderSvcsBase: Provides a new logging daemon that reads error log records from the HP-UX kernel and stores them in the circular log files, which can be read by user space processes. Upon storing the error records in log files, the daemon sends EVM notification to the clients that are interested in reading the error logs. See “ProviderSvcsBase” (page 145).
- Quality Pack Patch Bundles: Updated for the March 2009 OEUR. See “Quality Pack Patch Bundles” (page 146).
- Software Distributor (SD): Updated to incorporate defect fixes. Now delivered in the SysMgmtMin bundle instead of the SwMgmtMin bundle. See “Software Distributor (SD)” (page 147).
- Software Package Builder: Updated to incorporate defect fixes. See “Software Package Builder” (page 147).
- System Fault Management: With new `CIMUTIL` command, one can enumerate instances related to various devices and create filters, handlers, and subscriptions that SFM supports. No longer supports storage disks; instead, they are supported by DAS Provider. Has new pre-requisite See “System Fault Management” (page 148).

- Update-UX and SW-GETTOOLS: Updated to reflect defect fixes. There are no new features or functionality in update-ux. See “Update-UX and SW-GETTOOLS” (page 149).
- “WBEM Services and Providers” (page 150)
 - HP WBEM Services for HP-UX: Updated to version A.02.07.04, which is a minor update to the HP WBEM Services A.02.07 that is already released with HP-UX 11i v1, 11i v2 and 11i v3. See “HP WBEM Services for HP-UX” (page 150).
 - **New:** Direct Attached Storage Provider (DAS Provider): Contains Indication and Instance providers which deliver information about the direct attached storage devices on a HP-UX 11.31 server. Delivered as a recommended (default-installed) product on all OEs. See “Direct Attached Storage Provider (DASProvider)” (page 151).
 - HP-UX WBEM Fibre Channel Provider: HP System Management Homepage (HP SMH) web page display is enhanced to provide detailed information about the FC adapter installed on the system. And more. See “HP-UX WBEM Fibre Channel Provider” (page 152).
 - HP-UX WBEM IOTree Indication Provider: System Management Homepage (HP SMH) web page display is enhanced to provide detailed information about PCI I/O subsystem installed on the system. See “HP-UX WBEM IOTree Indication Provider” (page 153).
 - HP-UX WBEM Kernel Providers: Boot provider supports Modify Instance feature, which enables the user to modify boot instance parameter values. See “HP-UX WBEM Kernel Providers” (page 154).
 - HP-UX WBEM Online Operations Service Provider: Updated to incorporate a defect fix. See “HP-UX WBEM Online Operations Service Provider” (page 155).
 - HP-UX WBEM RAIDSA Provider: System Management Homepage (HP SMH) web page display is enhanced to provide detailed information about Smart Array HBAs installed on the system. And more. See “HP-UX WBEM RAIDSA Provider” (page 155).
 - HP-UX WBEM SAS Provider: System Management Homepage (HP SMH) web page display is enhanced to provide detailed information about SAS HBAs installed on the system. And more. See “HP-UX WBEM SAS Provider” (page 156).
 - HP-UX WBEM SCSI Provider: System Management Homepage (HP SMH) web page display is enhanced to provide detailed information about SCSI HBAs installed on the system. And more. See “HP-UX WBEM SCSI Provider” (page 157).
 - HP-UX WBEMP-LAN Provider: You can obtain detailed Ethernet-based LAN card properties information from the HP SMH application. And more. See “HP-UX WBEMP-LAN Provider” (page 158).

Chapter 6 (page 161)

- **New:** MemFS: A memory-based filesystem that provides fast access to temporary files by storing them in main memory. Software Pack product. See “MemFS” (page 162).
- ONCplus: Updated to version B.11.31.06.01. Delivers IPv6 support for the `rpc.rquotad`, `rpc.rstatd`, `rpc.sprayd`, `rup`, and `spray` commands and daemons. Also delivers ONC 2.5 functionality for the NFSv2 and NFSv3 Client. See “ONCplus” (page 162).

Chapter 7 (page 165)

- Firefox, FirefoxSrc: Updated to version 2.0.0.16. Fixes several security vulnerabilities reported by the Mozilla Foundation. See “Browsers” (page 166).
- Thunderbird, ThunderbirdSrc: Updated to version 2.0.0.16. Fixes several security vulnerabilities reported by the Mozilla Foundation. See “Browsers” (page 166).
- HP CIFS Server: Updated to 3.0j version A.02.03.04. Contains the security fix for CVE-2008-1105 and defect fixes. See “HP CIFS Server” (page 167).
- HP-UX Auto Port Aggregation: Supports the use of Internet Protocol over InfiniBand (IPoIB) interfaces to create failover groups (`LAN_MONITOR` mode). See “HP-UX Auto Port Aggregation” (page 167).

- “HP-UX Web Server Suite” (page 168)
 - HP-UX Apache-based Web Server: Updated to v.2.0.59.08 as primarily a security/bug fix release. See “HP-UX Apache-based Web Server” (page 169).
 - HP-UX Tomcat-based Servlet Engine: Updated to v.5.5.27.02. Implements the Servlet 2.4 and JavaServer Pages 2.0 specifications. See “HP-UX Tomcat-based Servlet Engine” (page 169).
- “Internet Services” (page 170)
 - HP-UX Mail Server (Sendmail): Updated to incorporate defect fixes. See “HP-UX Mail Server (Sendmail)” (page 170).
 - HP-UX Nameserver (BIND): Support for RFC 4193 (Unique Local IPv6 Unicast Addresses). See “HP-UX Nameserver (BIND)” (page 171).
- LDAP-UX Integration: Provides several fixes, plus NGROUP support and Windows 2008 Support. See “LDAP-UX Integration” (page 171).
- Red Hat Directory Server for HP-UX: Updated to version B.08.00 with several enhancements, including stronger Hashed Password Storage support, improved SASL support for Kerberos Authentication, file hierarchy system support, and more. See “Red Hat Directory Server for HP-UX” (page 172).

Chapter 8 (page 175)

- HP-UX Auditing and Security Attributes Configuration (`secweb`): Updated to incorporate defect fixes. See “HP-UX Auditing and Security Attributes Configuration (`secweb`)” (page 176).
- HP-UX Bastille: Updated to version **B.3.1.01**. Expanded security hardening choices in this *major* revision of Bastille allow you to further lockdown your systems in order to align with the latest CIS Benchmark for HP-UX (or other similar security hardening standards). See “HP-UX Bastille and Install Time Security” (page 176).
- HP-UX IPFilter: Updated to version A.11.31.16. Includes performance improvements, new command option for `ipfstat`, and defect fixes. See “HP-UX IPFilter” (page 178).
- **New:** HP-UX Password Hash Infrastructure for HP-UX 11i v3: Enhances the security on HP-UX 11i v3. Provides a new, SHA512-based algorithm for user password hashes as an alternative to the traditional, DES-based password hash algorithm. Only available on systems with shadowed passwords. Software Pack product. See “HP-UX Password Hash Infrastructure for HP-UX 11i v3” (page 178).
- HP-UX Secure Shell: Updated to version A.05.00.026. Based on OpenSSH5.1p1 and includes several new features and defect fixes. See “HP-UX Secure Shell” (page 180).
- **New:** HP-UX Security Containment Extensions: Simplifies the configuration of application containment and enables compartment login restrictions for enhanced application stacking and workload consolidation. See “HP-UX Security Containment Extensions” (page 180).
- HP-UX Software Assistant: Updated to version C.02.11. Now allows you to select the analyzers to be used when generating reports within HP SIM and now supports Java™ SE6. And more. See “HP-UX Software Assistant” (page 181).
- **New:** Kerberos Client (`KRB5CLIENT`): Helps to provide Kerberos authentication and strong cryptography for secure communication over the network. Software Pack product. See “Kerberos Client” (page 182).
- OpenSSL: Provides enhanced security features, additional public-key encryptions, additional hardware ENGINES. Includes defect fixes. See “OpenSSL” (page 184).

Chapter 9 (page 187)

- **New:** `CpioCmdEnh`: Can archive and extract files with UID and GID > 60K. Software Pack product. See “`CpioCmdEnh`” (page 188).
- `diskowner(1M)` Command: Enhanced to identify the Extensible Firmware Interface (EFI) partitions present on the disk. Enhanced to list all subsystem names that are all using the specified path. See “`diskowner(1M)` Command” (page 188).

- *ioscan(1M)*: New option can produce a compact listing which includes *alias_path* property. See “*ioscan(1M)*” (page 189).
- *mediainit(1)* Command: New option, *-S*, scrubs the disk media content with a set of patterns so that retrieval of its content becomes more difficult. See “*mediainit(1)* Command” (page 189).
- **New:** PAX-ENH: With this enhancement, the *pax(1)* command supports backup of ACLs and usage of graph files. Software Pack product. See “PAX-ENH” (page 190).

Chapter 10 (page 193)

- “Java 2 Standard Edition Platform” (page 194)
 - JDK/JRE 6.0 (including add-on) updated to version 6.0.02 for defect and security bulletin fixes. Allocation Site Statistics and Zero Preparation Verbosegc features are implemented. See “Java JDK/JRE for HP-UX” (page 194).
 - JDK/JRE 5.0 (including add-on) updated to version 5.0.14 to include the Sun 1.5.0_16 drop and incorporate defect and security bulletin fixes. Allocation Site Statistics and Zero Preparation Verbosegc features are implemented. See “Java JDK/JRE for HP-UX” (page 194).
 - SDK/RTE 4.0 (including add-on and plug-in) updated to version 1.4.2.21 to include the Sun 1.4.2_18 drop and incorporate defect and security bulletin fixes. SDK 1.4.2.21 designed to take advantage of more efficient memory management algorithms being implemented in HP-UX. See “Java JDK/JRE for HP-UX” (page 194).
- **New:** Libc Enhancement: Contains new APIs to get instantaneous thread time consumption statistics for bound threads. See “Libc Enhancement” (page 195).
- Perl: Has moved from ActivePerl to OpenSource Perl on HP-UX. See “Perl” (page 196).
- pthread Library: New API, *pthread_yield(3T)*, is provided. Enables the unbound thread to yield in user space (yielding between user threads). See “pthread Library” (page 196).
- MallocNextGen: Applications that allocate many large blocks of size greater than 128 KB may see improved memory utilization. See “MallocNextGen” (page 197).

Chapter 11 (page 199)

- *iconv* Codeset Conversion: Supports more varied forms of user or third-party codeset translation tables for MFCONV. See “*iconv* Codeset Conversion” (page 200).

Chapter 12 (page 201)

- **New:** HP-UX Parallel Umounts (*UmountallEnh*): A multi-threaded *umountall* feature that unmounts all or selected filesystems in parallel. Software Pack product. See “HP-UX Parallel Umounts (*UmountallEnh*)” (page 202).
- Locality-Optimized Resource Alignment (LORA): Patches have been delivered in the March 2009 FEATURE111i patch bundle to enable future support of the Locality-Optimized Resource Alignment (LORA) feature. Some patches also include changes for other features and defect fixes. See “Locality-Optimized Resource Alignment (LORA)” (page 202).

What is New in the HP-UX 11i v3 September 2008 Release

The following summaries pertain to the September 2008 HP-UX 11i v3 release. In particular, they provide general picture of how the September 2008 release of HP-UX 11i v3 differs from the March 2008 release of HP-UX 11i v3. For further information, see the indicated chapters in the *HP-UX 11i Version 3 September 2008 Release Notes*, available in its most current version at

<http://docs.hp.com/en/oshpux11iv3.html>

September 2008 Release Notes, Chapter 2: "Introduction to HP-UX 11i Version 3"

- Original HP-UX 11i v3 Operating Environments (OEs): The March 2008 release of HP-UX 11i v3 was the last full Operating Environments Update Release (OEUR) release provided for the **original** HP-UX 11i OEs.
- New HP-UX 11i v3 Operating Environments: With the March 2008 release, HP first presented a set of **new** Operating Environments for HP-UX 11i v3. These new OEs provide a richer set of products and improved choices over the original set of HP-UX 11i OEs. In the September 2008 OEUR, several new products and features have been added. See the remainder of this section for summaries of the new products and features.
- Software Pack (Optional HP-UX 11i v3 Core Enhancements): Several new and updated Software Pack products are available in the Operating Environments as optional products.

September 2008 Release Notes, Chapter 4: "Hardware-Specific Information"

- Hardware Enablement Patch Bundle for HP-UX 11i v3 (HWE`enable11i`): Provides support for new PCI-Express I/O adapters in HP Integrity Servers, and HP-UX support for HP servers with PA8900 processors and the sx2000 chipset. Supports the AMD/ATI Radeon 7000 graphics adapter and improved kernel debugger support for HP LAN cards. Also supports the optional HP-UX Dynamic nPartitions feature for servers without System Bus Adapter devices.
- HP Instant Support Enterprise Edition: No longer included. Has reached end of life. New solution: HP Service Essentials Remote Support Pack.
- **New:** HP-UX Scheduler Enhancements for Power Management: A new dynamic tunable is provided to dynamically enable or disable the mechanism to put processors in low power consumption state when idle.
- **New:** HP-UX Swapoff: Provides the ability to remove swap devices without rebooting the system. This feature is enabled by a new command and an enhanced system call. The command is a Software Pack feature and is optional on all OEs.
- Networking and Mass Storage Drivers
 - `10GigEthr-00`: Updated to include accelerated virtual I/O (AVIO).
 - `10GigEthr-01`: Newly added as an optional product to the Operating Environments and includes accelerated virtual I/O (AVIO).
 - `CommonIO`: Updated with quality improvements.
 - `FibrChan1-00`: Updated to incorporate defect fixes.
 - `FibrChan1-01`: To see what's changed from one release to the next, see the driver's release history.
 - `FibrChan1-02`: Updated to incorporate defect fixes.
 - `GigEther-01`: The gigabit interface to be configured to connect at **ONLY** speed 100FD and fail if there is a fallback in the speed (100FD/100HD or 10FD/10HD). Supports accelerated virtual I/O (AVIO) to significantly improve Integrity VM (HPVM) I/O performance.
 - `IB4X-00`: Includes defect fixes and enhancements.
 - `IEther-00`: To see what's changed from one release to the next, see the `IEther-00` driver's release history.
 - `PCIMUX-00`: Diagnostic utility `pmux_diag` for AD278A/AD279A now supports several new functionalities. Includes defect fixes.
 - `RAID-01`: Updated with quality improvements.

- `scsiU320-00`: Updated with quality improvements.
- `SerialSCSI-00`: Updated with quality improvements.
- I/O Subsystem: Includes defect fixes and usability enhancements to enhance the system's availability, performance, and ease-of-use.
- Mass Storage Stack: Includes defect fixes and usability enhancements to enhance the system's availability and ease-of-use.
- Utility Pricing Solutions
 - HP Instant Capacity: Includes the ability to create a standby Group Manager to be available for use as an active Group Manager if the current Group Manager is unavailable. Improvements in iCAP and GiCAP logging. And more.

September 2008 Release Notes, Chapter 5: "General System Administration"

- Boot Loader: Includes several enhancements, including, in the Itanium-based Boot Loader, warning that more than one console output devices are configured.
- Distributed Systems Administration Utilities: Upgrade to new versions of open source components has the latest features and defect fixes, and further minimizes any complexities. Now that DSAU supports the UPCC-style Serviceguard packages, you can experience better ease-of-use.
- Dynamic Root Disk: Supports rehosting, the ability to create a clone on one system, then boot the clone on another system by providing personality information about the new system. The September 2008 release supports this capability for rehosting from blade to blade using Virtual Connect, and from VM to VM.
- Event Monitoring Service: Updated to incorporate defect fixes.
- Feature Enablement Patch Bundle (`FEATURE11i`): Updated for HP-UX 11i v3 with new patches that enhance or provide new core features (including performance improvements) and enable support for base page sizes larger than 4 KB on Itanium, Numeric User Group Name, Integrity VM (HPVM) support, FIFO performance improvements, Internationalization improvements, and many other enhancements.
- **New:** FIFOENH: Provides high and low thresholds on buffered data in the pipe. As a result, major performance improvement can be seen on a multiprocessor environment when multiple threads are operating on the same fifo. Software Pack feature, optional on all OEs.
- High Availability Monitors: Updated to incorporate defect fixes.
- HP Caliper: Features and changes include support for thread contention analysis and visualization; data-centric cache profiling; scaling of the system-wide performance view to larger cell-based systems; and many others.
- HP GlancePlus Pak: New metrics are included.
- HP Partitioning and Virtual Server Environment
 - **New:** Accelerated Virtual I/O (AVIO): Added are three new Accelerated Virtual I/O device drivers. Provide significant performance improvements over the existing VIO products.
 - HP Application Discovery Agent: Updated to version A.04.00.07.33 to incorporate defect fixes.
 - HP Global Workload (gWLM) Agent: The bundle name has changed from T2743AA to gWLMAgent.
 - **New:** HP Instant Capacity Manager: A web-based interface that can be used to monitor your Instant Capacity (iCAP) environment. Newly added as a component of the VSE Management Software (`VSEMgrmt`). Delivered as an optional product in VSE-OE and DC-OE.
 - **New:** HP Integrity Virtual Machines: A soft partitioning and virtualization technology that provides operating system isolation, with sub-CPU allocation granularity and shared I/O. Version 4.0 added to the VSE-OE and DC-OE.

- HP Integrity VM Guest Support Libraries (VMGuestLib): Includes support for the new features of HP Integrity Virtual Machines V4.0, which supports the HP-UX 11i v3 operating system as a VM Host.
 - HP Integrity Virtual Machines Provider (VMProvider): Supports the new features of HP Integrity Virtual Machines V4.0, including support for the HP-UX 11i v3 operating system as a VM Host.
 - HP Process Resource Manager: The `prmconfig` command now has a `-c` option, which performs a subset of the `prmconfig -s` checks. Also includes other changes.
 - HP Virtual Server Environment (VSE) Management Software (VSEMgr): Updates to components such as HP Virtualization Manager, HP Capacity Advisor, HP Integrity Virtual Machines Manager, PRMSIMTools, and more. VSEMgr includes a defect fix.
 - HP-UX nPartition Configuration Commands: Updated to incorporate defect fixes.
 - HP-UX Virtual Partitions: Updated to version A.05.04. Includes defect fixes, support for directed LAN boot, support for tunable base page size, and NUMA advisor support.
 - HP-UX Workload Manager: Supports IPv6. Changes in `wlmd -p` behavior and more usernames allowed. Java 1.5 or later required for GUI and wizard.
 - nPartition Provider: Updated to version B.31.01.10.05 to incorporate defect fixes.
 - Partition Manager: v2.0, version B.31.02.04.01. Updated to incorporate defect fixes.
 - PRMKernelSW: Version number has changed in support of the update to HP PRM.
 - PRMLibraries: Version number has changed in support of the update to HP PRM.
 - Utilization Provider for HP-UX 11i v3: Updated to version A.01.07.14.01 to support VSE Management Software version 4.0.
 - **New:** VMKernelSW: One of the software bundles that is used with HP Integrity Virtual Machines (HPVM) V4.0.
- HP Serviceguard NFS Toolkit: Now supports highly available NFSv4 servers and now supports SecureNFS with Kerberos environment. .
 - HP System Management Homepage: Updated to version A.2.2.9 to incorporate defect fixes and support for virtual IDs.
 - HP Systems Insight Manager: Updated to version 5.2 with enhancements for Remote Support Pack.
 - HP-UX Accounts for Users and Groups: Supports use of numeric login names for local and NIS user names and group names.
 - HP-UX Kernel Configuration: Allows you to obtain separate graphically represented reports for usage of kernel resources for time intervals of Five Minutes, Hourly, Daily, and Weekly.
 - HP-UX Peripheral Devices Manager: Supports FC (Fibre Channel) adapters.
 - Ignite-UX: Updated to version C.7.7. Supports new hardware enabled by the HP-UX release. Includes defect fixes.
 - **New:** Kernel Tracing on HP-UX (`kttracer`): Provides the ability to analyze and troubleshoot HP-UX operating system behavior. Captures information on kernel procedure calls, parameters and timing across all processes and processors, and reports it on demand.
 - Logical Volume Manager: Increased limits of Version 2.1 volume groups enable much larger and more flexible LVM configurations. Other features improve the availability and usability of the server.
 - Network Interfaces Configuration and Network Services Configuration: Updated to incorporate defect fixes.
 - NGROUPS Expansion: Allows users and processes to have group-level permissions based on a larger number of groups than the previous fixed limit.
 - Obsolescence Bundle: Used during an update when obsolete software on the system needs to be removed. Is automatically selected for updates. During the update process selected obsolete or incompatible products and/or drivers are removed.
 - Online Diagnostics: Supports updated to support new and future HBAs.

- Printer Management (web-based): Provides support in the TUI for adding remote printer and for adding printer to a TSM terminal.
- Quality Pack Patch Bundles (QPKAPPS and QPKBASE): Third release for HP-UX 11i v3 with a sizable increase in the number of defect fix patches included.
- Software Distributor: Updated to incorporate defect fixes.
- Software Package Builder: Updated to incorporate defect fixes. Now supports detection of possible installation errors in addition to the packaging errors.
- System Fault Management: Several changes including the introduction of MCA Indication Provider and ComputerSystem Chassis Provider, and support for MCA logs and Agile information.
- **New:** Tunable Base Page Size: Enhancement makes it possible to tune the size of the system base page, which was formerly fixed at 4 KB. Now the additional sizes 8 KB, 16 KB, and 64 KB are available. The larger system base page size reduces the kernel's memory footprint and makes certain memory management operations more efficient.
- **New:** Tune-N-Tools: Delivers the tool *tuneserver(1m)*. When executed, sets kernel tunables to values appropriate for major customer business application workloads.
- Update-UX and SW-GETTOOLS: Updated to incorporate defect fixes.
- Virtual Server Environment Configuration Assistant (VseAssist): Extended with additional checks supporting new features of VSE Management Software version 4.0, including updated licensing checks and a new iCAP status check.
- Wbem Services and Providers
 - HP Wbem Services for HP-UX: Updated to incorporate defect fixes and support for virtual IDs.
 - HP-UX Wbem Fibre Channel Provider: Updated to incorporate defect fixes.
 - HP-UX Wbem IOTree Provider: Supports consolidated status (CSP) feature.
 - HP-UX Wbem Kernel Providers: Support new features.
 - HP-UX Wbem RAIDSA Provider: Updated to incorporate a defect fix.
 - HP-UX Wbem SAS Provider: Updated to incorporate a defect fix.
 - HP-UX Wbem SCSI Provider: Updated to incorporate defect fixes.
 - HP-UX WbemP-LAN Provider: Supports new 1000fd data transfer speed setting. New operational status for LAN cards are available. LAN Indication Provider is supported with DLPI patch PHNE_37799.

September 2008 Release Notes, Chapter 6: "Disk and File Management"

- **New:** Base-VxTools-50: Contains a set of enablers and infrastructure tools for VxVM.
- HP CIFS Client: Updated to version A.02.02.02. Maintenance release that mainly contains defect fixes and a few minor enhancements.
- HP CIFS Server: Updated to 3.0i version A.02.03.03. Provides security fixes and several defect fixes. Supports new configuration parameters in `smb.conf`.
- HP-UX Disks and File Systems: Additional LVM functions are possible, a paging device can be deleted without having to reboot the system, and the NFS automounter and AutoFS functions can be performed.
- ONCplus: Updated to version B.11.31.04. Delivers full NFSv4 functionality. Also delivers IPv6 support for the `on`, `rpc.rexd`, `rpc.rwalld`, `rpc.rusersd`, `rusers`, and `rwall` commands and daemons. In addition, performance has been optimized in several areas of NFS.
- **New:** OnlineJFS 5.0: Available as an optional product in DC-OE, VSE-OE, and HA-OE.
- **New:** VxFS 5.0: Provides you with new commands and features for managing files of increased sizes, and better optimization of storage resources.
- **New:** VxVM 5.0: Provides enhanced volume management features, improved cluster and node functionality and additional multipathing capabilities.

September 2008 Release Notes, Chapter 7: "Internet and Networking"

- HP-UX Auto Port Aggregation: Supports improved HP Integrity Virtual Machine support.
- HP-UX Web Server Suite
 - HP-UX Apache-based Web Server: Updated to v.B.2.0.59.07. Primarily a security/defect fix release.
 - HP-UX Tomcat-based Servlet Engine: Tomcat version upgraded to 5.5.23.02. Tomcat version 5 implements the Servlet 2.4 and JavaServer Pages 2.0 specifications. Tomcat 5.5.x is designed to run on JDK 1.5 and later versions.
- Firefox, FirefoxSrc: Updated to version 2.0.0.12. Includes Firefox 2.0.0.12 changes from the Mozilla Foundation. This version fixes several security vulnerabilities reported by the Mozilla Foundation.
- Thunderbird, ThunderbirdSrc: Updated to version 2.0.0.12. Fixes several security vulnerabilities reported by the Mozilla Foundation.
- Internet Services
 - HP-UX FTP Server (WU-FTPD): New audit reporting APIs are enabled in *ftpd(1M)*. *ftpd(1M)* supports more than 20 user groups (NGROUPS). Includes defect fixes.
 - HP-UX Mail Server (Sendmail): *Sendmail(1M)* supports user groups (NGROUPS) more than 20. Includes defect fixes.
 - HP-UX Nameserver (BIND): *named(1M)* now supports 64-bit addresses. Includes defect fixes.
- **New:** IPv6 Upgrade for HP-UX 11i v3: Privacy extension to IPv6 auto-configuration feature is available in the IPv6 Upgrade bundle. Software Pack product. Optional on all OEs.
- LDAP-UX Integration: Updated to version B.04.17. Maintenance release that provides several fixes.
- Red Hat Directory Server for HP-UX: Updated to version B.07.10.40. Maintenance release that mainly delivers defect fixes.

September 2008 Release Notes, Chapter 8: "Security"

- HP-UX Secure Shell: Updated to version A.05.00.023. Added several defect fixes and enhancements.
- HP-UX Software Assistant: Updated to version C.01.05. Includes integration with HP SIM, improved HTML report, and improved administration guide.
- OpenSSL: Updated to version A.00.09.08g.031. Federal Information Processing Standard (FIPS) 140-2 OpenSSL is now added to the OpenSSL product.

September 2008 Release Notes, Chapter 9: "Commands and System Calls"

- *getaddrinfo(3N)* Function: Modified to support Destination Address Selection algorithm defined in RFC 3484.
- *ioinit(1M)* Command: New option *-A* invokes Critical Resource Analysis and generates usage report, before modifying existing instance number of an IO node.
- *ioscan(1M)* Command: *-P* option of the command has been enhanced to accept new properties.
- *mpsched(1)* Command: Enhanced to provide the system topology information at Proximity, Socket and Core level. You can use this information to create processor sets by choosing SPUs with appropriate locality.
- *scsimgr(1M)* Command: More user-friendly identifiers enhance the usability of the mass storage stack.

September 2008 Release Notes, Chapter 10: "Libraries and Programming"

- **New:** Decimal Floating-Point Arithmetic: Includes support for decimal floating-point (decimal FP) arithmetic for C on HP-UX 11i v3 (11.31) September 2008 Update for Integrity

servers, following the current draft revision of the IEEE 754 floating-point standard and ISO/IEC Technical Report 24732.

- **New:** Dynamic System V Semaphore Tunables: Allows the system administrator to change the system V semaphore tunable(s) value(s) dynamically without requiring a reboot of the system. Software Pack product. Optional on all OEs.
- HP WildeBeest Debugger: Provides decimal floating point debugging support, improved memory debugging capabilities, improved Core file debugging support, and more.
- HP-UX Linker and HP Dynamic Loader: Features include improved `fastbind` mechanism for decreasing program startup time; improved `dld` startup time; non-suspension of threads; and more.
- Java 2 Standard Edition Platform
 - **New:** Java JDK/JRE for HP-UX: JDK/JRE version 6.0 is a new version of the HP-UX Java Development Kit (JDK) for the Java 2 Platform Standard Edition. JDK/JRE version 5.0 and SDK/RTE 1.4.2 have been updated to incorporate defect and security bulletin fixes.
- Libc Enhancement: The `printf(3S)` and `scanf(3S)` family of functions have been enhanced to recognize decimal floating point conversion specifiers. Software Pack product. Optional on all OEs.
- `libIO.so` Shared Library: Provides APIs for accessing the kernel I/O system data structures maintained by the HP-UX I/O subsystem. Delivers new shared libraries which are thread safe.
- **New:** MallocNextGen: Provides a totally new implementation of the user space memory allocator. This new allocator may show better performance for multi-threaded applications or applications with small block allocations. Software Pack product. Optional on all OEs.
- **New:** Numeric User Group Name: With this feature it is possible to create user/group names that begin with a numeric character and in turn be entirely numeric. Software Pack product. Optional on all OEs.
- Perl: Updated to version 5.8.8 build 822.2 to incorporate defect fixes. Includes performance improvements.

September 2008 Release Notes, Chapter 11: “Internationalization”

- European TrueType Fonts Extension - Arabic, Hebrew, Thai, and Vietnamese: You can now print Arabic, Hebrew, Thai, and Vietnamese characters using the PostScript print filter.
- Internationalized PostScript Printing Enhancements: Includes support for the printing and proper shaping of Arabic, Hebrew and Thai characters with enhanced bidirectional printing support; new PostScript Printer Description (PPD) files to support additional HP PostScript printers; illegal command line options will now be listed in the banner page; and more.
- New and Updated Asian Iconv Converters: Several Asian character sets now have `iconv` conversion support added to convert data directly from these character sets to and from various transformation formats of Unicode such as UTF-8, UTF-16 and UTF-32.

September 2008 Release Notes, Chapter 12: “Other Functionality”

- There are no changes in September 2008 for the products or features that are normally documented in this chapter.

What is New in the HP-UX 11i v3 March 2008 Release

The following summaries pertain to the March 2008 HP-UX 11i v3 release. For further information, see the indicated chapters in the *HP-UX 11i Version 3 March 2008 Release Notes*, available in its most current version at

<http://docs.hp.com/en/oshpux11iv3.html>

March 2008 Release Notes, Chapter 2: "Introduction to HP-UX 11i Version 3"

- Original HP-UX 11i v3 Operating Environments (OEs): The March 2008 release of HP-UX 11i v3 is the last full Operating Environments Update Release (OEUR) release provided for the **original** HP-UX 11i OEs.
- **New:** HP-UX 11i v3 Operating Environments: With the March 2008 release, HP presents a set of **new** Operating Environments for HP-UX 11i v3. These new OEs provide a richer set of products and improved choices over the original set of HP-UX 11i OEs.
- Software Pack (Optional HP-UX 11i v3 Core Enhancements): Several Software Pack products are available in the Operating Environments as optional products.

March 2008 Release Notes, Chapter 4: "Hardware-Specific Information"

- **New:** Graphics: Newly delivered as an optional product in the HP-UX 11i v3 BOE, VSE-OE, HA-OE, and DC-OE.
- Hardware Enablement Patch Bundle (`HWEnable11i`) for HP-UX 11i v3: Provides support for new PCI-Express I/O adapters in HP Integrity Servers, and HP-UX support for HP servers with PA8900 processors and the sx2000 chipset. Includes new patches that enable the HP Insight Power Manager (IPM) for supported systems with Intel® Itanium® processors 9100 series. Also includes patches that enable the PCI-express Error Recovery (PCIe-ER) functionality on HP Integrity servers with the sx2000 chipset.
- HP Instant Support Enterprise Edition: Updated to version A.03.95.520.22.05. Provides minor defect fixes. HP Runner is no longer bundled with HP ISEE installations.
- I/O Subsystem: The `rmsf` command supports the `-H` option with the `-x` option to remove stale device special files associated with a specific hardware path. Adding or deleting CPUs redistributes I/O interrupts more equitably across the CPUs. And more.
- Mass Storage Stack: Offers new performance and usability options to manage multi-pathed disks and disk arrays, and more.
- Networking and Mass Storage Drivers
 - `10GigEther-00` : Supports the new AD385A 266Mhz PCI-X 10 Gigabit Ethernet cards as well as the AB287A cards.
 - `CommonIO`: Updated with quality improvements.
 - `FibrChan1-00`: Updated to add support for users to update the EFI driver for the Tachyon XL2 (A6795A) Fibre Channel HBAs using the FC Mass Storage utility `/opt/fcms/bin/fcmsutil`.
 - `FibrChan1-01`: Updated to incorporate defect fixes.
 - **New:** `FibrChan1-02`: First release on HP-UX 11i v3: recommended product on all OEs. Driver for the Fibre Channel HBAs.
 - `GigEther-01`: Change history is located on <http://docs.hp.com>.
 - `IB4X-00`: Updated to incorporate defect fixes.
 - `IEther-00`: Change history is located on <http://docs.hp.com>.
 - `RAID-01`: Updated with quality improvements.
 - `scsiU320-00`: Updated with quality improvements.
 - `SerialSCSI-00`: Updated with quality improvements.
 - `USB-00`: Updated to version C.01.05.08. Install kernel for the HP-UX 11i March 2008 release contains an EHCI driver (USB 2.0 hi-speed capability) which significantly decreases the time necessary for installs from local USB devices. Includes defect fixes.

- **New:** Proximity Topology: Provides a mechanism to programmatically determine a system's proximity topology in order to make informed decisions to minimize cache-to-cache latency.
- Utility Pricing Solutions
 - The HP Instant Capacity: Updated with defect fixes and several enhancements, including GiCAP Disaster Recovery, which allows customers to transfer usage rights to other group members when a member is unavailable.

March 2008 Release Notes, Chapter 5: "General System Administration"

- Distributed Systems Administration Utilities: Supports cross subnet Serviceguard configurations.
- Dynamic Root Disk (DRD): Supports cloning of a VxVM root on HP-UX 11i v3. Introduces the `drd status` command, which allows the user to easily view clone information on the system.
- **New:** EMSWeb: Event Monitoring Service (on SAM) is now available as EMSWeb tool on the HP System Management Homepage (HP SMH). Provides both web-based GUI and TUI.
- Enterprise Cluster Master Toolkit: Newly added as a recommended product to the HA-OE and DC-OE. Supports Storage Management Suite version 2.0 on HP-UX 11i v3.
- Feature Enablement Patch Bundle (FEATURE11i): Updated for HP-UX 11i v3 with new patches that enhance core features (including performance) and enable the support of the vPars, Version 2.0 LVM volume groups, Integrity VM (HPVM), and new core products.
- **New:** HP Caliper: A general-purpose performance analysis tool for applications, processes, and systems. Allows you to understand the performance and execution of an application and to identify ways to improve its run-time performance. Newly added as a recommended product to the BOE, HA-OE, VSE-OE, DC-OE.
- HP GlancePlus Pak: Updated to version 4.70. A set of new metrics have been added in HP Performance Agent.
- Hp Partitioning and Virtual Server Environment
 - **New:** Accelerated Virtual I/O (GuestAvioLan): Delivers a new re-architected I/O path for Integrity VM (HPVM). Newly delivered as a recommended product on the HP-UX 11i v3 BOE, HA-OE, VSE-OE, DC-OE, and the FOE, EOE, MCOE, TCOE.
 - HP Integrity VM Guest Support Libraries (VMGuestLib): Upgrade to version A.03.50 includes support for the new features of HP Integrity Virtual Machines A.03.50.
 - HP Integrity Virtual Machines Provider (VMProvider): Upgrade to A.03.50 supports the new features of HP Integrity Virtual Machines A.03.50.
 - **New:** HP Process Resource Manager: Newly delivered as a recommended product in the BOE, VSE-OE, HA-OE, and DC-OE.
 - **New:** HP Virtual Server Environment: Integrates with HP SIM to provide intelligent control of your virtualized environment from one location. Components assist in planning and automating system and application management tasks, and allow you to optimize server utilization in real time by creating virtual servers that can automatically grow and shrink based on business priorities and service-level objectives. Several individual VSE products/components are delivered as optional or recommended products on the new OEs, providing you with a variety of options.
 - HP-UX nPartition Configuration Commands: Updated to incorporate defect fixes.
 - **New:** HP-UX Virtual Partitions: Version A.05.03 enables multiple instances of the HP-UX 11i v3 OE to run simultaneously on one server or within one nPartition, with each OE instance hosting its own set of applications in a isolated environment. Newly added as an optional product to the HP-UX 11i v3 VSE-OE and DC-OE.
 - **New:** HP-UX Workload Manager: Newly delivered as a recommended product in the VSE-OE and DC-OE. Updated to incorporate defect fixes.
 - **New:** Workload Manager Toolkits: Newly delivered as a recommended product in the VSE-OE and DC-OE.

- nPartition Provider: Updated to version B.31.01.10.03 to incorporate defect fixes.
- Utilization Provider: Updated to version A.01.06.03.03 to incorporate defect fixes.
- vPar Provider: Updated to incorporate defect fixes.
- HP Serviceguard: Now delivered as a recommended product in the HA-OE and DC-OE. Other updates available independent of the OEs.
- HP Serviceguard NFS Toolkit: Documentation updated to include information about support for Veritas Cluster File System (CFS).
- HP System Management Homepage for HP-UX: Updated to version A.2.2.8 to incorporate defect fixes.
- HP Systems Insight Manager: Updated to version 5.2. Provides ability to discover all nPars in a complex, including those not currently active, from information gathered in one nPar and the ability to discover all vPars in a vparmonitor, including those not currently active, from information gathered in one vPar. New Manage Communications feature enables you to troubleshoot communication problems between the CMS and the managed systems. Includes much more.
- HP-UX Disks and File Systems: LVM operations are more scalable now because of the enhanced limits on VGs, LVs, and PVs. Includes other changes.
- HP-UX Kernel Configuration: Provides two new features: manage kernel configuration and restore the kernel configuration values of tunables and modules from the previous boot.
- Ignite-UX: Version C.7.5 includes recovery support for Agile SAS addressing, improved small memory install performance, support for new hardware.
- Logical Volume Manager: This release of LVM supports two versions of volume groups. Version 2.0, which is new in the March 2008 release of HP-UX 11i v3, enables the configuration of larger volume groups, logical volumes, physical volumes, and other parameters.
- **New:** MirrorDisk/UX: Is the mirroring component of Logical Volume Manager, and prevents data loss due to disk failures by maintaining multiple copies of data on separate disks. Newly delivered as an recommended product in the VSE-OE, HA-OE, and DC-OE.
- Network Interfaces Configuration and Network Services Configuration: Updated to incorporate defect fixes.
- **New:** NUMA policy is a tunable and a set of related kernel enhancements that exploit the localities within platforms having a Non-Uniform Memory Architecture. This contrasts with the default symmetric policy that treats all platform resources equally.
- Obsolescence Bundle: Used during an update when obsolete software on the system needs to be removed; automatically selected for updates. Will remove several obsolete or incompatible products and/or drivers, including TechSysConf.
- Online Diagnostics: Supports new I/O cards, added support for handling PCI-express errors, provides support for hot pluggable disks, and more.
- Printer Management tool: Now provides the Text User Interface in addition to the existing Graphical User Interface.
- Quality Pack Patch Bundles: Stable, defect-fix patch bundles for the OS and applications. In this release, both the Base Quality Pack bundle and the Applications Quality Pack bundle are provided.
- Software Distributor: Updated to incorporate defect fixes.
- Software Package Builder: Updated to incorporate defect fixes.
- System Fault Management: Now the default monitoring mode. Supports PCI Express interface events on selected systems. New providers are introduced; MP Provider is enhanced. More enhancements are included, as well as defect fixes.

- Update-UX: Supports the new OEs: BOE, VSE-OE, HA-OE, DC-OE. No new features or functionality in `update-ux`.
- WBEM Services and Providers
 - HP WBEM Services for HP-UX: Updated to version A.02.07: Major update includes IPv6 Enablement, Audit Logging, Repository Archive, Indication Subscription Management, and Privilege Separation.
 - HP-UX WBEM Fibre Channel Provider: Now supported by the System Management Homepage. New classes have been added to provide additional information.
 - HP-UX WBEM Kernel Providers (formerly KC Providers): Bundle now contains the Swap provider, and the Boot and Crash Dump providers.
 - HP-UX WBEM LVM Provider: Updated to support association between a VolumeGroup and the LogicalVolumes created within the group, and other configurations.
 - HP-UX WBEM Online Operations Service Provider: Updated to version B.01.02.01 to incorporate defect fixes.
 - HP-UX WBEM RAIDSA Provider: New classes have been added to get the consolidated health status of the Smart Array HBAs available on the system.
 - HP-UX WBEM SAS Provider: New classes have been added to get the consolidated health status of the SAS HBAs available on the system.
 - HP-UX WBEM SCSI Provider: Now supported by the HP System Management Homepage.

March 2008 Release Notes, Chapter 6: “Disk and File Management”

- ONCplus: Updated to B.11.31.02. Provides defect fixes and new features, including full NIS 2.3 client functionality (with the exception of `password.adjunct` support); full CacheFS 2.3 functionality; optimized performance in several areas of NFS; and more. Note: ONC fixes were delivered in patches prior to HP-UX 11i v3.

March 2008 Release Notes, Chapter 7: “Internet and Networking”

- Firefox, FirefoxSrc: Updated to version 2.0.0.4. Fixes several security vulnerabilities reported by the Mozilla Foundation.
- **New:** HP Auto Port Aggregation: Added to as an recommended product to the BOE, HA-OE, VSE-OE, DC-OE. Is a software product that creates link aggregates, often called “trunks,” which provide a logical grouping of two or more physical ports into a single “fat pipe.” This port arrangement provides more data bandwidth than would otherwise be available. In addition, HP APA provides automatic link failure detection and recovery, and optional support for load balancing of network traffic across all of the links in the link aggregate.
- HP-UX Web Server Suite
 - HP-UX Apache-based Web Server: Updated as primarily a security/defect-fix release.
 - HP-UX Tomcat-based Servlet Engine: Updated to version 5.5.23.00. Implements the Servlet 2.4 and JavaServer Pages 2.0 specifications.
 - HP-UX Webmin-based Admin: Primarily a defect-fix release.
- Internet Services: Select Internet Services now updated through OEURs.
 - HP-UX FTP Server (WU-FTPD): Updated to version 2.6.1 to incorporate defect fixes.
 - HP-UX Mail Server (Sendmail): Updated to version 8.13.3. Incorporated defect fixes. New command-line option, `-T`, included in `identd(1M)`.
 - HP-UX Nameserver (BIND): Updated to version 9.3.2 to incorporate defect fixes.
- LDAP-UX Integration: Version B.04.15 provides new LDAP user/group command-line tools.
- Red Hat Directory Server for HP-UX: Version B.07.10.30.01 mainly provides a SD defect fix.
- Thunderbird, ThunderbirdSrc: Updated to version 2.0.0.6. Fixes several security vulnerabilities reported by the Mozilla Foundation.

March 2008 Release Notes, Chapter 8: “Security”

- HP-UX Auditing and Security Attributes Configuration: You will have access to both the Audit Configuration functional area of legacy SAM and the auditing functionality in the HP-UX Auditing and Security Attributes Configuration tool in HP SMH. Includes defect fixes.
- **New:** HP-UX Auditing System Extensions: Provides enhancements to the existing HP-UX auditing system, *audit(5)*. Offers tools to configure and enforce the data filtering policy for auditable file operations on your system. Policy is rule-based and can be customized for different file system partitions. Delivered as an optional product on all OEs.
- HP-UX Bastille: Updated to version B.3.0.31 incorporate defect fixes.
- HP-UX IPFilter: Updated to version 15.01 (A.11.31.15.01). Support for IPv6 interfaces; Dynamic Connection Allocation (DCA) feature and *ipftest* utility now support IPv6 rules; and more.
- **New:** HP-UX Role-based Access Control Extension: Introduces a set of privilege shells, allowing a non-root user to automatically invoke *privrun* when needed by simply configuring a privilege shell as their default shell. Includes integration with HP System Management Homepage and integration of access control logic directly into select commands. Delivered as an optional product in all OEs.
- HP-UX Secure Shell: Updated to version A.04.70.023. The *sshd* daemon defaults to SSH Protocol 2 in new installations; SSH channel window size has been increased; *ssh* command and *sshd* daemon now preserve MAC contexts between packets; new MAC algorithm has been added; and more.
- HP-UX Software Assistant: Has replaced Security Patch Check. Messages indicating the deprecation of Security Patch Check will be displayed when the Security Patch Check tool is invoked. Support for Security Patch Check will be terminated on November 1, 2008.
- OpenSSL: Contains some important defect fixes.

March 2008 Release Notes, Chapter 9: "Commands and System Calls"

- *intctl(1M)* and *intrbald(1M)* Commands: Enhanced to allow manual and automatic interrupt balancing based on user configuration files, with a choice of balancing algorithms.
- *ioscan(1M)* Command: Enhanced to show a new driver property that indicates if the driver supports online instance number replacement.
- *mpsched(1)* Command: Enhanced so you can now change the affinity of a thread/light weight process to a particular SPU or locality domain. You can also query the binding of a light-weight process or unbind the same.
- *rmsf(1M)* Command: Enhanced to support Critical Resource Analysis (CRA) on a node or special file before deleting it, and to support specifying a stale I/O node by hardware path.
- *rtsched(1)* Command: Enhanced to allow the change of the real time priority and/or scheduling policy of a thread/light weight process with the *-G* option.

March 2008 Release Notes, Chapter 10: "Libraries and Programming"

- **New:** aC++ Linker Driver (*aCC_link*): Invokes the HP-UX linker. Command is made available for linking aC++ objects for deployment on end-user systems. Explicitly disallows certain *aCC(1)* options used to compile. Newly delivered as a recommended product on the BOE, HA-OE, VSE-OE, and DC-OE.
- **New:** Copy-On-Write Functionality for Private Memory Objects: Provides copy-on-write functionality for privately mapped files, private segments of child process after *fork(2)* and private segments locked by *mlock(2)*.
- **New:** *getenv* Performance Enhancement: Enhances the performance of the *libc* API *getenv(3C)* for threaded applications. Delivered as an optional product in all OEs.
- **New:** HP MLIB: In TCOE, V9.5 includes a defect fix. HP MLIB is newly delivered as an optional product in VSE-OE, HA-OE, and DC-OE.
- **New:** HP-MPI: Newly delivered as an optional product in BOE, VSE-OE, HA-OE, and DC-OE.

- **New:** HP Wildebeest Debugger: An HP-supported implementation of the Open Source GNU debugger (GDB). Enables you to debug C, C++, and FORTRAN applications (32 bit and 64 bit versions) on Integrity and PA-RISC systems. Newly added as a recommended product to the BOE, HA-OE, VSE-OE, DC-OE.
- **New:** HP-UX Atomic APIs (`libatomic`): Usage of these APIs avoid the use of mutex locks or semaphores in certain scenarios. Delivered as an optional product in all OEs.
- **New:** Improved Support for Multi-threaded Applications: Extends the `mpctl(2)` API and adds several new APIs to improve HP-UX support for multi-threaded applications. Provides the capability to have finer-grain control.
- Java 2 Standard Edition Platform
 - Java JDK/JRE for HP-UX: JDK/JRE version 5.0 and SDK/RTE 1.4.2 have been updated to incorporate defect and security bulletin fixes.
 - Java Out-of-Box: Updated to version 2.05.00 to incorporate defect fixes.
- **New:** Kernel Access Infrastructure: HP-UX Virtual Memory provides a new set of APIs to map user virtual addresses into the kernel. Useful as a copy avoidance solution where user data can be accessed and modified by kernel contexts, avoiding the copying in and out of data when system calls are invoked.
- **New:** `libc` Enhancement: Contains a new API called `memsetU16(3C)`, which can be used for memory operations to set area in memory to contain 2-byte word. Delivered as an optional product in all OEs.
- **New:** `patch_active_text`: Allows `mprotect()` write access to the text of a running process such that the active text can be modified.

March 2008 Release Notes, Chapter 11: “Internationalization”

- Korean `iconv` Codeset Converters: The `iconv` converters for converting data between Korean EUC encoding and Unicode are updated to align the character mappings to match that of Microsoft Windows and other UNIX platforms.

March 2008 Release Notes, Chapter 12: “Other Functionality”

- There are no changes in March 2008 for the products or features that are normally documented in this chapter.

What is New in the HP-UX 11i v3 September 2007 Release

The following summaries pertain to the September 2007 HP-UX 11i v3 release. For further information, see the indicated chapters in the *HP-UX 11i Version 3 September 2007 Release Notes*, available in its most current version at

<http://docs.hp.com/en/oshpux11iv3.html>

September 2007 Release Notes, Chapter 2: "Introduction to HP-UX 11i Version 3"

- Software Pack (SPK): No SPK content delivered on media in the HP-UX 11i v3 September 2007 release. However, a couple of core enhancements, AccessControl and AtomicAPI, have been delivered on the HP Software Depot at <http://hp.com/go/softwaredepot>.

September 2007 Release Notes, Chapter 4: "Hardware-Specific Information"

- **New:** Hardware Enablement Patch Bundle for HP-UX 11i v3 (HWEEnable11i): Provides patches required for new systems and the latest Intel® Itanium® 2 processors, and for add-on hardware supported on HP-UX 11i v3, including I/O adapters and devices.
- **New:** HP Instant Support Enterprise Edition: Updated to version A.03.95.510.42.07 to incorporate defect fixes.
- Mass Storage Stack: New options to manage multi-pathed disks and disk arrays.
- I/O Subsystem: More networking & I/O drivers are DLKM-enabled, which means they can be dynamically loaded and unloaded from the HP-UX kernel without manually rebuilding the kernel or rebooting the system.
- Networking and Mass Storage Drivers
 - Required Networking Drivers
 - 10GigEthr-00: Updated to support UDP traffic over the destination port-based multi-queues and to display vital product data (vpd) by using the `nwmgr` command. DLKM-enabled.
 - GigEther-00: DLKM-enabled and defect fixes.
 - GigEther01: DLKM-enabled.
 - IEther-00 and Gigabit Ethernet: AD337A and AD338A PCI-Express is now supported; `iether` is DLKM-enabled.
 - 100BT (btlan): DLKM-enabled.
 - Ultra160 SCSI (c8xx): Driver is DLKM-enabled, but not all modules in patch are DLKM compliant.
 - Optional Networking Drivers
 - InfiniBand Clustering System: Supports additional PCIe cards; DLKM-enabled.
 - Required Mass Storage Drivers
 - CommonIO bundle: Support for additional FC HBAs; delivers SAS-COMMON, which contains utilities for managing specific SAS HBAs; delivers FC-COMMON, which contains utilities for managing specific FC HBAs.
 - FibrChan1-00: DLKM-enabled.
 - FibrChan1-01: DLKM-enabled. Defect fixes.
 - RAID-01: DLKM-enabled.
 - scsiU320-00: DLKM-enabled.
 - SerialSCSI-00: DLKM-enabled.
 - USB-00: Updated to version C.01.05.02 to incorporate defect fixes.
- Utility Pricing Solutions
 - iCAP (Instant Capacity): GiCAP disaster recovery, changes to TiCAP transfer and consumption; changes to `icapstatus` output; defect fixes.

September 2007 Release Notes, Chapter 5: "General System Administration"

- **New:** Feature Enablement Patch Bundle (FEATURE11i): Contains required patches for new or updated software products.
- **New:** Quality Pack Patch Bundles: Stable, defect-fix patch bundles for the OS and applications. This first release will deliver the Base Quality Pack bundle only. The Applications Quality Pack bundle will be delivered in later releases as patches qualify.
- **New:** Dynamic Root Disk (DRD): An HP-UX system administration toolset used to clone an HP-UX system image to an inactive disk for software maintenance and recovery. System administrators use DRD to manage system images on HP PA-RISC and Itanium®-based systems.
- Enterprise Cluster Master Toolkit: Updated to version B.04.01; support for HP-UX Apache on HP-UX Tomcat for CVM/CFS 5.0; support for HP CIFS/900 on CVM/CFS 5.0; support for CVM/CFS 5.0; enhanced Oracle toolkit; support for Serviceguard A.11.18.
- Event Monitoring Service: Updated to incorporate defect fixes.
- High Availability Monitors: Updated to incorporate defect fixes.
- HP OpenView GlancePlus Pak: Support for Integrity VM (HPVM) 2.0; configurable logging intervals and flush intervals; gpm renamed to xglance.
- HP-UX IPQoS: HP-UX IPQoS for earlier HP-UX releases (HP-UX 11i v1 and v2) is incompatible with HP-UX 11i v3 and so is removed by ObsIPQoS. However, a new, HP-UX v3-compatible version of HP-UX IPQoS is now available on the Application Release (AR) media for September 2007, as well as on Software Depot at <http://hp.com/go/softwaredepot>.
- LVM and MirrorDisk/UX: Parallel re-sync; parallel opens; alternate link behavior; defect fixes.
- EMS and STM: Supports Dynamic nPartitions, additional systems, and additional cards; monitors generates new events.
- System Fault Management: New WBEM providers; enhancements to the SFMIndication Provider; new Event Subscription Administration.
- HP Serviceguard: New package-creation process and enhanced support for package dependencies and multi-node packages; additional support for cluster parameters, APA and VLAN, Integrity VM (HPVM), and more.
- HP Serviceguard Extension for RAC: Support for VxVM 4.1, Cluster Interconnect Monitoring, SGeRAC Toolkit, Veritas CVM/CFS 4.1, and Oracle 9i & 10g R2 RAC.
- Ignite-UX: Supports new hardware for 11i v3, plus other changes.
- Update-UX and SW-GETTOOLS: Updated to incorporate defect fixes.
- Software Utilities:
 - Software Distributor: Updated to incorporate defect fixes.
 - Software Package Builder: Updated to incorporate defect fixes.
- HP Partitioning and VSE:
 - **New:** Dynamic nPartitions: cell online activation.
 - **New:** Dynamic nPartitions: cell online de-activation.
 - nPartition Configuration Commands: New parolrad command for Dynamic nPartitions operations.
 - nPartition Provider: Interpretation of Dynamic nPartitions capability bit is changed.
 - Partition Manager (parmgr): Support for Dynamic nPartitions.
 - Virtual Partitions (vPars): Support for PA systems running sx2000 chipset, pre-enablement for SCSI tape boot and recovery for Integrity systems. Purchased separately.
 - **New:** HP Application Discovery: Application Discovery agent (AppDiscAgent) is default-installed on the OE media. The agent securely supplies data to Application Discovery server at intervals that can be set by a system administrator.

- HP Global Workload Manager: Includes conditional policies related to Serviceguard events, usage of TiCAP resources based on policy level, support for Hyper-Threading, and further integration with other VSE products.
- HP Process Resource Manager: Provides an interface within HP SIM (System Insight Manager).
- PRMKernelSW (formerly known as PRM Libraries): Changes in fileset.
- PRMLibraries: Changes in product and fileset encapsulation. Now contains the PRM API.
- HP Integrity Virtual Machines Provider (VMProvider): Supports the new features of VM A.03.00.
- HP Integrity VM Guest Support Libraries (VMGuestLib): Supports the new features of VM A.03.00.
- Utilization Provider: Updated to version A.01.06.02.xx to incorporate defect fixes.
- System Management GUIs
 - HP System Management Homepage (SMH): Defect fixes.
 - HP Systems Insight Manager (SIM): Supports VSE 3.0 products.
 - Distributed Systems Administration Utilities (DSAU): Usability enhancements.
 - Network Interfaces Configuration and Network Services Configuration: Support for IPv6; support for specifying additional modules to be pushed amongst IPv6, IPv4, and DLPI; more information for tunnels.
 - Disks and File Systems: Support for Volume Group creation for Serviceguard clusters and automatic distribution of LVM changes to all cluster nodes.
 - HP-UX Accounts for Users and Groups: Supports managing POSIX users and groups from LDAP database.
 - HP-UX Kernel Configuration: Defect fixes.
 - HP-UX Peripheral Devices Manager: Defect fixes.
 - **New:** Printer Management tool: A new Web-based printer management tool available on the HP System Management Homepage (HP SMH).
- WBEM Services and Providers:
 - HP WBEM Services for HP-UX: Defect fixes.
 - HP-UX WBEM Fibre Channel Provider: Supports Consolidated Status Provider and Indication Provider features.
 - **New:** HP-UX WBEM IOTree Indication Provider: Supports Indication Provider for hot-swappable PCI slots.
 - **New:** The HP-UX KC Provider: Supports `kcmodule` provider and `kctunables` provider. Both work in the WBEM environment.
 - HP-UX WBEM LAN Provider for Ethernet Interfaces (WBEMP-LAN-00): New provider, LAN Consolidated Status Provider, delivered in this release.
 - HP-UX WBEM Online Operations Service Provider (OLOS): Supports cell online activation and deactivation.
 - **New:** HP-UX WBEM RAIDSA Provider: Used by client applications to determine information about Smart Array HBAs present on the system.
 - **New:** HP-UX WBEM SAS Provider: Used by client applications to determine information about SAS HBAs present on the system. With this component you can retrieve details about the various attributes of SAS HBAs.
 - HP-UX WBEM SCSI Provider: Supports Consolidated Status Provider feature and defect fixes.

September 2007 Release Notes, Chapter 6: “Disk and File Management”

- HP CIFS Server: Updated to 3.0g version A.02.03.02 to incorporate defect fixes and enhancements. No longer maintains the LDAP management scripts, `smbldap-tools`.

September 2007 Release Notes, Chapter 7: “Internet and Networking”

- **New:** HP-UX Mobile IPv4: Provides mobility support for mobile devices to migrate from their home network to other networks, either within the same administrative domain or to other administrative domains on the Internet.
- Internet Services
 - **New:** Multimedia Streaming Protocols: Enables you to stream audio and video files. Delivered on the OEs as an optional feature.
- LDAP-UX Integration: Updated to version B.04.15 with dynamic group support, PAM_AUTHZ, TLS support, schema extension utility, and more.
- Red Hat Directory Server: Updated to version B.07.10.30 to incorporate defect fixes.
- Web Browsers
 - **New:** Firefox and Firefox Source: Web browser sets a new standard for internet browsing by providing an easier and more personal way to use the Internet.
 - **New:** GTK and GTK Source: Open-source windowing toolkit used by Firefox and Thunderbird.
 - **New:** Thunderbird and Thunderbird Source: Email application provides convenient, customizable, rich-featured email access.
- Web Servers:
 - **New:** HP-UX NSA HTTP: Updated to version B.11.31.01.02; enables NSA (Network Server Accelerator).
 - HP-UX Web Server Suite: Updated versions of products in the HP-UX Web Server Suite.
 - HP-UX Apache-based Web Server: Includes additional modules, including scripting, content management, and security.
 - HP-UX Tomcat-based Servlet Engine: Implements Java Servlet 2.4 and Java Server Pages 2.0 specifications.
 - HP-UX Webmin-based Admin: Defect fixes.
 - HP-UX XML Web Server Tools: Upgraded to version 2.03; Xerces upgraded to version 2.8.0.

September 2007 Release Notes, Chapter 8: “Security”

- HP-UX Auditing and Security Attributes Configuration: Supports new GUI as part of the security attributes tool in HP SMH (System Management Homepage).
- HP-UX Bastille and Install Time Security: Bastille updated to version B.3.0.26. Now works with Software Assistant (SWA).
- HP-UX Host Intrusion Detection System: Updated to version 4.1. Includes alert volume reduction feature, generation of customized and consolidated alert reports, and a tuning tool that reduces the time and effort to deploy and maintain Surveillance Schedules.
- HP-UX IPFilter: Changes in versioning.
- HP-UX Secure Shell: Updated to incorporate defect fixes.
- **New:** HP-UX Software Assistant (SWA): includes Security Patch Check (SPC) and is the HP-recommended utility to use to maintain currency with HP-published security bulletins for HP-UX software.
- OpenSSL: Updated to version A.00.09.08d.002.

September 2007 Release Notes, Chapter 9: “Commands and System Calls”

- `ioscan` Command: The `-l` option of `ioscan` has been deprecated and will be obsoleted in a future HP-UX release.

September 2007 Release Notes, Chapter 10: “Libraries and Programming”

- HP MPI: User's guide updated from the 10th edition to the 11th edition.
- HP-UX Java Development Kit and HP-UX Java Runtime Environment for the Java® 2 Platform Standard Edition (JDK/JRE): Updated to versions Java 1.4.2.13 and Java 5.0.8 to incorporate defect fixes.
- Perl: Updated to version 5.8.8 build 817.1 to incorporate defect fixes.

September 2007 Release Notes, Chapter 11: "Internationalization"

- There are no changes in September 2007 for the products or features that are normally documented in this chapter.

September 2007 Release Notes, Chapter 12: "Other Functionality"

- There are no changes in September 2007 for the products or features that are normally documented in this chapter.

What is New in the Initial (February 2007) HP-UX 11i v3 Release

The following summaries pertain to the initial (February 2007) HP-UX 11i v3 release. For further information, see the indicated chapters in the *HP-UX 11i Version 3 Release Notes* (February 2007), available in its most current version at

<http://docs.hp.com/en/oshpux11iv3.html>.

This section provides two overviews of what is new, has changed, and has been deprecated or obsoleted since two previous releases: the HP-UX 11i v1 September 2005 release and the HP-UX 11i v2 June 2006 release. Each overview is located as indicated below:

- “What is New for Customers Migrating from HP-UX 11i v1 September 2005”
- “What is New for Customers Migrating from HP-UX 11i v2 June 2006”



NOTE: Revisions to the initial (February 2007) *HP-UX 11i Version 3 Release Notes* are contained in the *HP-UX 11i v3 Release Notes Errata*, Edition 3, MPN 5992-5827, located at <http://docs.hp.com/en/oshpux11iv3.html> (navigate to **Release Notes**).

The following are not exhaustive lists, so HP strongly recommends that you consult the *HP-UX 11i Version 3 Release Notes* (February 2007) for information that is not included here.

What is New for Customers Migrating from HP-UX 11i v1 September 2005

In the following summaries, you can obtain a general picture of how the initial (February 2007) release of HP-UX 11i v3 differs from the September 2005 release of HP-UX 11i v1. For further details, see the indicated chapters in the *HP-UX 11i Version 3 Release Notes*, available in its most current version at <http://docs.hp.com/en/oshpux11iv3.html>.

In addition, you may want to review the list “What is New for Customers Migrating from HP-UX 11i v2 June 2006” (page 82) for a general picture of how the initial (February 2007) release of HP-UX 11i v3 differs from the June 2006 release of HP-UX 11i v2.

Initial (February 2007) Release Notes, Chapter 4: “Hardware-Specific Information”

- Enhancements to IO Forwarding: The *IO forwarding* interrupt comes under the purview of Detect & Strobe and is enhanced.
- **New:** estape Tape and eschgr Autochanger Drivers: New with HP-UX 11i v3. *ssrfc* driver no longer available.
- Graphics: HP-UX 11i v3 is not supported on workstations, and the PEX graphics API is not supported on HP-UX 11i v3.
- HP-UX 11i v3 Driver Development Kit (DDK): Enhanced for HP-UX 11i v3. Provides documentation, sample code, build environment and development tools for 3rd-party developers, ISVs and IHVs to develop and test drivers on HP-UX 11i v3 PA-RISC and Itanium®-based platforms.
- Enterprise Virtual Array (EVA): There is an issue with LUN WWIDs and HP-UX 11i v3.
- HP StorageWorks Secure Path: Obsolete.
- I/O Subsystem: Several new I/O commands help manage the I/O subsystem, and existing commands have new options and functionality to support the next generation mass storage stack.
- **New:** The Next Generation Mass Storage Stack manages I/O devices, such as SCSI logical units (LUNs). In this release, the mass storage stack delivers functionality designed to enhance server scalability, adaptability, and performance while retaining backward compatibility. New features include agile addressing, native multi-pathing, and increased parallelization.

- Networking and Mass Storage Drivers
 - Gigabit Ethernet: The `igelan`, `gelan` and `btlan` products are enhanced with new features, including online deletion (OLD) and module packaging.
 - `HyprFabrc-00`: Supports only Peripheral Component Interconnect (PCI) HF2 cards. HF1 Cards will not be supported.
 - **New: InfiniBand**: Now provides support for Network Interfaces and Network Services Configuration.
 - `PCIMUX-00`: The `PCIMUX-00` bundle delivers the `pci-mux1` driver, which supports the AD278A and AD279A PCI MUX adapters.
 - `TermIO-00`: The `TermIO-00` driver bundle delivers the `pci_mux0` driver, which supports the A6748A and A6749A PCI MUX adapters.
 - `FibrChanl-00` HP PCI Tachyon TL/TS/XL2 Fibre Channel Driver for HP-UX 11i v3: Supports new Mass Storage Stack, Agile addressing, Soft Zoning, PCI Online deletion, PCI error detection and recovery.
 - `FibrChanl-01` Fibre Channel Mass Storage Driver for HP-UX 11i v3: Supports new mass storage stack, Agile addressing, Soft Zoning, PCI Online deletion, and PCI error detection and recovery.
 - HP PCI Ultra160 SCSI (`c8xx`): Supports new mass storage stack, PCI Online Deletion (OLD), PCI error detection and recovery, HBA Device Special Files (DSF). Termination of support for Ultra2 HBAs.
 - `USB-00`: The USB stack and drivers delivered in `USB-00` replace the legacy USB stack delivered in drivers `hcd`, `hub`, `hid`, and `usbd`, with additional functionality.
- **New: PCI Error Recovery**: Provides the ability to detect, isolate, and automatically recover from a PCI error, avoiding a system crash.
- **New: PCI Card Online Deletion (OLD)**: The PCI OL* feature has been enhanced to allow HP-UX 11i v3 administrators to delete PCI cards and their associated drivers online without requiring a system reboot.
- Utility Pricing Solutions
 - HP Instant Capacity: Updated to version B.11.31.08.01 to include modifications to the installation procedure; support for Global Instant Capacity (GiCAP) and hyperthreading; changes to GiCAP grouping rules and `icapstatus` command output; and more.
 - HP Pay per use: Updated to version B.11.31.08.01.00 with support for hyperthreading features included in HP-UX 11i v3. Includes error fixes.
- Xserver: Radeon 7500 is supported on `rp34x0` and `rp44x0` servers in HP-UX 11i v3.

Initial (February 2007) Release Notes, Chapter 5: "General System Administration"

- `asyncdsk` Driver Kernel Tunable `max_async_ports`: `max_async_ports` is now a dynamic tunable; default value changed to 4096 and maximum value is 4194304.
- **New: Concurrent Dump**: You can now configure your machine to perform a distributed parallel dump, thereby improving the dump throughput and reducing dump time.
- Daylight Savings Time (DST). Changes for US DST rules.
- **New: Detect and Strobe**: Core-kernel functionality used to limit the amount of time spent in servicing interrupts to a user-defined maximum. Note: Detect and Strobe was previously delivered as patch for HP-UX 11i v1.
- **New: Disks and File Systems (`fsweb`)**: Provides a web-based graphical user interface (GUI) and text user interface (TUI) for File System and Disks system administration tasks.
- **New: Distributed Systems Administration Utilities**: Provides tools that simplify managing groups of systems and Serviceguard clusters.
- **New: Enhanced User Core File Naming**: New command, `coreadm`, introduced to uniquely name application core files created by abnormally terminating user processes.

- Enterprise Cluster Master Toolkit: Includes scripts for Oracle, enhancements to the Oracle Toolkit, support for VERITAS Cluster File System (CFS) in a Serviceguard A.11.17 environment, support for Serviceguard 11.17.01 (non-CFS) for Tomcat, Apache, Oracle 10g, and more.
- **New:** Event Manager: A comprehensive mechanism for posting, distributing, storing, and reviewing event information. Composed of a kernel component, user libraries (libevm.so) and a set of commands.
- Event Monitoring Service: Now enhanced to send WBEM indications, which can be viewed from the EVWEB tool.
- **New:** High Resolution Timer Support: Enhances select timer-related system calls and APIs to provide a resolution finer than the default 10 millisecond resolution.
- HP OpenView GlancePlus Pak: Updated to version C.04.55 with support for large process IDs; enhancement to record the Logical Volume (LV) metrics for VERITAS Volume Manager, versions VxVM 4.1 and VxVM 5.0; new metrics for monitoring the UFC; and other changes.
- HP Partitioning and Virtual Server Environment
 - **New:** Dynamic LCPU: Provides the ability to enable and disable Logical Processors (LCPU) dynamically at the processor set boundary. Supported only on systems with the Hyper-Threading feature available and enabled.
 - HP Global Workload Manager: Updated to version A.02.50.00.x with support for Linux managed nodes, support for Windows virtual machine guests, nested partitions, and many other changes.
 - HP Process Resource Manager: Updated with features including ability to manage shared memory, integration with HP Integrity Virtual Machines, integration with HP System Management Homepage, ability to map UNIX groups to PRM groups, and several other features.
 - HP-UX 11i v3 Patch Bundles and Software Pack: The initial release of HP-UX 11i v3 will not include the standard Quality Pack (QPK) and Hardware Enablement (HWE) patch bundles or the Software Pack that delivers optional new core enhancements. The delivery of these patch bundles and the Software Pack is planned for the first update release of HP-UX 11i v3.
 - HP-UX Virtual Partitions: Updated to version A.05.01 with online memory migration, mixing A.04.02 and A.05.01 virtual partitions in the same vPars environment, and hyperthreading. Purchased separately.
 - Integrity VM Note: The host for Integrity VM is not supported on 11i v3. However, the virtual machines of the host can run 11i v3.
 - HP-UX Workload Manager: Updated to version A.03.02.02. Changes include Process Resource Manager no longer included in bundle; supports HP Integrity Virtual Machines; communications now secure by default; supports finer granularity for minimum allocations to FSS groups; supports a maximum of 256 FSS groups; and several other changes.
 - HP-UX Workload Manager Toolkits: Updated to version A.01.10.01. Provides the new HP-UX WLM SAP Toolkit, which identifies SAP processes based on user-defined criteria and uses WLM's process maps feature to place the SAP processes in specific workload groups. PPUTK obsoleted; SASTK and DMTK deprecated.
 - Partition Manager: Updated to v2.0 (version B.31.02.03.01) with the ability to enable and disable Hyper-Threading for nPartitions whose cells have processors that are Hyper-Threading capable.
 - nPartition Provider: Updated to version B.31.01.07.01 with support for WBEM Services version 2.5 and support for systems based on the HP sx2000 chipset.

- **New:** Utilization Provider: Lightweight daemon (`utild`) that records system-utilization data on a 5-minute interval; data recorded includes CPU, memory, disk, and network utilization; also includes a WBEM provider for access to the data.
- vPar Provider: WBEM provider displays information about virtual partitions. Read-only; clients cannot modify virtual partition configurations with it.
- HP Serviceguard: Updated to version A.11.17.01 with support for persistent DSF naming and dynamic multipathing, large PID, identification of networking interfaces (NICs) that are part of the Serviceguard cluster configuration, and other features. VERITAS Cluster File System (CFS) and Cluster Volume Manager (CVM) not supported in initial release of HP-UX 11i v3. RS232 serial line as cluster heartbeat is obsolete.
- HP Serviceguard Network File System (NFS) Toolkit: Updated to version A.11.31.02 with new control script template and a defect fix. Can work with Serviceguard A.11.17.01, but does not support some Serviceguard A.11.17.01 and NFS HP-UX 11i v3 features. Customers who need VERITAS Cluster File System (CFS) should not upgrade to HP-UX 11i v3 until CFS is available on that platform.
- HP System Management Homepage: Updated to version A.2.2.5 to incorporate defect fixes. In addition, many more system management tools are integrated in HP SMH for HP-UX 11i v3 then HP-UX 11i v1 September 2005.
- HP Systems Insight Manager: Updated to “HP SIM 5.0 with Update 2 - HP-UX” with support for HP BladeSystem c-Class blade and enclosure, and onboard administrator; HP BladeSystem Integrated Manager 2.1 with updated functionality; minimum system memory configuration to run HP SIM on HP-UX 11i v3 is now 3GB, and defect fixes.
- HP WBEM Services for HP-UX: Updated to version A.02.05 with association providers, internationalization support for CIM operations, CIM schema upgrade, and other major changes.
- HP-UX Accounts for Users and Groups: New TUI in place of the legacy SAM interface; new Web-based GUI; improved performance with the new TUI interface; supports long username and groups.
- HP-UX Kernel Configuration: New TUI in place of the legacy SAM interface; New Web-based GUI; Error Management Technology support; critical defect fixes.
- **New:** HP-UX Large NPROC: The HP-UX 11i v3 system can support more processes running concurrently than previous releases, changing from 30,000 to 60,000.
- **New:** HP-UX Large PID: The range of Process Identifiers (PID) the kernel can generate in a stand-alone HP-UX system has been expanded from 0 ~ 30,000 to 0 ~ $2^{30}-1$ (1,073,741,823).
- HP-UX Peripheral Devices Manager: Enhanced to support the Agile Hardware Path Addressing and Persistent Device Special Files; enhanced to allow for Online deletion of OLRAD cards; now reads the detailed CRA report from the log file in which the report is logged after the change in the CRA behavior; and more.
- HP-UX System V IPC Message Queues: Enhanced with dynamic tuning capabilities. Tunables `msgmax`, `msgssz`, `msgmap`, `msgseg` are obsolete. Added new dynamic tunable `msgmbs`; indicates maximum kernel memory to be used for messages waiting to be received. Tunables `msgmni`, `msgtql` are made dynamic.
- **New:** HP-UX WBEM Fibre Channel Provider: Client applications can use this provider to get information about HP-UX Fibre Channel HBAs on the system.
- **New:** HP-UX WBEM File System Provider: Makes available file system information; instruments the `HPUX_HFS`, `HP_LOFS`, `HP_CDFS`, `HP_VxFS`, `HP_NFS`, `HP_MountPoint` and `HPUX_Mount` classes.
- **New:** HP-UX WBEM IOTree Provider: Client applications can use HP-UX WBEM IOTree provider to get information about HP-UX IOTree host-bus adapters (HBAs) on the system.
- **New:** HP-UX WBEM LAN Provider for Ethernet Interfaces (`WBEMP-LAN-00`): Is a CIM Provider for Ethernet-based LAN technologies on HP-UX. Client applications can use this

provider to determine all Ethernet LAN links available on the system (registered and known to HP-UX DLPI) and collect information about them.

- **New:** HP-UX WBEM Online Operations Service Provider: Not currently supported; intended to support features in future releases of HP-UX 11i v3.
- **New:** HP-UX WBEM SCSI Provider: Client Applications can use this provider to get information about HP-UX SCSI host-bus adapters (HBAs) on the system.
- Ignite-UX: Updated to version C.7.0.x with multipath-awareness, new approach for addressing I/O, automatic management of the system boot path for multiple path configurations, user-selectable format for recovery archives and golden archives, and other changes.
- **New:** Kernel Tunable Values Reset From Boot Prompt: HP-UX 11i v3 release provides a new feature in which kernel tunable values can be reset from the boot prompt.
- **New:** Livedump: Provides the ability to take a crashdump on a live system without a forced shutdown or panic of that system. Implemented for Itanium®-based platforms only.
- **New:** Long Username / Groupname: Current limit enhanced from 8 to 255 bytes. By default 8 is still the limit. With an enabler this limit can be enhanced to 255. Once enabled, cannot be disabled in the future. Not supported for trusted systems.
- **New:** Node and Host Name Expansion: Provides the ability to set node and host names up to 255 bytes.
- Obsolescence Bundle: Used during an update when obsolete software on the system needs to be removed; automatically selected for updates. Will remove several obsolete or incompatible products and/or drivers.
- Online Diagnostics product: Introduced for the `map` command, is a new option, page, which displays a paginated output of the system map.
- SCSI Kernel Tunables: `scsi_maxphys`, `scsi_max_qdepth` and `default_disk_ir` kernel tunables are obsolete.
- Software Distributor: Updated to version 11.31 with support for HP-UX 11i v3-unique features including large pid, long usernames and group names; and improved support for high level software deployment tools such as Software Manager, `update-ux`, and future tools. Includes defect fixes.
- Software Package Builder: Added new policy files that include the expansion of the acceptable category tags, the addition of the `is_oe` attribute, and changes to the architecture and `os_release` attribute rules.
- System Administration Manager (SAM): Deprecated. The `smh` command is recommended, but `sam` command will continue to be available. Some functional areas previously available are obsoleted.
- System Administration Manager (SAM) Auditing and Security Functional Area: System Security Policies subarea of SAM is replaced with the HP-UX Security Attributes Configuration tool; Audited NIS+ Users subarea is obsolete.
- System Administration Manager (SAM) Printers and Plotters Functional Area: Launch point in X/ObAM-based GUI mode is now via the HP System Management Homepage.
- System Administration Management Tool Changes: SAM and HP System Management Homepage: System Administration Manager (SAM) is deprecated in HP-UX 11i v3. HP System Management Homepage (HP SMH) is the system administration tool for managing HP-UX 11i. HP SMH provides Web-based systems management functionality, at-a-glance monitoring of system component health, and consolidated log viewing. HP SMH also provides Terminal User Interfaces (TUIs).
- **New:** System Fault Management: 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. Operates in the WBEM environment.
- Update-UX and SW-GETTOOLS: The `update-ux` command now uses Software Manager, a new application that provides features including support for preview; interactive TUI;

better support for multiple media, including more accurate disk space analysis, dependency selection across media; and improved logging capabilities.

- Virtual Memory Kernel Tunables: The *eqmem_limit* (only on PA-RISC systems) has been added. Several tunables have been removed.

Initial (February 2007) Release Notes, Chapter 6: “Disk and File Management”

- HFS (also known as UFS) File System Type: Now deprecated. Will be removed from the OS in a future release, to be determined.
- HFS file system and backup commands: To work on file sizes larger than 2TB.
- HP CIFS Client: Updated to version A.02.02.01 with support for MS Distributed File System (DFS) and DLKM feature and other changes.
- HP CIFS Server: Updated to 3.0f version A.02.03: Redesign of Winbind code; File Locking Interoperation Functionality; support for long user and group names; support for TDB Memory Map; and other changes.
- HP-UX File Systems Architecture Enhancements: Numerous enhancements include VFS stacking capabilities; *fsdaemon* user level daemon; large file systems and large files support; improved file systems *syncer*; performance improvement of *aio_reap(2)*; support of larger files and long link names in backup utility; and several other enhancements.
- Logical Volume Manager and MirrorDisk/UX: Delivers significant scalability and availability enhancements. Supports the next generation mass storage stack, and is integrated with the mass storage stack’s load balancing and dynamic LUN expansion features; enhanced to support larger logical volumes, temporary suspension of volume groups, striping with mirroring, and dynamic LUN expansion; enables online modification of a volume group, as well as a new script to simplify the replacement of a failing disk.
- Open Network Computing (ONC)
 - AutoFS/Automounter: Updated with support for LDAP name service to store AutoFS maps; the ability to browse the list of potential mount points in an indirect AutoFS map without mounting the filesystems; the ability to configure AutoFS through the */etc/default/autofs* file; and other features.
 - Cache File System (CacheFS): New features include long file name support, *cachefspack*, and support for largefiles and large file system.
 - Library RPC: Library routines support several new datatypes, add support for IPv6, and more.
 - Network File System (NFS) Services: Provides numerous enhancements, including *pcnfsd* daemon, which is multithreaded and supports shadow password and Secure RPC; new user mode daemon generates and validates API security tokens, and maps the GSSAPI principal names to the local user and group IDs; additional security mechanisms, such as Secure NFS that supports Kerberos through GSSAPI; NFS access using a firewall; and many other features.
 - Network Information Service (NIS): Provides several new features including support for shadow mode; support for enabling DNS forwarding mode; support for long *uname*, *hostname*, and *username*; and other features.
 - NIS+: Obsolete.
 - PCNFSD: *pcnfsd* daemon is multithreaded. Support for shadow password and secure RPC; *wtmp* entries can hold usernames up to the PCNFSD protocol limitation of 32 characters and client hostnames up to the PCNFSD protocol limitation of 64; support for printer names up to the PCNFSD protocol limitation of 64 characters.
- **New:** Unified File Cache: Integrates the page cache and buffer cache to provide coherency for file access. Serves as a key enabler for VxFS 4.1 and ONC+2.3. Improves source compatibility with Solaris, Tru64, and Linux applications that depend on coherency of page and buffer cache. Potential performance improvement of applications that depend on coherency of page and buffer cache.

- VERITAS File System (VxFS): Features in version 4.1 include support for 1024 ACLs; support for large filesystem (up to 32 TB) and large file size (up to 16 TB); VxFS filesystem as a DLKM; multi-device filesystems; and other features. Cluster File System (CFS) is not supported in the initial release of HP-UX 11i v3.
- VERITAS Volume Manager (VxVM): Features in version 4.1 include support for Volume Sets and VxFS MDS; Cross-Platform Data Sharing; Device Discovery Layer Phase 2; Serial Split Brain; and other features. Cluster Volume Manager (CVM), a part of VxVM that is enabled by a separate license, is not being provided with the current 4.1 HP-UX 11i v3 release.

Initial (February 2007) Release Notes, Chapter 7: “Internet and Networking”

- **New:** ARPA Transport: Many enhancements to ARPA Transport include Security Containment, sendfile/UFC, UNIX 2003 Conformance, large hostname support, and Tru64 Application migration to HP-UX/Itanium®-based.
- Browsers: Mozilla is updated with defect fixes. Includes improved Asian font support on HP-UX and the Japanese Language Pack.
- **New:** HP Data Link Provider Interface (DLPI): Enhancements include *NOSYNC STREAMS* synchronization level for improved performance and scalability for high speed links, online deletion (OLD) of I/O card instances, and dynamic loading and unloading of LAN drivers without reboot.
- HP-UX PPPv6: Incorporates defect fixes.
- HP-UX VLAN: New features include support for HP-UX VLANs over APA aggregates and LAN-monitor failover groups, SMH-Network Interface Configuration support for Web-based VLAN configuration, and `nwmgr` support for HP-UX VLAN.
- HP-UX Web Server Suite
 - HP-UX Apache-based Web Server: Updated to version 2.0.58.00 as primarily a bug fix release.
 - HP-UX Tomcat-based Servlet Engine: Upgraded to 5.5.9.04. Implements the Servlet 2.4 and JavaServer Pages 2.0 specifications. Designed to run on JDK 1.5 and later versions.
 - HP-UX Webmin-based Admin: Upgraded to 1.070.08 as primarily a defect fix release.
- Internet Services: You can now deselect individual Internet Services during installation or remove filesets later.
- BIND: BIND 9.3 includes many new features, including transition support for IPv4 and IPv6. With HP-UX 11i v3, `NAMED` and `NAMED_ARGS` variables are moved to `/etc/rc.config.d/namesvrs`.
- DHCPv4 (bootpd): New option `sa` configures the `tftp` server, providing control of the `siaddr` field of the `dhcp` packet. New configuration option for the `subnet selection` option in the `/etc/dhcptab` file allows `bootpd` to assign a network address even if `bootpd` is not part of that network. Support for PXE clients is added.
- DHCPv6: Now available in the core operating system.
- `inetd` Command: Two new command line options, `-p` (limit number of processes invoked by `inetd`) and `-a` (enable user level auditing of processes). Support for large hostnames and large PIDs.
- `libc`: Numerous changes in APIs.
- Mailx, Elm, and Talk: `elm(1M)` and `mailx(1M)` are long-user-name compliant.
- R-commands: long username is supported.
- **New:** Sendmail: Version 8.13.3 has numerous new features.
- **New:** TFTP: `tftpd™` (server) and `tftp™` (client) now support IPv6 addresses. New command line options specify upper and lower port range limits for data transfer.
- WU-FTPD: Version 2.6.1 supports long usernames. Adds several new features and is backward compatible with WU-FTPD 2.4.

- LAN Administration Commands: `lanadmin` now supports an iPoIB interface, 64-bit MIB, and native and non-native drivers developed by independent hardware vendors; `lanscan` and `linkloop` now support iPoIB interfaces.
- LDAP-UX Integration Product: This release includes the new LDAP-UX version B.04.00.10.
- **New:** Mobile IPv6: Uses a fixed IP address for extended periods to allow mobile nodes to change network access points while remaining accessible with no disruption of network continuity. Supports IPv6 addresses.
- **New:** Network Interface Management Command Line Interface: The `nwmgr` command is used to manage LAN-based and IB-based network interfaces; a single tool for performing all network interface-related tasks.
- **New:** Network Interfaces Configuration and Network Services Configuration: These tools in the HP System Management Homepage replace the Networking and Communications functions of the System Administration Manager (SAM), which are no longer available.
- **New:** Red Hat Directory Server for HP-UX: Provides an industry-standard centralized directory service to build your intranet or extranet on. 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.
- STREAMS: `NOSYNC` feature allows multiple instances of a `put` procedure for a queue and the service routine for that queue to run concurrently. All references to the global variable `uniprocessor` have been removed.
- NetTL - Network Tracing and Logging: The `nettl` command is enhanced with formatting support for iPoIB the header, command-line option to configure trace buffer value, pre-capture trace values, and new options to manage trace filters.

Initial (February 2007) Release Notes, Chapter 8: "Security"

- **New:** HP-UX 11i Security Containment: Provides compartments, which isolate unrelated resources on a system to prevent catastrophic system damage if one compartment is penetrated. When configured in a compartment, an application (processes, binaries, data files and communication channels used) has restricted access to resources outside its compartment. Also provides fine-grained privileges, which allow you to grant privileges to processes needed for the task and, optionally, only for the time needed to complete the task.
- HP-UX Auditing System: Enhanced in several ways, including: auditing subsystem is now working without converting the system to trusted mode; standard mode audit user selection information is stored in a per-user configuration user database; `userdbset` command specifies which users are to be audited in standard mode; and several other enhancements.
- **New:** HP-UX Bastille: Although Bastille has been available on the Web (and on the HP-UX 11i v2 OEs) for some time, it is now available, at version B.3.0.20, on the HP-UX 11i v3 OEs for the first time for customers migrating from HP-UX 11i v1 and includes several enhancements.
- HP-UX Host Intrusion Detection System: Updated to release 4.0 with features including reducing alert volume by aggregation; reducing alert volume by monitoring only critical files; configuring critical users; supporting specification of usernames and user IDs; and measuring the event rate.
- HP-UX IPFilter: Updated to version A.03.05.13 with defect fixes and enhancements including filtering on X.25 interfaces, filtering on 10GigE interfaces; IPFilter not plumbed into the networking stack by default; no reboot required to enable IPFilter.
- **New:** HP-UX IPsec: Previously only available on the AR media. Now delivered on the HP-UX 11i v3 Operating Environments. Provides an infrastructure to allow secure communications (authentication, integrity, confidentiality) over IP networks between systems and devices that implement the IPsec protocol suite.

- HP-UX Secure Shell: Updated to version A.04.40.005 with many new features including high performance enabled SSH/SCP patch; configuration directives in the server; auth selection patch; increase in the default size of RSA and DSA keys; delayed compression; and many other features, as well as defect fixes.
- HP-UX Security Attributes Configuration tool (*secweb*): Updated to support long user name.
- **New:** HP-UX Standard Mode Security Extensions: Enhances the security of systems running in standard mode by providing security features that were previously available only on systems that had been converted to trusted mode.
- Install-Time Security: Adds a security step to the install/update process that allows you to run the Bastille security lockdown engine during system installation with one of four configurations ranging from default security to “DMZ.”
- Kerberos Client: Updated to version 1.3.5.03 with new features including support for powerful cryptographic algorithms like 3DES, RC4, and AES; support for IPv6; support for TCP; and defect fixes.
- OpenSSL: Updated to version A.00.09.08d.001 with support (in default version) for several hardware ENGINES (see section for specifics); support for elliptic curve cryptography; and EVP, the library of which provides a high-level interface to cryptographic functions. Other provided versions include other features.
- PAM Kerberos: Enhanced to issue a warning if *rc_host_0* is owned by anyone other than root when a user tries to *rlogin* into a system; will also issue a warning if the keytable entry is not found for the host service principal on the client but present at the KDC.
- **New:** Security Patch Check: Analyzes the currency of a system with respect to security bulletins. Recommends actions for security vulnerabilities that have not been fixed by patches, updates, or logged manual actions currently applied to the system.

Initial (February 2007) Release Notes, Chapter 9: “Commands and System Calls”

- */etc/skel/.profile* shell script: *.* (current path) in *\$PATH* is deprecated
- 32-bit *pstat* System Call (Deprecated): When compiling a 32-bit application that uses the *pstat* () system call, the compiler option *-D_PSTAT64* must now be specified. This causes *pstat* () to use 64-bit fields rather than 32-bit fields. The application still remains a 32-bit application.
- *at*, *cron*, and *batch* Commands: New features include support for queueing multiple jobs at the same time, support for queueing of more than 100 jobs, and ability to schedule jobs up to the *njob* limit specified for every queue in *queuedefs(4)*.
- *core* Format Implementation Change: The true version string has replaced the *ut_sname* struct in the *CORE_KERNEL* segment. A workaround has been provided for applications which reversed-engineered the *core* file format and depend on *ut_sname* being in it. This new *core* file format is the default format.
- *cs* Command Line Interpreter: The non-interactive invocation of *cs* will not source the *~/ .history* file by default.
- File Systems Backup and Recovery Commands *fbackup*, *frecover*, and *ftio*: Deprecated; will be obsolete in a future HP-UX release. You should prepare by migrating to the favorable replacement *pax*. Support will be continued for archive retrieval.
- **New:** *gcore* Command: creates a core image of each specified process.
- *getgroups* (), *setgroups* (): no longer limited by the *NGROUPS_MAX*.
- *getty* Command: Enhanced to configure the default setting for special control characters (erase, kill, etc.) by the user.
- HP-UX Kernel Configuration Commands: HP-UX 11i v1 kernel configuration commands has been removed in favor of new commands for HP-UX 11i v3. In addition, there are changes to the location of kernels and related files on disk; to the manner in which a kernel configuration is chosen at boot time; and to the manner in which the system automatically maintains a backup kernel configuration.

- `iostat` : Enhanced to report activity for each active lunpath to the LUNs. Also, the new option `-L` has been added, which lists active lunpath statistics.
- Long `hostname`, `uname`, and `setuname` Commands: The limits of these commands can now be expanded to 255 bytes.
- **New:** Long Username Support by HFS `ff`, VxFS 4.1 `ff`, `repquota`, `quotacheck`: Enhanced to support the username up to 255 bytes.
- `lp`, `lpadmin`, `lpfence`, `lpmove`, and `lpsched` Commands: Printers can now be added/removed/modified without bringing down the `lp` scheduler; line printer spooler enhanced to support printer/class names up to 250 characters from the previous limit of 14 characters; support also extended to remote destination names.
- `mmap()` System Call: Enhanced to support mapping file with read-only permission with `PROT_EXEC` and implicit `mmap()` with `MAP_FIXED`.
- `pax` Command: Enhanced to conform to the UNIX 2003 Standard. You will now be able to use `pax` to archive files having a size greater than or equal to 8GB; long user name/group name; large UID/GID greater than 2097151; long pathname or link name.
- PFS Commands: Obsolete.
- `pipcs` Command: Enhanced to provide details regarding processes using the various POSIX Message Queues, as well as creation time and last modification time of the POSIX Message Queues.
- `ps` Command: Enhanced to display maximum of 1020 characters in the `COMMAND` field.
- **New:** `pselect()` System Call: Added to meet the UNIX 2003 Standard. Provides additional parameter options to users of the `select()` system call. Timeout granularity may be specified in seconds and nanoseconds. A new signal mask parameter is also available to be used for the duration of system call.
- `psrset` Command: Enhanced to manage the Real Time Extension processor set; enhanced to support one more PSET attribute type called LCPU.
- `pstat_getstatic()` System Call: Information returned by `pstat_getstatic()` may now change between reboots due to manually or automatically generated administrative changes in the associated kernel tunables, online addition/deletion of resources, or other events. Likelihood of it changing is infrequent.
- **New:** Ptools Process Management Tools: New set of process management tools that support easy process tracking and debugging. Consists of the following commands: `pmap`, `pfiles`, `pgrep`, `pkill`, `ptree`.
- `ptrace()` System Call: Obsolete in HP-UX 11i v3.
- `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.
- `sar` Command: Enhanced to report activity for each HBA and Tape device.
- `setboot` Command: Enhanced to provide support for setting the High Availability (HA) Alternate boot path; supports the setting of a firmware test for the next boot on the Itanium®-based platform; modified to take a persistent DSF or a lunpath hardware path as valid input to set the bootpath for next boot; enhanced to enable or disable hyperthreading environment for the next boot on a Dual-Core Intel® Itanium® 2 platform.
- `sigblock(2)`, `sigsetmask(2)`, `sigstack(2)`, `sigvector(2)`, and `bsd_signal(3C)`: Manpages are obsolete.
- `spray` Command: Provides two new options: `-d`, which specifies how many microseconds to pause between sending each packet, and `-t`, which specifies class of transports.
- **New:** `swapctl()` System Call: Allows you to configure primary swap to take effect on the next boot. Previously this could only be done via the commands `lvlnboot` and `vxvmbboot`. `swapon()` system call is deprecated.
- `swapon` and `swapinfo` Commands: `swapon` command enhanced to support setting/unsetting of primary swap device for next boot; `swapinfo` command supports new `-s` option to display settings of primary swap for next boot.

- `sysdef` Command: Deprecated. Reports incorrect values for some tunable parameters such as `msgmap`, `sema`, and `shmem`.
- `syslogd` Command: Enhanced to continue logging to log files even after the size of the log file grows beyond 2GB; enhanced to log multibyte message strings correctly.
- `usermod` has been modified to selectively prevent the movement of home directories with `-m` option.
- UNIX 2003 Compliance: All commands are modified/enhanced to conform to UNIX 2003 Standards. The UNIX 2003 changes which do not affect HP-UX compatibility are available by default. Otherwise, in order to get UNIX 2003 behavior, the variable `UNIX_STD` has to be defined in the environment.

Initial (February 2007) Release Notes, Chapter 10: “Libraries and Programming”

- Bundled C Compiler: Updated to version A.06.12 on Itanium®-based servers and B.11.11.16 on PA-RISC. Highly compatible with previous versions; diagnostic messages have changed; more erroneous and suspicious source constructs are diagnosed.
- aC++ Run Time Library: Includes the `-AA -D_HP_NONSTD_FAST_IOSTREAM` performance improvement macro, C++ Standard Library TC1 compliance change, and USA 2007 Daylight Savings Time legislation support.
- Dynamic Loader (`dld.so`): Since patch PHSS_32864, September 2005, `dld.so` has enabled large kernel page size, support for loading unaligned shared libraries and executables, and other changes.
- FirstBoot: As part of Transition links (a.k.a. Upgrade), HP used to create a symbolic link `/etc/set_parms -> /sbin/set_parms`. Transition links are obsoleted in HP-UX 11i v3 and `set_parms` is available to the user as `/sbin/set_parms`. So HP-UX 11i v3 will not support the symbolic link `/etc/set_parms`.
- HP MLIB: Updated to version 9.5 with the addition of two new libraries, VECLIBSC8 and LAPACKSC8, which are 64-bit address libraries with 64-bit integer values that use calling conventions similar to those found in Cray’s SCILIB math library.
- HP MPI: Updated to version 2.2 with several new features, including C++ bindings, new `mpirun` command line launch options, MPI-2 supported ROMIO, and other new features.
- HP-UX C Library (`libc`)
 - HP-UX C library (`libc`) - UNIX 2003 Standard Compliance: `libc` library enhanced to comply with UNIX 2003 standards. A number of APIs have been added, while some APIs have been modified.
 - HP-UX C library (`libc`) - Other Changes: New features include support for large PID, large `uname` and `hostname`, Tru64 API migration, `malloc(3C)` thread local cache enhancements, long `username` and `groupname`.
 - `libc.1` Library: Deprecated. Is a HP-UX 10.20 compatibility “C” library available in HP-UX 11i. No immediate impact in HP-UX 11i v3. When the `libc.1` library is obsoleted, all programs linking to this library will not work. Hence you are encouraged to start migrating your programs from `libc.1` to `libc.2` library.
 - Networking `libc` APIs: Networking APIs `getnameinfo()` and `getaddrinfo()` now look into the repositories specified with the `hosts` directive of the `/etc/nsswitch.conf` file, as well as those specified in the `inodes` directive, to resolve an IPv4 address. Includes additional changes.
- HP-UX Color-Curses: `libcur_color` Library and Commands: Obsolete. Were declared deprecated in HP-UX 10.30 and are not available in HP-UX 11i v3 PA-RISC.
- Java 2 Platform
 - Java JDK/JRE for HP-UX: HP-UX 11i v3 does not include Java 1.3 and Java 3D (J3D 1.4). SDK/RTE version 5.0 has been updated to incorporate defect fixes.
 - Java Out-of-Box: Updated to incorporate defect fixes.

- **New:** libIO Library: `libIO.so` (for Itanium®-based systems) or `libIO.sl` (for PA-RISC systems) is a shared library, which provides APIs for accessing the HP-UX I/O subsystem information. The library will reduce the dependency on other HP-UX commands for I/O information.
- libpthread Library: Added new API, `pthread_setschedprio()`, to set scheduling priority of target thread.
- Link Editor (`ld`): Additional options and other changes since patch PHSS_32864, September 2005.
- **New:** Mercury Library (`libhg`): Provides high performance interfaces between the user programs and the kernel making it possible to transfer key pieces of information back and forth at high speeds.
- Software Transition Kit (STK): Designed to help transition HP-UX applications from earlier versions of HP-UX to the latest version of HP-UX. Will not be available for HP-UX 11i v3.
- Threads Renice facility: Two new `pthread` APIs to change *nice* value of a thread in a multi-threaded process.
- UNIX 2003 Standard Profile Conformance: New functions and compiler conformance as defined in Single UNIX Specification version 3. The Precision Architecture (PA) systems will have most of the UNIX 2003 features available for applications. Since the C99 compiler will not be available on PA, full UNIX 2003 branding is not supported. Itanium®-based systems will fully conform and will be branded to UNIX 2003.

Initial (February 2007) Release Notes, Chapter 11: “Internationalization”

- Unicode 5.0: Now supported. Unicode 5.0 is an extension to the previously supported Unicode 3.0 character set standard.
- **New:** JISX0213 Standard: Now supported.
- **New:** KS X 1001 Standard: Now supported.
- **New:** Big5-2003 and CNS11643 Standards: Now supported.
- **New:** HKSCS-2004 (Hong Kong Supplementary Character Set): Now supported.
- **New:** Locales - Baltic/Russia/Ukraine/Latin America: Now supported.
- **New:** Locale Versioning: `localedef/libc` UNIX 2003-related I18N changes. New locale version “`locales.3`” has been generated for all system supported locale binaries. This has been provided to protect older PA-RISC-based archived applications from unexpected systems behavior in order to fully support the UNIX 2003 standard.
- UNIX 2003 Support: The `localedef`, `locale` and `iconv` commands and the associated C library APIs, locale databases and `iconv` converters have been updated to align with the UNIX 2003 standard.
- Alternate Width Properties for Unicode Codesets: Now supported for Asian locales.
- **New:** Messaging Commands: `mkcatdefs`, `dspmsg`, and `dspcat` . Added to HP-UX for compatibility with Tru64 UNIX.
- **New:** Iconv Codeset Converter Config File Changes: `system.config.iconv`. New `system.config.iconv` file provided to separate the HP-UX core OS `iconv` mapping table information from the layered third-party and user-specific `iconv` mapping table information.
- Japanese Mainframe Character Set: `iconv` now supports an extended area of Japanese mainframe character sets.
- **New:** Internationalized PostScript Printing Support: `psfontpf`: New PostScript printer filter `psfontpf` enables printing of non-English international characters in text files and web pages.
- Asian Printing: Asian `lp` model files and filters have been enhanced to support important Asian national standards and ISO 10646.

- TrueType Fonts for European Codesets: Provides additional TrueType fonts support to cover the glyph patterns for ASCII, Latin-1 Supplement, Latin Extended-A, Latin-Extended-B, Greek, Cyrillic, and currency symbols.
- Asian TrueType Fonts: Enhanced to support the latest national standards and ISO10646. New typefaces are provided for Japanese, Simplified Chinese, and Traditional Chinese fonts.
- Asian Bitmap Fonts: Enhanced to support the latest national standards and ISO 10646.
- Fallback Font Support: For text-based GUI applications, in the event there are no glyphs, the application will display “?” or “:” characters.
- Asian Functionality (Obsoleted and Deprecated): Several legacy functions are obsolete and have been removed. Also, certain Asian printer lp models, utility/library routines, and dot bitmap fonts have been deprecated.

Initial (February 2007) Release Notes, Chapter 12: “Other Functionality”

- Common Desktop Environment: Updated to version 2.1. Now includes native Itanium®-based 32-bit and 64-bit X/Motif libraries; delivers 64-bit PA-RISC and Itanium®-based libraries for the first time in HP-UX 11i v3; supports Node and Host Name Expansion feature and expanded username feature; and includes many other changes.
- Distributed Computing Environment (DCE) Client and Integrated Login: Default permissions of 3 files have changed; several new filesets are available on PA-RISC and Itanium®-based systems; several products are not available with DCE Client; Integrated Login has 2 new filesets.

What is New for Customers Migrating from HP-UX 11i v2 June 2006

In the following summaries, you can obtain a general picture of how the initial (February 2007) release of HP-UX 11i v3 differs from the June 2006 release of HP-UX 11i v2. For further details, see the indicated chapters in the *HP-UX 11i Version 3 Release Notes*, available in its most current version at <http://docs.hp.com/en/oshpux11iv3.html>.

The following are not exhaustive lists, so HP strongly recommends that you consult the *HP-UX 11i Version 3 Release Notes* (February 2007) for information that is not included here.

In addition, you may want to review the list “What is New for Customers Migrating from HP-UX 11i v1 September 2005” (page 70) for a general picture of how the initial (February 2007) release of HP-UX 11i v3 differs from the September 2005 release of HP-UX 11i v1.

Initial (February 2007) Release Notes, Chapter 4: “Hardware-Specific Information”

- Enhancements to IO Forwarding: The *IO forwarding* interrupt comes under the purview of Detect & Strobe and is enhanced.
- **New:** estape Tape and eschgr Autochanger Drivers: New with HP-UX 11i v3. *ssrfc* driver no longer available.
- HP-UX 11i v3 Driver Development Kit (DDK): Enhanced for HP-UX 11i v3. Provides documentation, sample code, build environment and development tools for 3rd-party developers, ISVs and IHVs to develop and test drivers on HP-UX 11i v3 PA-RISC and Itanium®-based platforms.
- Enterprise Virtual Array (EVA): There is an issue with LUN WWIDs and HP-UX 11i v3.
- HP StorageWorks Secure Path: Obsolete.
- I/O Subsystem: Several new I/O commands help manage the I/O subsystem, and existing commands have new options and functionality to support the next generation mass storage stack.
- **New:** The Next Generation Mass Storage Stack manages I/O devices, such as SCSI logical units (LUNs). In this release, the mass storage stack delivers functionality designed to enhance server scalability, adaptability, and performance while retaining backward compatibility. New features include agile addressing, native multi-pathing, and increased parallelization.

- Networking and Mass Storage Drivers
 - Gigabit Ethernet: The `igelan`, `gelan` and `btlan` products are enhanced with new features, including online deletion (OLD) and module packaging.
 - `HyprFabrc-00`: Supports only Peripheral Component Interconnect (PCI) HF2 cards. HF1 Cards will not be supported.
 - **New: InfiniBand**: An industry-standard high-speed, packet-based interconnect for node-to-node communications, provides higher speed and lower network latency and uses less CPU than other industry standard protocols.
 - `PCIMUX-00`: The `PCIMUX-00` bundle delivers the `pci-mux1` driver, which supports the AD278A and AD279A PCI MUX adapters.
 - `TermIO-00`: The `TermIO-00` driver bundle delivers the `pci_mux0` driver, which supports the A6748A and A6749A PCI MUX adapters.
 - `FibrChanl-00` HP PCI Tachyon TL/TS/XL2 Fibre Channel Driver for HP-UX 11i v3: Supports new Mass Storage Stack, Agile addressing, Soft Zoning, PCI Online deletion, PCI error detection and recovery.
 - `FibrChanl-01` Fibre Channel Mass Storage Driver for HP-UX 11i v3: Supports new mass storage stack, Agile addressing, Soft Zoning, PCI Online deletion, and PCI error detection and recovery.
 - HP PCI Ultra160 SCSI (`c8xx`): Supports new mass storage stack, PCI Online Deletion (OLD), PCI error detection and recovery, HBA Device Special Files (DSF). Termination of support for Ultra2 HBAs.
 - `USB-00`: Includes various quality improvements from previous releases, a dynamically managed device file system enabled by default, multi-layered USB mass storage encryption support, and device tracking.
- **New: PCI Error Recovery**: Provides the ability to detect, isolate, and automatically recover from a PCI error, avoiding a system crash.
- **New: PCI Card Online Deletion (OLD)**: The PCI OL* feature has been enhanced to allow HP-UX 11i v3 administrators to delete PCI cards and their associated drivers online without requiring a system reboot.
- Utility Pricing Solutions
 - HP Instant Capacity: Updated to version B.11.31.08.01 to include modifications to the installation procedure; support for Global Instant Capacity (GiCAP) and hyperthreading; changes to GiCAP grouping rules and `icapstatus` command output; and more.
 - HP Pay per use: Updated to version B.11.31.08.01.00 with support for hyperthreading features included in HP-UX 11i v3.
- Xserver: The Xserver's configuration tool is available via the HP SMH interface.

Initial (February 2007) Release Notes, Chapter 5: "General System Administration"

- `asyncdsk` Driver Kernel Tunable `max_async_ports`: `max_async_ports` is now a dynamic tunable; default value changed to 4096 and maximum value is 4194304.
- **New: Concurrent Dump**: You can now configure your machine to perform a distributed parallel dump, thereby improving the dump throughput and reducing dump time.
- Daylight Savings Time (DST). Changes for US DST rules.
- Detect and Strobe: Disabled when any system configuration altering activity is in progress. Functionality enabled by default (value set at 80%).
- Disks and File Systems (`fsweb`): Provides a web-based graphical user interface (GUI) and text user interface (TUI) for File System and Disks system administration tasks.
- **New: Distributed Systems Administration Utilities**: Includes an interface expansion, providing long username and long hostnames.
- **New: Enhanced User Core File Naming**: New command, `coreadm`, introduced to uniquely name application core files created by abnormally terminating user processes.

- Enterprise Cluster Master Toolkit: Includes support for VERITAS Cluster File System (CFS) in a Serviceguard A.11.17 environment, support for Serviceguard 11.17.01 (non-CFS) for CIFS, Tomcat, Apache, Oracle 10g, and more.
- **New:** Event Manager: A comprehensive mechanism for posting, distributing, storing, and reviewing event information. Composed of a kernel component, user libraries (`libevm.so`) and a set of commands.
- Event Monitoring Service: Now enhanced to send WBEM indications, which can be viewed from the EVWEB tool.
- **New:** High Resolution Timer Support: Enhances select timer-related system calls and APIs to provide a resolution finer than the default 10 millisecond resolution.
- HP OpenView GlancePlus Pak: Updated to version C.04.55 with support for large process IDs; enhancement to record the Logical Volume (LV) metrics for Veritas Volume Manager, versions VxVM 4.1 and VxVM 5.0; new metrics for monitoring the UFC; and other changes.
- HP Partitioning and Virtual Server Environment
 - **New:** Dynamic LCPUs: Provides the ability to enable and disable Logical Processors (LCPUs) dynamically at the processor set boundary. Supported only on systems with the Hyper-Threading feature available and enabled.
 - HP Global Workload Manager: Updated to version A.02.50.00.x with support for Linux managed nodes, support for Windows virtual machine guests, nested partitions, and many other changes.
 - HP Process Resource Manager: Updated with features including integration with HP System Management Homepage, ability to map UNIX groups to PRM groups, ability to cap PRM group CPU consumption on a per-group basis. support for Hyper-Threading in PSET PRM groups, and other features.
 - HP-UX 11i v3 Patch Bundles and Software Pack: The initial release of HP-UX 11i v3 will not include the standard Quality Pack (QPK), Hardware Enablement (HWE) and FEATURE11i patch bundles or the Software Pack that delivers optional new core enhancements. The delivery of these patch bundles and the Software Pack is planned for the first update release of HP-UX 11i v3.
 - HP-UX Virtual Partitions: Updated to version A.05.01 with online memory migration, mixing A.04.02 and A.05.01 virtual partitions in the same vPars environment, and hyperthreading. Purchased separately.
 - Integrity Virtual Machines (VM) Note: The host for Integrity VM is not supported on 11i v3. However, the virtual machines of the host can run 11i v3.
 - HP-UX Workload Manager: Updated to version A.03.02.02. Changes include ability to map UNIX groups to workload groups; extended regular expressions in alternate names for application records; enhancements to `wlminfo` output; and other changes.
 - HP-UX Workload Manager Toolkits: Updated to version A.01.10.01. Product label changed from T1302AA to `WLMToolkits`. PPUTK obsoleted; SASTK and DMTK deprecated.
 - Partition Manager: Updated to v2.0 (version B.31.02.03.01) with the ability to enable and disable Hyper-Threading for nPartitions whose cells have processors that are Hyper-Threading capable.
 - nPartition Provider: Updated to version B.31.01.07.01 with support for WBEM Services version 2.5.
 - **New:** Utilization Provider: Lightweight daemon (`utild`) that records system-utilization data on a 5-minute interval; data recorded includes CPU, memory, disk, and network utilization; also includes a WBEM provider for access to the data.
 - vPar Provider: WBEM provider displays information about virtual partitions. Read-only; clients cannot modify virtual partition configurations with it.
- HP Serviceguard: Updated to version A.11.17.01 with support for persistent DSF naming and dynamic multipathing, large PID, identification of networking interfaces (NICs) that

are part of the Serviceguard cluster configuration, and other features. VERITAS Cluster File System (CFS) and Cluster Volume Manager (CVM) not supported in initial release of HP-UX 11i v3. RS232 serial line as cluster heartbeat is obsolete.

- HP Serviceguard Network File System (NFS) Toolkit: Updated to version A.11.31.02 with new control script template and a defect fix. Can work with Serviceguard A.11.17.01, but does not support some Serviceguard A.11.17.01 and NFS HP-UX 11i v3 features. Users who need VERITAS Cluster File System (CFS) should not upgrade to HP-UX 11i v3 until CFS is available on that platform.
- HP System Management Homepage: Updated to version A.2.2.5 to incorporate defect fixes. In addition, is the addition of the new Web-based solutions for Networking and Communications (*ncweb*), and Serviceguard complex management (*sgmgr*) being introduced for HP-UX 11i v3.
- HP Systems Insight Manager: Updated to “HP SIM 5.0 with Update 2 - HP-UX” with support for HP BladeSystem c-Class blade and enclosure, and onboard administrator; HP BladeSystem Integrated Manager 2.1 with updated functionality; minimum system memory configuration to run HP SIM on HP-UX 11i v3 is now 3GB, and defect fixes.
- HP WBEM Services for HP-UX: Updated to version A.02.05 with association providers, internationalization support for CIM operations, CIM schema upgrade, and other major changes.
- HP-UX Accounts for Users and Groups: New TUI in place of the legacy SAM interface; long user names and group names; NIS + Shadow mode can co-exist.
- HP-UX Kernel Configuration: Command preview support in TUI; TUI supports form-based inputs; supports Error Management Technology; includes critical defect fixes.
- **New:** HP-UX Large NPROC: The HP-UX 11i v3 system can support more processes running concurrently than previous releases, changing from 30,000 to 60,000.
- **New:** HP-UX Large PID: The range of Process Identifiers (PID) the kernel can generate in a stand-alone HP-UX system has been expanded from 0 ~ 30,000 to 0 ~ 2³⁰-1 (1,073,741,823).
- HP-UX Peripheral Devices Manager: Enhanced to support the Agile Hardware Path Addressing and Persistent Device Special Files; enhanced to allow for Online deletion of OLRAD cards; now reads the detailed CRA report from the log file in which the report is logged after the change in the CRA behavior; and more.
- HP-UX System V IPC Message Queues: Enhanced with dynamic tuning capabilities. Tunables *msgmax*, *msgssz*, *msgmap*, *msgseg* are obsolete. Added new dynamic tunable *msgmbs*; indicates maximum kernel memory to be used for messages waiting to be received. Tunables *msgmni*, *msgtql* are made dynamic.
- HP-UX WBEM Fibre Channel Provider: Updated to version 11.31.01. All functionalities for association classes are now implemented.
- **New:** HP-UX WBEM File System Provider: Makes available file system information; instruments the *HPUX_HFS*, *HP_LOFS*, *HP_CDFS*, *HP_VxFS*, *HP_NFS*, *HP_MountPoint* and *HPUX_Mount* classes.
- HP-UX WBEM IOTree Provider: Now displays information about all slots on HP-UX 11i v3 system.
- **New:** HP-UX WBEM Online Operations Service Provider: Not currently supported; intended to support features in future releases of HP-UX 11i v3.
- HP-UX WBEM SCSI Provider: Updated to version 11.31.01, but no new feature changes.
- Ignite-UX: Updated to version C.7.0.x with multipath-awareness, new approach for addressing I/O, automatic management of the system boot path for multiple path configurations, user-selectable format for recovery archives and golden archives, and other changes.
- **New:** Kernel Tunable Values Reset From Boot Prompt: HP-UX 11i v3 release provides a new feature in which kernel tunable values can be reset from the boot prompt.

- **New:** Livedump: Provides the ability to take a crashdump on a live system without a forced shutdown or panic of that system. Implemented for Itanium®-based platforms only.
- **New:** Long Username / Groupname: Current limit enhanced from 8 to 255 bytes. By default 8 is still the limit. With an enabler this limit can be enhanced to 255. Once enabled, cannot be disabled in the future. Not supported for trusted systems.
- **New:** Node and Host Name Expansion: Provides the ability to set node and host names up to 255 bytes.
- **Obsolescence Bundle:** Used during an update when obsolete software on the system needs to be removed; automatically selected for updates. Will remove several obsolete or incompatible products and/or drivers.
- **Online Diagnostics product:** Includes several enhancements and features, including support for the Interface Expansion Program (IEP) for large username, groupname, PIDs, and `nproc`; support of additional features of HP-UX Virtual Partitions (vPars), such as support for notification of events due to dynamic CPU migration; support for agile view of devices, for reporting extended hardware path of devices, for reporting recovered Machine Check Aborts; and other features and changes.
- **SCSI Kernel Tunables:** `scsi_maxphys`, `scsi_max_qdepth` and `default_disk_ir` kernel tunables are obsolete.
- **Software Distributor:** Updated to version 11.31 with support for HP-UX 11i v3-unique features including large pid, long usernames and group names; and improved support for high level software deployment tools such as Software Manager, `update-ux`, and future tools. Includes defect fixes.
- **Software Package Builder:** Added new policy files that include the expansion of the acceptable category tags, the addition of the `is_oe` attribute, and changes to the architecture and `os_release` attribute rules.
- **System Administration Manager (SAM):** Deprecated. The `smh` command is recommended, but `sam` command will continue to be available. Some functional areas previously available are obsoleted.
- **System Administration Manager (SAM) Auditing and Security Functional Area:** System Security Policies subarea of SAM is replaced with the HP-UX Security Attributes Configuration tool; Audited NIS+ Users subarea is obsolete.
- **System Administration Manager (SAM) Printers and Plotters Functional Area:** Launch point in X/ObAM-based GUI mode is now via the HP System Management Homepage.
- **System Administration Management Tool Changes:** SAM and HP System Management Homepage: System Administration Manager (SAM) is deprecated in HP-UX 11i v3. HP System Management Homepage (HP SMH) is the system administration tool for managing HP-UX 11i. HP SMH provides web-based systems management functionality, at-a-glance monitoring of system component health, and consolidated log viewing. HP SMH also provides Terminal User Interfaces (TUIs).
- **System Fault Management:** Features include Event Manager-Common Information Model Provider and Error Management Technology. `SFMIndicationProvider` and `Log Viewer` not available; other changes included.
- **Update-UX and SW-GETTOOLS:** The `update-ux` command now uses Software Manager, a new application that provides features including support for preview; interactive TUI; better support for multiple media, including more accurate disk space analysis, dependency selection across media; and improved logging capabilities.
- **Virtual Memory Kernel Tunable `physical_io_buffers`:** Now obsolete. Was used in HP-UX 11i v1.6 and v2 to size a shared buffer pool for physical I/O operations in the kernel. As of HP-UX 11i v3 and later, the kernel automatically manages the pool size.
- **Virtual Memory Kernel Tunables:** The `eqmem_limit` (only on PA-RISC systems) has been added. Several tunables has been removed. See section for details.

Initial (February 2007) Release Notes, Chapter 6: "Disk and File Management"

- HFS (also known as UFS) File System Type: Now deprecated. Will be removed from the OS in a future release, to be determined.
- HFS file system and backup commands: To work on file sizes larger than 2TB.
- HP CIFS Client: Updated to version A.02.02.01 with support for MS Distributed File System (DFS) and DLKM feature and other changes.
- HP CIFS Server: Updated to 3.0f version A.02.03: Redesign of Winbind code; File Locking Interoperation Functionality; support for long user and group names; support for TDB Memory Map.
- HP-UX File Systems Architecture Enhancements: Numerous enhancements include VFS stacking capabilities; `fsdaemon` user level daemon; large file systems and large files support; improved file systems syncer; performance improvement of `aio_reap(2)`; support of larger files and long link names in backup utility; and several other enhancements.
- Logical Volume Manager and MirrorDisk/UX: Delivers significant scalability and availability enhancements. Supports the next generation mass storage stack, and is integrated with the mass storage stack's load balancing and dynamic LUN expansion features; enhanced to support larger logical volumes, temporary suspension of volume groups, striping with mirroring, and dynamic LUN expansion; enables online modification of a volume group, as well as a new script to simplify the replacement of a failing disk.
- Open Network Computing (ONC)
 - AutoFS/Automounter: Updated with the ability to configure AutoFS through the `/etc/default/autofs` file; a new startup/shutdown script for product (no longer controlled by the NFS client startup/shutdown script); support for NFSv4, SecureNFS, and IPv6.
 - Cache File System (CacheFS): New features include long file name support, `cachefspack`, and support for largefiles and large file system.
 - Library RPC: Library routines support several new datatypes, add support for IPv6, and more.
 - Network File System (NFS) Services: Provides numerous enhancements, including `pcnfsd` daemon, which is multithreaded and supports shadow password and Secure RPC; new user mode daemon generates and validates API security tokens, and maps the GSSAPI principal names to the local user and group IDs; additional security mechanisms, such as Secure NFS that supports Kerberos through GSSAPI; NFS access using a firewall; and many other features.
 - Network Information Service (NIS): Provides several new features including support for shadow mode; support for enabling DNS forwarding mode; support for long `uname`, `hostname`, and `username`; and other features.
 - NIS+: Obsoleted.
 - PCNFSD: `pcnfsd` daemon is multithreaded. Support for shadow password and secure RPC; support for printer names up to the PCNFSD protocol limitation of 64 characters.
- **New:** Unified File Cache: Integrates the page cache and buffer cache to provide coherency for file access. Serves as a key enabler for VxFS 4.1 and ONC+2.3. Improves source compatibility with Solaris, Tru64, and Linux applications that depend on coherency of page and buffer cache. Potential performance improvement of applications that depend on coherency of page and buffer cache.
- VERITAS File System (VxFS): Features in version 4.1 include VxFS filesystem as a DLKM; multi-device filesystems; checkpoint enhancements; portable data enhancements; and other features. Cluster File System (CFS) is not supported in the initial release of HP-UX 11i v3.
- VERITAS Volume Manager (VxVM): Features in version 4.1 include support for Volume Sets and VxFS MDS; Cross-Platform Data Sharing; Device Discovery Layer Phase 2; Serial Split Brain; and other features. Cluster Volume Manager (CVM), a part of VxVM that is enabled by a separate license, is not being provided with the current 4.1 HP-UX 11i v3 release.

Initial (February 2007) Release Notes, Chapter 7: "Internet and Networking"

- ARPA Transport: Many enhancements to ARPA Transport include Security Containment, sendfile/UFC, UNIX 2003 Conformance, large hostname support, and Tru64 Application migration to HP-UX/Itanium ®-based.
- Browsers: Mozilla is updated with defect fixes. Includes improved Asian font support on HP-UX and the Japanese Language Pack.
- HP Data Link Provider Interface (DLPI): Enhancements include *NOSYNC STREAMS* synchronization level for improved performance and scalability for high speed links, online deletion (OLD) of I/O card instances, and dynamic loading and unloading of LAN drivers without reboot.
- HP-UX PPPv6: Incorporates defect fixes.
- HP-UX VLAN: New features include support for HP-UX VLANs over APA aggregates and LAN-monitor failover groups, SMH-Network Interface Configuration support for Web-based VLAN configuration, and *nwmgr* support for HP-UX VLANs.
- HP-UX Web Server Suite
 - HP-UX Apache-based Web Server: Updated to version 2.0.58.00 as primarily a bug fix release.
 - HP-UX Webmin-based Admin: Upgraded to 1.070.08 as primarily a defect fix release.
- Internet Services: You can now deselect individual Internet Services during installation or remove filesets later.
- BIND: BIND 9.3 includes many new features, including transition support for IPv4 and IPv6. With HP-UX 11i v3, *NAMED* and *NAMED_ARGS* variables are moved to */etc/rc.config.d/namesvrs*.
- DHCPv4 (bootpd): New option *sa* configures the *tftp* server, providing control of the *siaddr* field of the *dhcp* packet. New configuration option for the *subnet selection* option in the */etc/dhcptab* file allows *bootpd* to assign a network address even if *bootpd* is not part of that network. Support for PXE clients is added.
- DHCPv6: Now available in the core operating system.
- *inetd*(1): Two new command line options, *-p* (limit number of processes invoked by *inetd*) and *-a* (enable user level auditing of processes). Support for large hostnames and large PIDs.
- *libc*: Numerous changes in APIs.
- Mailx, Elm, and Talk: *elm*(1M) and *mailx*(1M) are long-user-name compliant.
- R-commands: long username is supported.
- Sendmail: Version 8.13.3 has numerous new features.
- TFTP: *tftpd*[™] (server) and *tftp*[™] (client) now support IPv6 addresses. New command line options specify upper and lower port range limits for data transfer.
- WU-FTPD: Version 2.6.1 supports long usernames. This release introduces a new feature, *ascii count* in the *ftpaccess*(4) file by which *ftpf* can be made to reset the timeout alarm of the data connection.
- LAN Administration Commands: *lanadmin* now supports an IPoIB interface, 64-bit MIB, and native and non-native drivers developed by independent hardware vendors; *lanscan* and *linkloop* now support IPoIB interfaces.
- LDAP-UX Integration Product: This release includes the new LDAP-UX version B.04.00.10.
- **New:** Network Interface Management Command Line Interface: The *nwmgr* command is used to manage LAN-based and IB-based network interfaces; a single tool for performing all network interface-related tasks.
- **New:** Network Interfaces Configuration and Network Services Configuration: These tools in the HP System Management Homepage replace the Networking and Communications functions of the System Administration Manager (SAM), which are no longer available.

- Red Hat Directory Server for HP-UX: Updated to version B.07.10.20 to incorporate defect fixes.
- STREAMS: *NOSYNC* feature allows multiple instances of a put procedure for a queue and the service routine for that queue to run concurrently. All references to the global variable `uniprocessor` have been removed.
- NetTL - Network Tracing and Logging: The `nettl` command is enhanced with formatting support for IPoIB header, new command-line option to configure trace buffer timer value, support for pre-capture trace filters, and new command-line options to manage trace filters.

Initial (February 2007) Release Notes, Chapter 8: "Security"

- HP-UX 11i Security Containment: Fine-grained privileges and compartments are now part of the core.
- HP-UX Auditing System: Enhanced in several ways, including: Standard Mode Auditing now part of core products; multi-threaded kernel audit daemon is now dedicated in logging the data into configurable number of files for better performance; collected audit data are more comprehensive; and several other enhancements.
- HP-UX Bastille: With version B.3.0.20, new enhancements, capabilities, features, and benefits (including `bastille_drift` analysis) represent additional items that Bastille will be able to lock down, additional usability improvements, and a new ability for Bastille to check a given system against a security baseline or report on the security-configuration state of a system.
- HP-UX IPFilter: Updated to version A.03.05.13 with defect fixes and enhancements including filtering on X.25 interfaces, filtering on 10GigE interfaces; IPFilter not plumbed into the networking stack by default; no reboot required to enable IPFilter.
- **New:** HP-UX IPsec: Previously only available on the AR media. Now delivered on the HP-UX 11i v3 Operating Environments. Provides an infrastructure to allow secure communications (authentication, integrity, confidentiality) over IP networks between systems and devices that implement the IPsec protocol suite.
- HP-UX Secure Shell: Updated to version A.04.40.005 with new features including an `sftp` only solution in a `chroot` environment; TCP wrappers support for IPv6; Standard Mode Security Extensions (SMSE) enhanced to provide the "Audit all users and events" feature; and other features, as well as defect fixes.
- HP-UX Security Attributes Configuration tool (`secweb`): Updated to support long user name.
- **New:** HP-UX Standard Mode Security Extensions: Now part of the core OS; provides a new command and new library functions. Shadow passwords are now also supported with NIS.
- Install-Time Security: Updated to version 1.0.4 with new questions/configuration, diagnostic daemon configure to local-only use (not network), and `syslog` local-only.
- Kerberos Client: Updated to version 1.3.5.03 with new features including support for powerful cryptographic algorithms like 3DES, RC4, and AES; support for IPv6; support for TCP; and defect fixes.
- OpenSSL: Updated to version A.00.09.08b.09.07j with support (in default version) for several hardware ENGINES (see section for specifics); support for elliptic curve cryptography; and EVP, the library of which provides a high-level interface to cryptographic functions. Other provided versions include other features.
- PAM Kerberos: Enhanced to issue a warning if `rc_host_0` is owned by anyone other than root when a user tries to rlogin into a system; will also issue a warning if the keytable entry is not found for the host service principal on the client but present at the KDC.
- Security Patch Check: Updated to incorporate defect fixes.

Initial (February 2007) Release Notes, Chapter 9: "Commands and System Calls"

- `/etc/skel/.profile` shell script: `.` (current path) in `$PATH` is deprecated.
- 32-bit `pstat` System Call (Deprecated): When compiling a 32-bit application that uses the `pstat` () system call, the compiler option `-D_PSTAT64` must now be specified. This causes

`pstat` () to use 64-bit fields rather than 32-bit fields. The application still remains a 32-bit application.

- `at`, `cron`, and `batch` Commands: New features include support for queueing multiple jobs at the same time, support for queueing of more than 100 jobs, and ability to schedule jobs up to the `njob` limit specified for every queue in `queuedefs(4)`.
- `core` Format Implementation Change: The true version string has replaced the `ut_sname` struct in the `CORE_KERNEL` segment. A workaround has been provided for applications which reversed-engineered the `core` file format and depend on `ut_sname` being in it. This new `core` file format is now the default format.
- `csch` Command Line Interpreter: The non-interactive invocation of `csch` will not source the `~/.history` file by default.
- File Systems Backup and Recovery Commands `fbackup`, `frecover`, and `ftio`: Deprecated; will be obsolete in a future HP-UX release. You should prepare by migrating to the favorable replacement `pax`. Support will be continued for archive retrieval.
- **New:** `gcore` Command: creates a core image of each specified process.
- `getgroups` (), `setgroups` (): no longer limited by the `NGROUPS_MAX`.
- `getty` Command: Enhanced to configure the default setting for special control characters (erase, kill, etc.) by the user.
- HP-UX Kernel Configuration Commands: Includes several significant changes including revision of error, warning, and note messages for clarity; new options for `kconfig`, `kcmodule`, and `kctune` for control of automatic configuration backups; 2 new options for `kctune` command; `kctune` now allows some tunable values to be specified in terms of the percentage of some system resource; changes have been made to the kernel configuration commands to improve resiliency and performance; tunable parameter values may now be overridden on the boot loader command line; and several other changes, including some obsolescences.
- `iostat` Command: Enhanced to report activity for each active lunpath to the LUNs. Also, the new option `-L` has been added, which lists active lunpath statistics.
- `Long hostname`, `uname`, and `setuname`: The limits of these commands can now be expanded to 255 bytes.
- **New:** Long Username Support by HFS `ff`, VxFS 4.1 `ff`, `repquota`, `quotacheck`: Enhanced to support the username up to 255 bytes.
- `lp`, `lpadmin`, `lpfence`, `lpmove`, and `lpsched` Commands: Printers can now be added/removed/modified without bringing down the `lp` scheduler; line printer spooler enhanced to support printer/class names up to 250 characters from the previous limit of 14 characters; support also extended to remote destination names.
- `mmap` () System Call: Enhanced to support mapping file with read only permission with `PROT_EXEC` and implicit `mmap` with `MAP_FIXED`.
- `pax` Command: Enhanced to conform to the UNIX 2003 Standard. You will now be able to use `pax` to archive files having a size greater than or equal to 8GB; long user name/group name; large UID/GID greater than 2097151; long pathname or link name.
- PFS Commands: Obsolete.
- `pipcs` Command: Enhanced to provide details regarding processes using the various POSIX Message Queues, as well as creation time and last modification time of the POSIX Message Queues.
- `ps` Command: Enhanced to display maximum of 1020 characters in the `COMMAND` field.
- **New:** `pselect` () System Call: Added to meet the UNIX 2003 Standard. Provides additional parameter options to users of the `select` () system call. Timeout granularity may be specified in seconds and nanoseconds. A new signal mask parameter is also available to be used for the duration of system call.
- `psrset` Command: Enhanced to support one more PSET attribute type called `LCPU`.

- `pstat_getstatic()` System Call: Information returned by `pstat_getstatic()` may now change between reboots due to manually or automatically generated administrative changes in the associated kernel tunables, online addition/deletion of resources, or other events. Likelihood of it changing is infrequent.
- **New:** Ptools Process Management Tools: New set of process management tools that support easy process tracking and debugging. Consists of the following commands: `pmap`, `pfiles`, `pgrep`, `pkill`, `ptree`.
- `ptrace()` System Call: Obsolete in HP-UX 11i v3.
- `sar` Command: Enhanced to report activity for each HBA and Tape device.
- `setboot` Command: modified to take a persistent DSF or a lunpath hardware path as valid input to set the bootpath for next boot; enhanced to enable or disable hyperthreading environment for the next boot on a Dual-Core Intel® Itanium® 2 platform.
- `sigblock(2)`, `sigsetmask(2)`, `sigstack(2)`, `sigvector(2)`, `bsd_signal(3C)`: Manpages are obsolete.
- `spray` Command: Provides two new options: `-d`, which specifies how many microseconds to pause between sending each packet, and `-t`, which specifies class of transports.
- **New:** `swapctl()` System Call: Allows you to configure primary swap to take effect on the next boot. Previously this could only be done via the commands `lvlnboot` and `vxvmbboot`. `swapon()` system call is deprecated.
- `swapon` and `swapinfo` Commands: `swapon` command enhanced to support setting/unsetting of primary swap device for next boot; `swapinfo` command supports new `-s` option to display settings of the primary swap for next boot.
- `sysdef` Command: Deprecated. Reports incorrect values for some tunable parameters such as `msgmap`, `sema`, and `shmem`.
- `syslogd` Command: Enhanced to log multibyte message strings correctly.
- `usermod` has been modified to selectively prevent the movement of home directories with `-m` option.
- UNIX 2003 Compliance: All commands are modified/enhanced to conform to UNIX 2003 Standards. The UNIX 2003 changes which do not affect HP-UX compatibility are available by default. Otherwise, in order to get UNIX 2003 behavior, the variable `UNIX_STD` has to be defined in the environment.

Initial (February 2007) Release Notes, Chapter 10: "Libraries and Programming"

- Bundled C Compiler: Updated to version A.06.12 on Integrity Servers and B.11.11.16 on PA-RISC. Highly compatible with previous versions; diagnostic messages have changed; more erroneous and suspicious source constructs are diagnosed.
- aC++ Run Time Library: Includes the `-AA -D_HP_NONSTD_FAST_IOSTREAM` performance improvement macro, C++ Standard Library TC1 compliance change, and USA 2007 Daylight Savings Time legislation support.
- FirstBoot: As part of Transition links (a.k.a. Upgrade), HP used to create a symbolic link `/etc/set_parms -> /sbin/set_parms`. Transition links are obsoleted in HP-UX 11i v3 and `set_parms` is available to the user as `/sbin/set_parms`. So HP-UX 11i v3 will not support the symbolic link `/etc/set_parms`.
- HP MLIB: Updated to version 9.5 with the addition of two new libraries, `VECLIBSC8` and `LAPACKSC8`, which are 64-bit address libraries with 64-bit integer values that use calling conventions similar to those found in Cray's `SCILIB` math library.
- HP-UX C Library (`libc`)
 - HP-UX C library (`libc`) - UNIX 2003 Standard Compliance: `libc` library enhanced to comply with UNIX 2003 standards. A number of APIs have been added, while some APIs have been modified.
 - HP-UX C library (`libc`) - Other Changes: New features include Tru64 API migration, `malloc(3C)` thread local cache enhancements, long username and groupname.

- *libc(1)* Library: Deprecated. Is a HP-UX 10.20 compatibility “C” library available in HP-UX 11i. No immediate impact in HP-UX 11i v3. When the *libc(1)* library is obsoleted, all programs linking to this library will not work. Hence you are encouraged to start migrating your programs from *libc(1)* to *libc(2)* library.
- Networking *libc* APIs: The return value of the *gai_strerror(3N)* API has changed from `char` to `const char`. Includes other changes as well.
- HP-UX Color-Curses: *libcur_colr* Library and Commands: Obsolete. Were declared deprecated in HP-UX 10.30 and are not available in HP-UX 11i v3 PA-RISC.
- Java 2 Platform
 - Java JDK/JRE for HP-UX: HP-UX 11i v3 does not include Java 1.3 and Java 3D (J3D 1.4). SDK/RTE version 5.0 has been updated to incorporate defect fixes.
 - Java Out-of-Box: Updated to incorporate defect fixes.
- **New:** *libIO* Library: *libIO.so* (for Itanium®-based systems) or *libIO.sl* (for PA-RISC systems) is a shared library, which provides APIs for accessing the HP-UX I/O subsystem information. The library will reduce the dependency on other HP-UX commands for I/O information.
- *libpthread* Library: Added new API, *pthread_setschedprio()*, to set scheduling priority of target thread.
- Link Editor (*ld*): Additional linker options introduced since patch PHSS_34440, June 2006, and other changes.
- Mercury Library (*libhg*): Provides high performance interfaces between the user programs and the kernel making it possible to transfer key pieces of information back and forth at high speeds.
- Software Transition Kit (STK): Designed to help transition HP-UX applications from earlier versions of HP-UX to the latest version of HP-UX. Will not be available for HP-UX 11i v3.
- Threads Renice facility: Two new *pthread* APIs to change *nice* value of a thread in a multi-threaded process.
- UNIX 2003 Standard Profile Conformance: New functions and compiler conformance as defined in Single UNIX Specification version 3. The Precision Architecture (PA) systems have most of the UNIX 2003 features available for applications. Since the C99 compiler will not be available on PA, full UNIX 2003 branding is not supported. Itanium®-based systems fully conform and are branded to UNIX 2003.
- Unwind Library (*libunwind*): Updated to version 1.48. Performance of the unwind express APIs has been improved substantially; *U_STACK_TRACE(3X)* and *_UNW_STACK_TRACE(3X)* APIs have been enhanced; new APIs have been added to the unwind express portion of the library.

Initial (February 2007) Release Notes, Chapter 11: “Internationalization”

- Unicode 5.0: Now supported. Unicode 5.0 is an extension to the previously supported Unicode 3.0 character set standard.
- **New:** JISX0213 Standard: Now supported.
- **New:** KS X 1001 Standard: Now supported.
- **New:** Big5-2003 and CNS11643 Standards: Now supported.
- **New:** HKSCS-2004 (Hong Kong Supplementary Character Set): Now supported.
- **New:** Locales - Baltic/Russia/Ukraine/Latin America: Now supported.
- **New:** Locale Versioning: *localedef/libc* UNIX 2003-related I18N changes. New locale version “*locales.3*” has been generated for all system supported locale binaries. This has been provided to protect older PA-RISC-based archived applications from unexpected systems behavior in order to fully support the UNIX 2003 standard.

- UNIX 2003 Support: The `localedef`, `locale` and `iconv` commands and the associated C library APIs, locale databases and `iconv` converters have been updated to align with the UNIX 2003 standard.
- Alternate Width Properties for Unicode Codesets: Now supported for Asian locales.
- **New:** Messaging Commands: `mkcatdefs`, `dspmsg`, and `dspcat` . Added to HP-UX for compatibility with Tru64 UNIX.
- **New:** Iconv Codeset Converter Config File Changes: `system.config.iconv`. New `system.config.iconv` file provided to separate the HP-UX core OS `iconv` mapping table information from the layered third-party and user-specific `iconv` mapping table information.
- Japanese Mainframe Character Set: `iconv` now supports an extended area of Japanese mainframe character sets.
- **New:** Internationalized PostScript Printing Support: `psfontpf`: New PostScript printer filter `psfontpf` enables printing of non-English international characters in text files and web pages.
- Asian Printing: Asian `lpmodel` files and filters have been enhanced to support important Asian national standards and ISO 10646.
- TrueType Fonts for European Codesets: Provides additional TrueType fonts support to cover the glyph patterns for ASCII, Latin-1 Supplement, Latin Extended-A, Latin-Extended-B, Greek, Cyrillic, and currency symbols.
- Asian TrueType Fonts: Enhanced to support the latest national standards and ISO10646. New typefaces are provided for Japanese, Simplified Chinese, and Traditional Chinese fonts.
- Asian Bitmap Fonts: Enhanced to support the latest national standards and ISO 10646.
- Fallback Font Support: For text-based GUI applications, in the event there are no glyphs, the application will display “?” or “: ” characters.
- Asian Functionality (Obsoleted): Several legacy functions are obsolete and have been removed. Also, certain Asian printer `lp` models, utility/library routines, and dot bitmap fonts have been deprecated.

Initial (February 2007) Release Notes, Chapter 12: “Other Functionality”

- Common Desktop Environment: Updated to version 2.1. now includes native Itanium®-based 32-bit CDE binaries, 32-bit Xclients, and other features; delivers 64-bit PA-RISC and Itanium®-based libraries for the first time in HP-UX 11i v3; supports Node and Host Name Expansion feature and expanded username feature; and includes several other changes.
- Distributed Computing Environment (DCE) Client and Integrated Login: Several filesets have been removed; several products are not available with DCE Client; Integrated Login has introduced a new library.



NOTE: Revisions to the initial (February 2007) *HP-UX 11i v3 Release Notes* are contained in the *HP-UX 11i v3 Release Notes Errata*, Edition 3, MPN 5992-5827, located at <http://docs.hp.com/en/oshpux11iv3.html> (navigate to **Release Notes**).

4 Hardware-Specific Information

What is in This Chapter

This chapter provides information about hardware supported by the HP-UX 11i v3 release. It includes the following sections:

- “Dynamic P-States Feature” (page 96)
- “Hardware Enablement Bundle for HP-UX 11i v3” (page 96)
- “Mass Storage Stack” (page 97)
- “Networking and Mass Storage Drivers” (page 98)
 - “Required Networking Drivers” (page 98)
 - “GigEther-00” (page 98)
 - “GigEther-01 ” (page 99)
 - “IEther-00” (page 100)
 - “Optional Networking Drivers” (page 100)
 - “IB4X-00 Driver for InfiniBand” (page 101)
 - “Required Mass Storage Drivers” (page 101)
 - “CommonIO” (page 102)
 - “RAID-01” (page 102)
 - “scsiU320-00” (page 103)
 - “SerialSCSI-00” (page 103)
 - “USB-00” (page 104)
 - “Recommended Mass Storage Drivers” (page 104)
 - “FibrChanl-00 (Fibre Channel Mass Storage Driver) ” (page 105)
 - “FibrChanl-01 (Fibre Channel Mass Storage Driver)” (page 105)
 - “FibrChanl-02 (Fibre Channel Mass Storage Driver)” (page 106)
- “Supported Systems” (page 106)
- “Finding Firmware Information” (page 107)
- “Supported and Unsupported HP-UX I/O Cards” (page 107)
- “Utility Pricing Solutions” (page 107)
 - “HP Instant Capacity” (page 108)

Dynamic P-States Feature

This new feature adds the ability to control processor performance from within HP-UX, allowing systems to conserve power when not fully loaded. Requires Intel® Itanium® 9100 series or later processors.

Summary of Change

A new command, `pstatectl(1M)`, is provided to control the new functionality. A startup script and associated configuration file (`/etc/rc.config.d/pstate`) are also included. To obtain the manpage for the `pstatectl` command, download PHCO_39261 from the ITRC website: <http://itrc.hp.com>.

Impact

Unless you explicitly turn on this new feature, there will be no impact. When this feature is enabled, some workloads may show some minor performance impact in terms of throughput or responsiveness. At the same time, you can expect to see up to an 8% reduction in CPU power on systems with Intel® Itanium® 9100 series processors.

Compatibility

The Dynamic P-States feature requires Intel® Itanium® 9100 series or later processors. There is no equivalent feature available for PA-RISC processors.

Systems with Intel® Itanium® 9100 series processors must have the following firmware or a later version:

- BL860c, BL870c: SFW 04.05 or later
- rx2660, rx3600, rx6600: SFW 04.03 or later
- rx7640, rx8640: SFW 4.1 or later
- HP Integrity Superdome, sx2000: SFW 8.7e or later

Performance

When used to reduce system power consumption, there will be a reduction in performance according to the power mode selected. In the suggested dynamic power savings mode, the performance loss will generally be less than 1%.

Documentation

To obtain the manpage for the `pstatectl` command, download PHCO_39261 from the ITRC website: <http://itrc.hp.com>.

Obsolescence

Not applicable.

Hardware Enablement Bundle for HP-UX 11i v3

The Hardware Enablement Patch Bundle for HP-UX 11i v3 (`HWEEnable11i`) provides patches required for new systems and for add-on hardware supported on HP-UX 11i v3, including I/O adapters and devices.

Summary of Change

The `HWEEnable11i` bundle provides support for new PCI-Express I/O adapters in HP Integrity Servers, and HP-UX support for HP servers with PA8900 processors and the sx2000 chipset. Minimal HP-UX support requires other HWE components from this OE Update Release (OEUR)

that includes diagnostics, I/O driver bundles, along with the Ignite-UX product. HP recommends a full update to the desired OE option from the latest 11i OEUR for full HP-UX support with the updated versions of the manageability and configuration tools.

This `HWEnable11i` bundle includes new HP-UX 11i v3 patches that improve PCIe Error Recovery (ER) and support of new PCIe devices. New patches were also added for CPU and memory On-Line Addition/Deletion (OLAD) for future HP platforms.

Impact

HP updates this patch bundle with required patches for new hardware. This bundle is delivered on each updated release of the 11i v3 OE media. In addition to delivery on the HP-UX 11i v3 OE media, the `HWEnable11i` patch bundle is also available from the ITRC web site: <http://itrc.hp.com>.

Compatibility

There are no known compatibility issues.

Performance

There are no known performance issues.

Documentation

The "bundle readme" document can be found on the OE media under the `/DOCS/PATCH` directory, or on the IT Resource Center website.

For further information, refer to the following ITRC website:

- <http://itrc.hp.com> (Select link for **More maintenance and support options**. Then, select link for **standard patch bundles**.)

Also refer to the latest editions of the following documents, available at <http://www.docs.hp.com/hpux/os/11iV3>:

- *HP-UX 11i v3 Installation and Update Guide* (under **Installing and Updating**)
- *Read Before Installing or Updating to HP-UX 11i v3* (under **Installing and Updating**)
- *Patch Management User Guide for HP-UX 11.x Systems* (under **Patch Management**)
- *HP-UX 11i Version 3 Release Notes* (under **Release Notes**)

Obsolescence

Not applicable.

Mass Storage Stack

The mass storage stack manages I/O devices, such as SCSI logical units (LUNs). In HP-UX 11i v3, it delivers functionality designed to enhance server scalability, adaptability, and performance.

Summary of Change

The March 2009 release includes the following enhancements to the mass storage stack:

- Enhanced the mass storage stack to do target port congestion control
- Added a fairness policy between regular I/O and high priority (internal) I/O
- Allow the user to specify the actual lunpath to lockdown for the "path_lockdown" load balancing policy
- Added new tunables to `scsimgr` for these enhancements

This release also includes defect fixes.

Impact

These defect fixes and enhancements improve server manageability, ease-of-use, and I/O performance.

Compatibility

There are no known compatibility issues.

Performance

SAN congestion events are minimized with target port congestion control. I/O timeouts can be reduced with the new fairness policy.

Documentation

For an overview of the Next Generation Mass Storage Stack, please see the white paper entitled "The Next Generation Mass Storage Stack," available at <http://docs.hp.com/en/netsys.html#Storage%20Area%20Management>

For task-oriented information about managing mass storage, see *HP-UX System Administrator's Guide: Storage Management* at the same website.

For details on new or modified commands, please check their associated manpages. In particular, the *scsimgr(1M)* manpage covers the changes to *scsimgr*.

For details on defect fixes, see the patch documentation for the following patches:

- PHCO_38603 11.31 *scsimgr* cumulative patch
- PHKL_38604 11.31 *esctl* cumulative patch
- PHKL_38605 11.31 *esdisk* cumulative patch

Obsolescence

No new obsolescence issues beyond those issued for the February 2007 release of HP-UX 11i v3.

Networking and Mass Storage Drivers

HP-UX 11i v3 includes drivers for networking and mass storage adapter cards. The drivers are described in the following sections:

- "Required Networking Drivers" (page 98)
- "Optional Networking Drivers" (page 100)
- "Required Mass Storage Drivers" (page 101)
- "Recommended Mass Storage Drivers" (page 104)



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

Required Networking Drivers

The drivers in the following subsections are required, meaning they are automatically installed during HP-UX installation.

GigEther-00

Gigabit Ethernet networking driver bundle *GigEther-00* supplies the driver *gelan*.

Summary of Change

GigEther-00 has been updated to incorporate defect fixes. For details, see the *GigEther-00 (gelan) Gigabit Ethernet Driver for HP-UX 11i v3 of March 2009 Release Notes*, available at <http://docs.hp.com> under **I/O Cards and Networking Software** and then under **Gigabit Ethernet**.

Impact

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

Compatibility

A list of systems that use the currently supported Gigabit Ethernet drivers is located in the *HP-UX Ethernet Driver Support Matrix, Edition 2 (for Releases of Sept 2004 and Later)*. It is located on <http://docs.hp.com> under **I/O Cards and Networking Software** and then under **Gigabit Ethernet**.

Performance

There are no known performance issues.

Documentation

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

A list of systems that use the currently supported Gigabit Ethernet drivers is located in the *HP-UX Ethernet Driver Support Matrix, Edition 2 (for Releases of Sept 2004 and Later)*. It is located on <http://docs.hp.com> under **I/O Cards and Networking Software** and then under **Gigabit Ethernet**.

For the online manual page, see *nwmgr_gelan(1M)*.

Obsolescence

Not applicable.

GigEther-01

Gigabit Ethernet networking driver bundle GigEther-01 supplies the driver igelan.

Summary of Change

GigEther-01 has been updated to incorporate defect fixes. For details, see the *GigEther-01 (igelan) Gigabit Ethernet Driver for HP-UX 11i v3 of March 2009 Release Notes*, available at <http://docs.hp.com> under **I/O Cards and Networking Software** and then under **Gigabit Ethernet**.

Impact

To see what has changed from one release to the next, see the GigEther-01 driver's release history. It is located on <http://docs.hp.com> under **I/O Cards and Networking Software** and then under **Gigabit Ethernet**.

Compatibility

A list of systems that use the currently supported Gigabit Ethernet drivers is located in the *HP-UX Ethernet Driver Support Matrix, Edition 2 (for Releases of Sept 2004 and Later)*. It is located on <http://docs.hp.com> under **I/O Cards and Networking Software** and then under **Gigabit Ethernet**.

Performance

There are no known performance issues.

Documentation

To see what has changed from one release to the next, see the GigEther-01 driver's release history. It is located on <http://docs.hp.com> under **I/O Cards and Networking Software** and then under **Gigabit Ethernet**.

A list of systems that use the currently supported Gigabit Ethernet drivers is located in the *HP-UX Ethernet Driver Support Matrix, Edition 2 (for Releases of Sept 2004 and Later)*. It is located on <http://docs.hp.com> under **I/O Cards and Networking Software** and then under **Gigabit Ethernet**.

For the online manual page, see *nwmgr_igelan(1M)*.

Obsolescence

Not applicable.

IEther-00

The IEther-00 bundle delivers the driver *iether*, which supports the following gigabit ethernet adapters: A7011A, A7012A, AB545A, AD331A, AD332A, AD337A, AD338A, AD339A, NC360m, NC364m. The *iether* driver also supports the gigabit ethernet component of the following combination cards: AB290A, AD193A, AD194A, AD221A, AD222A, AD393A.

Summary of Change

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

Impact

There is no impact.

Compatibility

There are no known compatibility issues.

Performance

There are no known performance issues.

Documentation

For further information on specific changes in this release, see the *IEther-00 (iether) B.11.31.0903 Gigabit Ethernet Driver Release Notes*. For further information on supported cards, see the *Ethernet System-Driver Matrix*. These documents are available at <http://docs.hp.com/en/netcom.html> (navigate to **1000Base-T and 1000Base-SX (Gigabit Ethernet)**).

Obsolescence

Not applicable.

Optional Networking Drivers

The drivers in the following subsections are optional, meaning they are not automatically installed, but can be selected during installation.



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

IB4X-00 Driver for InfiniBand

The IB4X-00 product is the driver for the fabric clustering system for InfiniBand.

Summary of Change

With this release, the IB4X-00 product will support the Reliable Datagram Sockets (RDS) protocol for Oracle RAC environments and for connectivity to the HP/Oracle Exadata intelligent storage cell.

The RDS protocol is supported only on AH304A and 448262-B21.

Impact

You can deploy Oracle RAC with RDS/Infiniband on HP-UX 11i v3. You can also connect an Oracle database server running on HP-UX 11i v3 with the Exadata cell.

Compatibility

There are no known compatibility issues.

Performance

The Exadata cell greatly improves query performance for data warehousing/business intelligence applications.

Documentation

The following documents will be found at the following website under the **Fabric Clustering System for InfiniBand** heading:

<http://docs.hp.com/en/netcom.html#Fabric%20Clustering%20System%20for%20InfiniBand>

- *IB4X-00 Driver for InfiniBand Release Notes*
- *HP Fabric Clustering System for InfiniBand Support Matrix*
- *HP Fabric Clustering System HP-UX Administrator's Guide*

Obsolescence

Not applicable.

Required Mass Storage Drivers

The mass storage drivers in the following subsection are required, which means they are automatically installed during HP-UX installation.



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

CommonIO

The CommonIO bundle packages multiple products, and is always installed.

Summary of Change

The CommonIO bundle has been updated with quality improvements.

Impact

There are no impacts.

Compatibility

There are no known compatibility issues.

Performance

There are no known performance issues.

Documentation

For further information on specific changes in this release, see the *HP CommonIO B.11.31.0903 Release Notes*. For further information on supported cards, see the *SAS Host Bus Adapters Support Matrix* and the *HP Fibre Channel Host Bus Adapter Support Matrix*. These documents are available at <http://docs.hp.com/en/netcom.html>.

Obsolescence

Not applicable.

RAID-01

The RAID-01 bundle delivers the driver `ciss` for the A7143A, A9890A, A9891A, P400, and P800 Smart Array controllers.

Summary of Change

The RAID-01 bundle has been updated with quality improvements.

Impact

There are no impacts.

Compatibility

There are no known compatibility issues.

Performance

There are no known performance issues.

Documentation

For further information on specific changes in this release, see the *RAID-01 (ciss) B.11.31.0903 Mass Storage Driver Release Notes*. For further information on supported cards, see the *HP Smart*

Array RAID Controllers Support Matrix. These documents are available at <http://docs.hp.com/en/netcom.html> (navigate to **Smart Array (RAID)**).

Obsolescence

Not applicable.

scsiU320-00

The `scsiU320-00` bundle delivers the `mpt` driver, which supports the A7173A and AB290A U320 SCSI host bus adapters.

Summary of Change

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

Impact

There are no impacts.

Compatibility

There are no known compatibility issues.

Performance

There are no known performance issues.

Documentation

For further information on specific changes in this release, see the *scsiU320-00 (mpt) B.11.31.0903 Mass Storage Driver Release Notes*. For further information on supported cards, see the *HP Ultra320 SCSI Host Bus Adapter Support Matrix*. These documents are available at <http://docs.hp.com/en/netcom.html> (navigate to **SCSI Host Bus Adapters**).

Obsolescence

Not applicable.

SerialSCSI-00

The `SerialSCSI-00` bundle delivers the driver `sasd` for the factory-integrated internal SAS controller on certain servers, and for the AH303A PCIe SC44Ge Host Bus Adapter. The `CommonIO` bundle is also required to support these controllers.

Summary of Change

The `SerialSCSI-00` driver bundle has been updated with quality improvements.

Impact

There are no impacts.

Compatibility

There are no known compatibility issues.

Performance

There are no known performance issues.

Documentation

For further information on specific changes in this release, see the *SerialSCSI-00 (sasd) B.11.31.0903 Mass Storage Driver Release Notes*. For further information on supported cards, see the *SAS Host Bus Adapters Support Matrix*. These documents are available at <http://docs.hp.com/en/netcom.html> (navigate to **SAS Host Bus Adapters**).

Obsolescence

Not applicable.

USB-00

The USB-00 D.11.31.0903 bundle enables the new USB 2.0 support. The selection of this bundle will automatically select the required patches from the March 2009 OE media.

Impact

If you wish to retain the existing USB driver functionality (if installed), please deselect the USB-00 bundle from your installation of this OE. This will result in a warning from the pre-install script of PHKL_37815 about the need to remove the current USB-00 bundle to get the new functionality. This warning can be safely ignored since leaving the current functionality is the desired result in this case.

Compatibility

The driver names, hardware paths, and the `ioscan` output are different for USB devices. Any scripts that rely on the OO versions of these will have to change. If you wish to maintain the current behavior (and known problems) of the object oriented driver, USB-00 D.11.31.0903 bundle should not be installed.

Performance

With USB-00 D.11.31.0903 and PHKL_37815, the performance of locally connected (non-vMedia) USB 2.0 devices will be substantially better because they will be accessed using USB 2.0 capable drivers and not at USB 1.1 speeds.

Documentation

The white paper will be at <http://docs.hp.com/en/15027/UpdatetoUSBDriverSupportonHPUX11iv3.pdf>.

Obsolescence

USB-00 will be discontinued in 11i v4. Meanwhile, USB-00 version D provides a transition vehicle to the new driver delivered as part of the core.

Recommended Mass Storage Drivers

The drivers in the following subsections are recommended, meaning they are installed by default and should be installed because they may fulfill required software dependencies, if any exist. You can manually deselect them before you install or update the system.



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

FibrChanl-00 (Fibre Channel Mass Storage Driver)

The HP PCI Tachyon TL/XL2 driver (td) is part of the FibrChanl-00 bundle. The HP PCI Tachyon TL/XL2 Fibre Channel driver manages the following single-port Host Bus Adapters (HBAs):

- A6795A PCI Tachyon XL2 Fibre Channel Adapter
- A5158A PCI Tachlite Fibre Channel Adapter

Summary of Change

An internal defect is fixed in this release.

The product version number is updated from B.11.31.0809 to B.11.31.0903.

Impact

There is no impact.

Compatibility

There are no known compatibility issues.

Performance

There are no known performance issues.

Documentation

The most current documentation for this product can be found in the **I/O Cards and Networking Software** area on <http://docs.hp.com>, at <http://docs.hp.com/en/netcom.html>

Obsolescence

Not applicable.

FibrChanl-01 (Fibre Channel Mass Storage Driver)

The FibrChanl-01 bundle delivers the driver fcd, for use with Fibre Channel HBAs.

Summary of Change

The FibrChanl-01 bundle has been updated with quality improvements.

Impact

There is no impact.

Compatibility

There are no known compatibility issues.

Performance

There are no known performance issues.

Documentation

For further information on specific changes in this release, see the *FibrChanl-01 (fcd) Fiber Channel Mass Storage Driver for HP-UX 11i v3 Release Notes*. For further information on supported cards, see the *HP Fibre Channel (fcd and fclp) Host Bus Adapter Support Matrix*. These documents are available at <http://docs.hp.com/en/netcom.html> (navigate to **Fibre Channel**).

Obsolescence

Not applicable.

FibrChanl-02 (Fibre Channel Mass Storage Driver)

The `FibrChanl-02` bundle delivers the driver `fclp`, for use with Fibre Channel HBAs.

Summary of Change

The `FibrChanl-02` bundle has been updated with quality improvements.

Impact

There is no impact.

Compatibility

There are no known compatibility issues.

Performance

There are no known performance issues.

Documentation

For further information on specific changes in this release, see the *FibrChanl-02 (fclp) Fibre Channel Mass Storage Driver for HP-UX 11i v3 Release Notes*. For further information on supported cards, see the *HP Fibre Channel (fcd and fclp) Host Bus Adapter Support Matrix*. These documents are available at <http://docs.hp.com/en/netcom.html> (navigate to **Fibre Channel**).

Obsolescence

Not applicable.

Supported Systems

For a list of HP 9000 and HP Integrity systems that this release of HP-UX 11i v3 fully supports, refer to HP Server Support Matrix at the following website:

<http://www.hp.com/go/hpuxservermatrix>



NOTE: HP-UX 11i v3 is not supported on workstations. HP recommends that PA-RISC workstation users use HP-UX 11i v1, and Itanium®-based workstation users use HP-UX 11i v2. Further information about HP workstations can be found at the following website:

<http://hp.com/go/workstations>.

Additional information regarding HP servers can be found at the following websites:

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

Additional hardware documentation can be found at the following website:

- Enterprise Servers, Workstations, and Systems Hardware:
<http://www.docs.hp.com/en/hw.html>

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 v3, refer to the documents at <http://docs.hp.com/en/hw.html#System%20Firmware>.
- The system firmware files, installation instructions, and release notes with detailed firmware version information can be obtained by selecting **Download Drivers and Software** at <http://www.hp.com/go/bizsupport>. This provides a searchable database for various products or you can follow the product links to select the latest firmware download for your specific server product. Be sure to read the Release Notes for the firmware to ensure a successful update. In general, HP recommends that you update to the latest firmware available before installing or updating to HP-UX 11i v3.
- Use Subscriber's Choice for the latest firmware updates.

HP recommends that you sign-up for Subscriber's Choice so you can automatically receive email notices for the latest firmware updates. Make sure you register all your products to receive the appropriate firmware update notices. At the ITRC website (<http://itrc.hp.com>), click **More maintenance and support options**, then **Subscribe to proactive notifications and security bulletins**.

- Use the Business Support Center Website.

You can also go to the Business Support Center website at <http://www.hp.com/go/bizsupport> for the latest HP-UX 11i firmware updates. The IT Resource Center (ITRC) website at <http://itrc.hp.com> also provides a link to the Business Support Center.

Supported and Unsupported HP-UX I/O Cards

Current information about supported and unsupported HP-UX I/O cards can be found in the HP-UX Supported I/O Cards Matrix, which is located on the **I/O Cards and Networking Software** Web page at <http://www.docs.hp.com/en/netcom.html> (navigate to **IO Cards**).

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

Utility Pricing Solutions

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



NOTE: PPU is unchanged for the March 2009 update release.

HP Instant Capacity

The HP Instant Capacity (iCAP) version B.11.31.09.01.00 software (product number B9073BA) provides the ability to instantly increase or decrease processing capacity on specified HP Enterprise servers.

Summary of Change

iCAP version B.11.31.09.01.00 includes the following new features and changes:

- iCAP 9.01 provides support of the IPV6 network protocol for GiCAP group managers and members
- iCAP 9.01 is required for use with VSE 4.1, specifically for gWLM 4.1 and iCAP Manager 4.1
- Minor changes were made to the `icapstatus`, `icapmanage`, and `icapmanpages`
- Several defect fixes have been incorporated

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

Impact

More versatility in configuring GiCAP groups (with IPV6) and more functionality with gWLM and iCAP Manager.

Compatibility

gWLM 4.1 requires iCAP 9.01 for GiCAP integration support. iCAP Manager 4.1 requires iCAP 9.01 to be able to configure iCAP systems.

Performance

There are no known performance issues.

Documentation

For additional information, see the following:

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

- Documents:

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

Obsolescence

Not applicable.

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” (page 113)
- “Dynamic Root Disk” (page 114)
- “Enterprise Cluster Master Toolkit” (page 114)
- “Event Monitoring Service” (page 115)
- “Feature Enablement Patch Bundle (FEATURE11i)” (page 116)
- “FIRSTBOOT” (page 116)
- “High Availability Monitors” (page 117)
- “HP Partitioning and Virtual Server Environment” (page 118)
 - “Accelerated Virtual I/O (AVIO)” (page 118)
 - “HP Application Discovery (AppDiscAgent)” (page 119)
 - “HP Integrity Virtual Machines (Integrity VM)” (page 120)
 - “HP Integrity VM Guest Support Libraries (VMGuestLib)” (page 121)
 - “HP Integrity Virtual Machines (VMGuestSW)” (page 122)
 - “HP Integrity Virtual Machines (VMKernelSW)” (page 122)
 - “HP Integrity Virtual Machines Manager” (page 123)
 - “HP Integrity Virtual Machines Provider (VM Provider)” (page 124)
 - “HP Process Resource Manager ” (page 125)
 - “HP Virtual Server Environment (VSE)” (page 126)
 - “HP-UX nPartition Configuration Commands” (page 129)
 - “HP-UX Virtual Partitions” (page 130)
 - “Partition Manager” (page 130)
 - “Utilization Provider” (page 131)
- “HP Serviceguard” (page 132)
- “HP Serviceguard NFS Toolkit” (page 133)
- “HP System Management Homepage” (page 134)
- “HP Systems Insight Manager ” (page 134)
- “HP-UX Disks and File Systems (fsweb)” (page 136)
- “HP-UX Kernel Configuration (kcweb)” (page 137)
- “HP-UX Peripheral Devices Manager (pdweb)” (page 137)
- “HP-UX Software Assistant” (page 138)
- “iCAP Manager” (page 138)
- “Ignite-UX” (page 139)
- “Logical Volume Manager” (page 140)
- “Network Interfaces Configuration and Network Services Configuration” (page 141)
- “Obsolescence Bundle” (page 142)
- “Online Diagnostics” (page 143)
- “Printer Management (web-based)” (page 144)
- “PropPlus (SysMgmtPlus)” (page 144)
- “ProviderSvcsBase” (page 145)
- “Quality Pack Patch Bundles” (page 146)
- “Software Distributor (SD)” (page 147)

- “Software Package Builder ” (page 147)
- “System Fault Management” (page 148)
- “Update-UX and SW-GETTOOLS” (page 149)
- “WBEM Services and Providers” (page 150)
 - “HP WBEM Services for HP-UX” (page 150)
 - “Direct Attached Storage Provider (DASProvider)” (page 151)
 - “HP-UX WBEM Fibre Channel Provider ” (page 152)
 - “HP-UX WBEM IOTree Indication Provider” (page 153)
 - “HP-UX WBEM Kernel Providers” (page 154)
 - “HP-UX WBEM Online Operations Service Provider” (page 155)
 - “HP-UX WBEM RAIDSA Provider” (page 155)
 - “HP-UX WBEM SAS Provider” (page 156)
 - “HP-UX WBEM SCSI Provider” (page 157)
 - “HP-UX WBEMP-LAN Provider” (page 158)

Distributed Systems Administration Utilities

Distributed Systems Administration Utilities (DSAU) provides tools that simplify managing groups of systems and Serviceguard clusters. DSAU is based on open source tools `cfengine`, `pdsh`, and `syslog-ng` and consists of three primary components:

- Configuration synchronization tools that use Configuration Engine (`cfengine`)
- Consolidated logging tools that use Syslog Next Generation (`syslog-ng`)
- Command fanout tools that use Parallel Distributed Shell (`pdsh`)

DSAU provides wizards for managing systems. The wizards can be launched from HP SMH/HP SIM.

Summary of Change

This release of DSAU (V2.4) offers the following enhancements:

- Web-based graphical user interface for the `csync` and `clog` CLI wizards. The new interface is available as plugins — Configuration Synchronization and Consolidated Logging — to HP SMH. The plugins support all features currently supported in the CLI wizards.
- IPv6 support
- Serviceguard 11.19 certification

System Log Viewer is now renamed to System and Consolidated Log Viewer.

For more information about the changes in this release, see the *Distributed Systems Administration Utilities (DSAU) V2.4 Release Notes for HP-UX 11i v3 March 2009*.

Impact

You can benefit from the ease-of-use that the web-based interface provides for configuration synchronization and consolidated logging.

Compatibility

There is no known compatibility issue.

Performance

There is no known performance issue.

Documentation

- The following documents are available on <http://docs.hp.com> (navigate to **Network and Systems Management**, then to **System Administration**):
 - *Distributed Systems Administration Utilities Release Notes*
 - *Distributed Systems Administration Utilities User's Guide*
- The following manpages are available in the 1M and 1 manual page volumes:
 - 1M: `cexec`, `cwall`, `clog_wizard`, `clog`, `csync_wizard`
 - 1: `ccp`, `cexec`, `ckill`, `cps`, `csshsetup`, `cuptime`
- Open source manpages for `cfengine`, `pdsh`, and `syslog-ng` are available with the installed product at the location `opt/dsau/doc`.

Obsolescence

Not applicable.

Dynamic Root Disk

Dynamic Root Disk (DRD) is an HP-UX system administration toolset that provides you with the ability to clone an HP-UX system image to an inactive disk, then:

- perform system maintenance on the clone while your HP-UX 11i system is online
- update from an older version of HP-UX 11i v3 (initial release, Update 1, Update 2 or Update 3) to HP-UX 11i v3 Update 4
- quickly re-boot during off hours once the desired changes have been made
- utilize the clone for system recovery if needed
- rehost the clone on another system for testing or provisioning purposes (on VMs or blades utilizing Virtual Connect; LVM only)

The bundle name is `DynRootDisk`. The product name is DRD. Administrators can use DRD to reduce downtime for system maintenance by creating an inactive clone of the booted system, then applying patches and products to the clone. The modified clone can then be booted at a convenient time. DRD supports both HP Logical Volume Manager (LVM) and Veritas (VxVM) root volumes except where specifically noted above, and runs on both HP-UX 11i v2 and v3.

The HP-UX Dynamic Root Disk website at <http://docs.hp.com/en/DRD> provides a product overview, download links, documentation links, and installation instructions.

The version number will have a base of B.11.31.A.3.3 followed by one more number based on the last build.

Summary of Change

This version of Dynamic Root Disk introduces the ability to update from an older version of HP-UX 11i v3 (initial release, Update 1, Update 2 or Update 3) to HP-UX 11i v3 Update 4. Defect fixes and packaging changes involving run time checks and dependencies are also being introduced.

Impact

You will be able to update your OE level on the clone while your original system remains up and running. Once the update on the clone is done, you can boot the clone and keep your original image as backup.

Compatibility

There are no known compatibility issues.

Performance

There are no known performance issues.

Documentation

The `drd-runcmd` manpage has been modified to contain the new update information. You can access more information about Dynamic Root Disk at <http://docs.hp.com/en/DRD>.

Obsolescence

Not applicable.

Enterprise Cluster Master Toolkit

The Enterprise Cluster Master Toolkit is a set of templates and scripts that allows configuration of Serviceguard packages for internet servers as well as for third-party database management systems.

Summary of Change

The following describes new and changed features for the Enterprise Cluster Master Toolkit Version B.05.00 on HP-UX 11.31:

- Support for Modular Packages
- Support for Oracle 11g R1
- Support for Oracle 10g R2 ASM on Itanium servers
- Support for Oracle 11g R1
- Support for CVM/CFS 5.0
- Support for HP Apache, HP CIFS and Oracle 9i, 10g and 11g with CVM/CFS 5.0

The ECMT release notes have been updated to reflect these updates.

Impact

See the preceding “Summary of Change.”

Compatibility

There are no known compatibility issues.

Performance

There are no known performance issues.

Documentation

For additional information, see the *Enterprise Cluster Master Toolkit Version B.04.01 Release Notes* at [http://docs/hp/com/hpux/ha](http://docs.hp.com/hpux/ha)

Obsolescence

Not applicable.

Event Monitoring Service

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

Summary of Change

This release of EMS includes defect fixes. For further information, see the *Event Monitoring Service Release Notes*.

Impact

This release of EMS has no known customer impact.

Compatibility

There is no known compatibility issue.

Performance

There is no known performance issue.

Documentation

Event Monitoring Service Release Notes and *High Availability Monitors Release Notes* can be found on the Instant Information DVD and at <http://www.docs.hp.com/en/ha>.

Using *Event Monitoring Service* and *Using High Availability Monitors* user manuals are also available at <http://www.docs.hp.com/en/ha>.

Obsolescence

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

Feature Enablement Patch Bundle (FEATURE11i)

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

Summary of Change

For the March 2009 release, the FEATURE11i bundle is updated for HP-UX 11i v3 with patches that enhance or provide new core features (including performance improvements) and enable support for improved dump time and dump analysis tools, file system enhancements including MemFS, performance improvements for multithreaded applications, power minimization and management enhancements, Internationalization improvements, and many other enhancements.

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

No compatibility issues are introduced with the patches in the FEATURE11i bundle.

Performance

The patches include recommended and optional performance improvements.

Documentation

The “bundle readme” document can be found on the OE media under the /DOCS/PATCH directory, or on the IT Resource Center website: <http://itrc.hp.com>.

For further information, refer to <http://itrc.hp.com>. Select link for **More maintenance and support options**. Then, select link for **standard patch bundles**.

Also refer to the latest editions of the following documents, available at <http://www.docs.hp.com/hpux/os/11iV3>:

- *HP-UX 11i v3 Installation and Update Guide* (under **Installing and Updating**)
- *Read Before Installing or Updating to HP-UX 11i v3* (under **Installing and Updating**)
- *Patch Management User Guide for HP-UX 11.x Systems*
- *HP-UX 11i v3 Release Notes*

Obsolescence

Not applicable.

FIRSTBOOT

FirstBoot provides a set of commands to configure system network.

Summary of Change

FirstBoot has been updated to support Dynamic Root Disk (DRD), which is an HP-UX system administration toolset used to clone an HP-UX system image to an inactive disk for software maintenance and recovery. For more information about DRD, see the DRD website at <http://docs.hp.com/en/DRD/>.

Impact

Firstboot will support non-interactive way of updating system configuration files. For more info, please look into `sysinfo manpage`

Compatibility

There are no known compatibility issues.

Performance

There are no known performance issues.

Documentation

For further information about DRD, see the DRD website at <http://docs.hp.com/en/DRD/>, which includes an overview, white papers, Administrator's Guide, FAQ, and more.

Obsolescence

Not applicable.

High Availability Monitors

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

Summary of Change

This release of HA Monitors includes defect fixes. For further information, see the *High Availability Monitors Release Notes* .

Impact

This release of HA Monitors has no known customer impact.

Compatibility

There is no known compatibility issue.

Performance

There is no known performance issue.

Documentation

The following documents are available on the Instant Information DVD and on the web at <http://docs.hp.com>:

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

Obsolescence

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

HP Partitioning and Virtual Server Environment

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

The HP-UX Operating Environments (OEs) include WBEM providers and agent software that enable your systems to operate in the VSE. The VSE Management Software is now included in the Virtual Server and Data Center OEs. For details about what is included with this software, see <http://hp.com/go/vse>.

Accelerated Virtual I/O (AVIO)

The Integrity VM V4.1 release supports Accelerated Virtual I/O (AVIO) device drivers that significantly improve Integrity VM I/O performance.

The Accelerated Virtual I/O solution is composed of 4 products: GuestAvioLan, HostAvioLan, GuestAVIOStor, and HostAVIOStor. The March 2009 version of these products is B.11.31.903 and is supported on Integrity VM V4.0 and V4.1

The configuration process for the AVIO devices is basically the same as the existing VIO devices. The only difference is the device name used in the `hpvmcreate/hpvmmodify` commands. The names of the AVIO devices are `aviolan` (or `avio_lan`) for AVIO LAN devices and `avio_stor_disk/avio_stor_dvd` for disk, Logical Volumes and File backing stores.

Integrity VM V4.1 supports the HP-UX 11iv3 operating system as a VM host, and is available in the VSE-OE and DC-OE.

All Integrity Platforms are supported as of March 2009.

Summary of Change

The following are changes for the AVIO LAN:

- Support for Integrity VM Online Guest Migration on Integrity VM V4.1
- Support for AVIO guest drivers on Windows guests

The following are changes for the AVIO Storage:

- Support for Integrity VM Online Guest Migration on Integrity VM V4.1
- DLKM support for the HP-UX 11i v3 guest AVIO storage driver (GuestAVIOStor).

Impact

The AVIO LAN and Storage products provide significant performance improvements over the existing VIO products and support Integrity VM Online Guest Migration with Integrity VM V4.1.

Compatibility

The AVIO products can coexist with the existing VIO products. Use `aviolan` (or `avio_lan`) and `avio_stor_disk/avio_stor_dvd` to configure AVIO lan and AVIO storage devices for guests.

Performance

The Integrity VM AVIO devices provide significant performance improvements (up to 60% decrease in Service Demand and up to 2X increase in throughput) over the existing Virtual I/O (VIO) devices.

Documentation

AVIO specific information is included in the following areas. (The documents are available at <http://docs.hp.com/en/vse.html#HP%20Integrity%20Virtual%20Machines>)

- Manpages (*hpvmnet*, *hpvmcreate*, *hpvmmodify*, *hpvmresources*, *hpvmstatus*, and *hpvmmigrate*)
- Release Notes (*HP Integrity Virtual Machines Version 4.1 Release Notes*)
- Users Guide (*HP Integrity Virtual Machines Version 4.1 Installation, Configuration, and Administration*)
- White Paper - “HP Integrity VM Accelerated Virtual I/O Overview”

Obsolescence

Not applicable.

HP Application Discovery (AppDiscAgent)

HP Application Discovery, version A.04.01.00.xx, provides system administrators and operators with a convenient graphical user interface for browsing an inventory of applications and processes running within a computing network. Screens show the data by host and by application, and you can monitor resource usage at the level of individual processes within an application. In addition, Application Discovery provides automatic detection of several types of application events, and it provides a template editor so that you can expand the scope of discovery to include third-party and custom applications. Application Discovery is integrated with VSE Virtualization Manager, gWLM, and Capacity Advisor to allow VSE workloads to be defined based on discovered applications.

Summary of Change

Version A.04.01.00.xx of HP Application Discovery is integrated into the Virtual Server Environment, which is available from HP Software Depot: <http://software.hp.com/>. The Application Discovery agent (AppDiscAgent) is available with the software and here on the OE media.

AppDiscAgent A.04.01.00.xx

Agent configuration has been simplified, and defect fixes have been incorporated into this release. For more information, see the *VSE Management Software Version 4.1 Release Notes* available at <http://docs.hp.com/en/vse.html>.

The Application Discovery agent is default-installed on the OE media, and is also available from the AR media.

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

Impact

You will obtain more reliable behavior and data from Application Discovery agent. You no longer need to configure the agent on installation.

Compatibility

Using AppDiscAgent A.04.01.00.xx with Application Discovery Server 4.0 is supported. However, manual certificate exchange is required to secure connection between the new agent and the 4.0 server. See the *HP Application Discovery Version 4.1 User's Guide* for information on certificate exchange in this situation.

Using AppDiscAgent A.04.01.00.xx with 3.x or older versions of Application Discovery server is not supported.

AppDiscAgent A.04.01.00.xx requires the presence of Web-Based Enterprise Management (WBEM) services, Secure Shell (SSH), and OpenSSL for correct operation and secure data transmission. Consult the *VSE Management Software Installation and Update Guide Version 4.1* for details (online at <http://docs.hp.com/en/vse.html>).

Performance

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

Documentation

For additional information, see the following:

- Access the online help through the context-sensitive help button [?] in the Application Discovery user interface. A subset of this content is available in the *HP Application Discovery Version 4.1 User's Guide*, which is available online at <http://docs.hp.com/en/vse.html>.
- The following man pages are included for installation with the product:
 - *agent_config*(1M) for controlling Application Discovery certificates from the managed node.
 - *amgr_remote_config*(1M) for configuring Application Discovery certificates from the CMS.
 - *amgrd*(1M) for controlling or modifying the operation of Application Discovery agent.
- English and Japanese versions of the manpages and other documentation are included at this time.

Obsolescence

Not applicable.

HP Integrity Virtual Machines (Integrity VM)

HP Integrity Virtual Machines (HPVM) is a soft partitioning and virtualization technology that provides operating system isolation, with sub-CPU allocation granularity and shared I/O. HP Integrity Virtual Machines, also known as Integrity VM, can be installed on an Integrity server or hardware partition (nPartition) running HP-UX. The Integrity VM environment consists of two types of components: the VM Host and virtual machines (also called guests).

Integrity VM V4.1 supports the HP-UX 11i v3 operating system as a VM Host.

Integrity VM V4.1 is also available in the VSE-OE and DC-OE.

Summary of Change

Several new features have been included in V4.1, including:

- Support for Online VM Migration (a separate product [T8718AC] that you can order for a fee and obtain from the AR media).
- Added support for guests running:
 - HP-UX 11i v3 (March 2009)
 - SUSE Linux Enterprise Server (SLES) for HP Integrity servers SLES 10 Update 2
- SSH 3rd-party alternative for secure communications.

For a complete list of features in V4.1, see the *HP Integrity Virtual Machines V4.1 Installation, Configuration, and Administration* manual.

In addition, the bundle tag for Integrity VM V4.1 has changed from T2767BC to T2767CC.

Impact

You will be able to migrate a virtual machine from one VM Host to another VM Host without service interruption.

Compatibility



CAUTION: HP-UX Virtual Partitions is not compatible with HP Integrity Virtual Machines. The vPars and Virtual Machines products cannot be installed on the same nPartition or the same virtual partition.

HP Integrity Virtual Machines (HPVM or Integrity VM) cannot be installed on a system that has HP-UX Virtual Partitions (vPars) software installed. There is a check during Virtual Machines installation preventing it.

Performance

There are no known performance issues.

Documentation

The *HPVM(5)* manpage provides a list of all the manpages for Integrity VM. The following manuals, as well as white papers, are available from: <http://docs.hp.com/en/vse.html#HP%20Integrity%20Virtual%20Machines>

- *HP Integrity Virtual Machines V4.1 Installation, Configuration, and Administration*
- *HP Integrity Virtual Machines V4.1 Release Notes*

Obsolescence

Not applicable.

HP Integrity VM Guest Support Libraries (VMGuestLib)

VMGuestLib is a subset of the HP Integrity Virtual Machines API Library used by WBEM Provider. Supported by HP Itanium®-based servers that support Integrity Virtual Machines.

Summary of Change

Upgrade to Version 4.1 includes support for the new features of HP Integrity Virtual Machines V4.1. Integrity Virtual Machines V4.1 supports the HP-UX 11i v3 operating system as a VM Host.

Impact

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

Compatibility

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

Performance

There are no known performance issues.

Documentation

The following manuals, as well as white papers, are available from <http://docs.hp.com/en/vse.html#HP%20Integrity%20Virtual%20Machines>.

- *HP Integrity Virtual Machines V4.1 Installation, Configuration, and Administration*
- *HP Integrity Virtual Machines V4.1 Release Notes*

Obsolescence

Not applicable.

HP Integrity Virtual Machines (VMGuestSW)

The `VMGuestSW` is a bundle that contains software to be loaded on Integrity VM virtual machines (Linux RedHat and SLES10, Microsoft Windows, and HP-UX 11i v2 and 11i v3) along with README files describing how to install the software on the virtual machines. Included with the Integrity VM product. Supported by HP Itanium®-based servers that support Integrity Virtual Machines.

Summary of Change

This is a repackaging of the software on the Integrity VM virtual machines that was contained in the T2767BC bundle to the `VMGuestSW` bundle. Delivered as recommended software on the VSE-OE and DC-OE.

Impact

There is no impact.

Compatibility

There are no known compatibility issues.

Performance

There are no known performance issues.

Documentation

The following manuals, as well as white papers, are available from <http://docs.hp.com/en/vse.html#HP%20Integrity%20Virtual%20Machines>.

- *HP Integrity Virtual Machines V4.1 Installation, Configuration, and Administration*
- *HP Integrity Virtual Machines V4.1 Release Notes*

The `hpvm(5)` manpage lists all the manpages provided with the product.

Obsolescence

Not applicable.

HP Integrity Virtual Machines (VMKernelSW)

The `VMKernelSW` bundle is the Integrity VM kernel software that boots the system. The bundle is supported by HP Itanium®-based servers that support Integrity Virtual Machines.

Summary of Change

`VMKernelSW` has been updated in support of the Integrity VM V4.1. (For more information about Integrity VM V4.1, see “HP Integrity Virtual Machines (Integrity VM)” (page 120).)

Impact

There is no impact.

Compatibility

There are no known compatibility issues.

Performance

There are no known performance issues.

Documentation

The following manuals, as well as white papers, are available from <http://docs.hp.com/en/vse.html#HP%20Integrity%20Virtual%20Machines>.

- *HP Integrity Virtual Machines V4.1 Installation, Configuration, and Administration*
- *HP Integrity Virtual Machines V4.1 Release Notes*

The `hpvm(5)` manpage lists all the manpages provided with the product.

Obsolescence

Not applicable.

HP Integrity Virtual Machines Manager

HP Integrity Virtual Machines Manager v4.0 (A.04.00.00) is the GUI that you can use from your browser to manage HP Integrity Virtual Machines (Integrity VM) resources. You can use VM Manager to create, monitor, and evaluate Integrity VM virtual machines, and to monitor and evaluate data and resources at the level of the VM Host.



NOTE: This version of VM Manager is compatible with HP Integrity Virtual Machines version 4.1 but does not support the new features provided by that version of the product.

VM Manager enables you to visualize resources assigned to the VM Host or to a specific virtual machine or virtual switch. For example, VM Manager provides graphical views of virtual-to-physical network and storage devices so that you can view I/O data, including resource utilization information.

The VM Manager product (VMMGR bundle) runs under HP System Management Homepage (HP SMH). VM Manager is also available as part of the HP Virtual Server Environment (VSE) Management Software, and as such runs under HP Systems Insight Manager (HP SIM).

Summary of Change

In March 2009, VMMGR has been newly added to the VSE-OE and DC-OE as an optional product. Previously, it was available for download on the web. The version delivered in March 2009 includes support of HP Integrity Virtual Machines V4.0, including the following features:

- Support of HP-UX 11.31 agile addressing with virtual storage.
- Support for setting and displaying the maximum and minimum number of virtual CPUs for a virtual machine.
- Support for setting and displaying entitlement caps for a virtual machine.
- Support for displaying the current graceful stop timeout for a virtual machine.
- Support for browsing the file system to select an ISO image or backing store for a storage device being added to a virtual machine.
- Enhanced VM Host and VM Properties storage tabs, with a simpler default view that renders more quickly and distinguishes more clearly the associations between virtual machines and

storage devices. Optionally, you can view a more complex display of storage devices, as presented in earlier versions of VM Manager.

For more information about these and additional new features, see the *HP Integrity Virtual Machines Manager V4.0 Getting Started Guide* at the following location:

<http://docs.hp.com/en/netsys.html#HP%20Integrity%20Virtual%20Machines%20Manager>

Impact

The product enables managers to view and manipulate Integrity VM resources on VM Hosts running HP-UX 11.31. VM Manager supports HP Integrity Virtual Machines V4.0, including support of HP-UX 11.31 agile storage device addressing and other features.

Compatibility

There are no known compatibility issues.

Performance

There are no known performance issues.

Documentation

The VM Manager documentation includes the following two documents:

- *HP Integrity Virtual Machines Manager Getting Started Guide*
- *HP Integrity Virtual Machines Manager Release Notes*

They are available from <http://docs.hp.com/en/netsys.html#HP%20Integrity%20Virtual%20Machines%20Manager>

VM Manager also provides a set of HTML online help files. The online help is accessed through context-sensitive help links in VM Manager.

Obsolescence

Not applicable.

HP Integrity Virtual Machines Provider (VM Provider)

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

Summary of Change

Upgrade to V4.1 supports the new features of HP Integrity Virtual Machines V4.1, including support for Online VM Migration.

Impact

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

Compatibility

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

Performance

There are no known performance issues.

Documentation

The following manuals, as well as white papers, are available from: <http://docs.hp.com/en/vse.html#HP%20Integrity%20Virtual%20Machines>

- *HP Integrity Virtual Machines V4.1 Installation, Configuration, and Administration*
- *HP Integrity Virtual Machines V4.1 Release Notes*

Obsolescence

Not applicable.

HP Process Resource Manager

HP Process Resource Manager (HP PRM; bundle B3835DA) C.03.05 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.

PRMKernelSW contains only the PRM kernel files, PRM-Sw-Krn. The PRMLibraries product contains the PRM API.

Summary of Change

In the March 2009 release, HP PRM C.03.05 provides the following new feature:

`prmconfig` now has a `-M REALUIDOFF / REALUIDON` option that allows the user to specify that PRM should use the effective user ID (`READUIDOFF`) or the real user ID (`REALUIDON`) when placing processes based on user records. This option can only be used in the reset state.

The version numbers of the `PRMLibraries` and `PRMKernelSW` bundles have changed to stay in-sync with the B3835DA bundle.

`PRMSIMTools` has been updated to support the new features of HP PRM.

Impact

You can now have PRM use the real user ID for placing processes based on user records.

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

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

<http://www.hp.com/go/prm> "Information library" provides white papers

The following documents are available at <http://docs.hp.com/hpux/ha/index.html#Process%20Resource%20Manager>:

- *HP Process Resource Manager User's Guide*
- *HP PRM Version C.03.04 Release Notes*

Obsolescence

Not applicable.

HP Virtual Server Environment (VSE)

HP Virtual Server Environment (VSE) Management Software Version 4.1 (A.04.01.00).

HP VSE Management Software integrates with HP Systems Insight Manager to provide intelligent control of your virtualized environment from one location. HP VSE tool components assist in planning and automating system and application management tasks and allow you to optimize server utilization in real time by creating virtual servers that can automatically grow and shrink based on business priorities and service-level objectives. You can also consolidate multiple applications on a single server and manage clusters as one entity without compromising performance.

This product includes many of the same components that are included with HP Insight Dynamics - VSE for HP ProLiant systems running Microsoft Windows. For a Windows CMS, the HP Insight Dynamics – VSE Suite is available from:

<http://h20392.www2.hp.com/portal/swdepot/displayProductInfo.do?productNumber=HPICM>

Summary of Change

The VSE Management Software (VSEMgr) components are delivered as Optional products in the operating environments VSE-OE and DC-OE.

The following VSE Management Software components were added or updated for this release:

- **HP Virtualization Manager** visualization has greater scalability and performance. Visualization of x86 ProLiant Linux nodes has also been added. A number of new UI features have been added, including a Focus icon, which allows you to focus on a single compartment and filter out other compartments, the Onboard Administrator icon, which allows one-click access to the Onboard Administrator for an enclosure, an iLO console for server blades, and a VMM console for ProLiant virtual machines. New tools are also available from the Insight Software suite on a Windows Central Management Server (CMS), including the Insight Orchestration icon, which allows you to deploy environments by using templates and the Insight Recovery icon, which allows you to setup and administer disaster recovery sites.
- **Logical Server Management** has been enhanced to provide expanded technology support and ease-of-use features. You can now create and manage logical servers on HP Integrity server blades (running HP-UX, Linux, and Windows), in addition to HP ProLiant servers (running Linux and Windows). You can create logical servers on Hyper-V hypervisors in addition to ESX hypervisors, manage recovery for logical servers using HP Insight Recovery, and provide life cycle services for groups of physical or virtual servers using Insight Orchestration. Logical Server Management also provides read-only support in Virtual Connect blade logical servers for multiple networks. Optionally, it lets you validate your Virtual Connect blade logical server storage configuration by performing on-demand checking of Enterprise Virtual Array (EVA) and Modular Smart Array (MSA) storage. Logical Server Management now modifies storage definitions with pre-presented LUNs and provides multiple storage pools to logical servers. In addition, the modify logical servers feature, job status feature, and LSMUTIL Database Utility have been enhanced and several features have been made easier to use, such as importing logical servers and powering a logical server on or off.
- **HP Integrity Virtual Machines Manager V4.0** supports Integrity VM V4.0 and enables you to view and manipulate Integrity VM resources on VM Hosts running HP-UX 11.31. This version of VM Manager includes support for HP-UX 11i v3 agile storage device addressing, allowing you to display VM Host and virtual machine storage devices by their agile, multipath device special files (DSF). Some of the additional HP Integrity Virtual Machines Manager V4.0 features include support for setting and displaying the maximum and minimum number of virtual CPUs for a virtual machine, setting and displaying entitlement caps for a virtual machine, and for displaying the current graceful stop timeout for a virtual machine. This version of VM Manager is compatible with HP Integrity Virtual Machines version 4.1 but does not support the new features provided by that version of the product.

- **HP Application Discovery** inventories applications that are running and/or installed on servers in a network, and allows you to centrally monitor application activity. In combination with HP Virtualization Manager, Application Discovery allows you to group running processes into applications that can be added to a workload for more comprehensive resource management. This release provides simplified user authorization, agent configuration without certificate exchange, and numerous defect fixes.
- **HP Capacity Advisor** provides capacity analysis and planning software that allows you to anticipate changes needed to optimize workloads across your virtual server environment for the best utilization of server resources. In this release, Capacity Advisor provides an agentless data collection alternative for Microsoft Windows servers; a hypervisor-specific utilization overhead calculation when automating server consolidation planning; usability improvements in menu organization and labeling, **Edit Scenario** controls and meters, and the Profile Viewer; as well as improved performance and accuracy in Smart Solver solutions and Capacity Advisor report results.
- **HP Partition Manager** (product number B.31.02.04.02) allows you to configure and manage nPartitions on HP server systems and perform complex configuration tasks without having to remember commands and parameters. This release has a defect fix.
- **Virtual Server Environment Configuration Assistant** (VseAssist) helps you configure HP VSE components and troubleshoot installation problems. In this release, VseAssist has been extended with additional checks supporting new features of VSE Management Software version 4.1, including checks for required version of VMware ESX hosts and Windows Service Pack 2. This utility is included with HP Virtual Server Environment Management for Integrity systems and HP Insight Dynamics - VSE for HP ProLiant systems.
- **HP Process Resource Manager** (PRM) (product number B3835DA) controls the amount of resources that processes used during peak system load. This release updates the following PRM products: PRMLibraries, PRMKernelSW, and PRMSIMTools.

VSE Management Software can now use a remote Oracle version 10g database server for its internal data management. For information about configuring the software for use with Oracle 10g, see the *HP VSE Management Software Version 4.1 Installation and Update Guide for HP-UX* (<http://docs.hp.com/en/vse.html>).

Prior to installing the VSEmgmt package, please check the *HP Insight Dynamics - VSE and HP VSE Management Software Version 4.1 Support Matrix* and the *HP VSE Management Software Version 4.1 Release Notes for HP-UX* for system requirements and late documentation updates. For installation, update, and postinstallation configuration information, see the *HP VSE Management Software Version 4.1 Installation and Update Guide for HP-UX*. For overview information about the VSE Management Software and HP Insight Dynamics - VSE, see the *HP Insight Dynamics - VSE and VSE Management Software Version 4.1 Getting Started Guide*. These documents are included on the Instant Information CD and are also available at the following HP website: <http://docs.hp.com/en/vse.html>.

VSE Management Software Version 4.1 now provides a centralized launch point for licensing. Instead of using multiple menu items for various products' licensing screens, licensing is accessed through the HP SIM License Manager. Select **Deploy -> License Manager...** on the HP SIM menu, select the appropriate license type, and then click the **Manage Licenses...** button.

After installation of the VSE Management Software on the CMS, a 90-day trial license for the HP VSE Suite is automatically applied to all managed HP Integrity or HP 9000 servers that are discovered by HP SIM during this trial period. After the trial period expires, unlicensed systems will no longer appear in Virtualization Manager.

The following VSE Management Software licenses (LTUs) are included as “recommended” (default-installed) with the HP-UX VSE and DC Operating Environments (OEs):

- HP VSE Suite LTU (T2786AC)
- HP Virtualization Manager LTU (T2782AC)

- HP Global Workload Manager LTU (T2762AA)
- HP Capacity Advisor LTU (T2784AC)

These LTUs are installed directly on HP-UX managed systems that are running the HP-UX VSE-OE or DC-OE. Use the **Scan for HP-UX Licenses** task in order to get the license information from the managed systems into the HP SIM License Manager database on the CMS. This task is described in the *HP Insight Dynamics VSE and VSE Management Software Version 4.1 Getting Started Guide* and also in the online help. LTUs for VSE Management Software versions earlier than 4.x can also be scanned from HP-UX managed systems in the same manner.

LTUs for managed systems running Linux for HP Integrity and Microsoft Windows for HP Integrity are installed as keys on the CMS.

If you are adding new managed systems that do not have one of the LTUs listed above installed, you must purchase different license keys that can be entered into the CMS. These keys appear as five groups of five characters. They enable as many licenses as the number of cores specified with your purchase. These license keys are installed on the CMS using the HP SIM License Manager.

For more detailed information about VSE Management Software licensing, see the *HP Insight Dynamics VSE and VSE Management Software Version 4.1 Getting Started Guide*. This document is included on the Instant Information CD and is also available at the following HP website:

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

Impact

You are not required to upgrade to VSE Management Software version 4.1. However, if you upgrade to V4.1, the new Virtualization Manager user interface will appear. If you choose to add new systems after the upgrade, you must follow the new licensing procedures described above.

Compatibility

The structure of the VSE Management Software version 4.1 database is incompatible with previous version; therefore migration of collected data is not reversible. If you are running a previous version of the software, see the upgrade instructions in the *VSE Management Software Version 4.1 Installation and Update Guide*.

Performance

The VSE Management Software (VSEMGmt) should be installed on a server that is reserved for use as a central management server (CMS). Running additional unrelated applications on this server can significantly affect the performance of HP Systems Insight Manager and the VSE Management Software.

Documentation

For detailed information about hardware and software requirements and compatibility constraints, see the *HP Insight Dynamics – VSE and HP VSE Management Software Version 4.1 Support Matrix* (<http://www.hp.com/go/insightdynamics>).

The latest versions of manuals and white papers for HP Insight Dynamics – VSE, the VSE Management Software, and related products are available on the HP Web. Click the **Product Documentation** link on the following HP websites:

- HP Virtual Server Environment (<http://hp.com/go/vse>)
- HP Insight Dynamics – VSE (<http://www.hp.com/go/insightdynamics>)

Manuals for current and older versions of the VSE Management Software can be found at <http://docs.hp.com/en/vse.html>.

This release also includes Japanese localization of VSE software and VSE Management documentation and online help translations.

Obsolescence

Not applicable.

HP-UX nPartition Configuration Commands

The HP-UX nPartition Configuration Commands is a set of system administration commands to create/modify/remove partitions, control power to cells and I/O chassis, flash/turn off attention LEDs for cells, cabinets and I/O chassis, and display information about a hardware partitionable complex and recommended nPartition configuration .

The command line interface for nPartition configuration consists of the following commands:

- *cplxmodify*(1M)
- *fruled*(1)
- *frupower*(1M)
- *parconfig*(1M)
- *parcreate*(1M)
- *parmodify*(1M)
- *parremove*(1M)
- *parstatus*(1)
- *parunlock*(1M)
- *parolrad*(1M)

Summary of Change

A new command *parconfig*(1M) is included in this release.

The *parconfig* command is an advisory command. The *parconfig* command runs a set of the Locality-Optimized Resource Alignment (LORA) rules and provides recommended configuration of the nPartition that is LORA compliant. (LORA will be released in the future.) For more information about LORA, see “Locality-Optimized Resource Alignment (LORA)” (page 202).

Impact

You now have a new command that provides information about LORA-compliant nPartition configurations.

Compatibility

There is no known compatibility issue.

Performance

The nPartition configuration commands are not performance sensitive. Overall response time depends on WBEM stack elements and network bandwidth.

Documentation

For additional information, see:

- The following manpages:
 - *cplxmodify*(1M)
 - *fruled*(1)
 - *frupower*(1M)
 - *parconfig*(1M)
 - *parcreate*(1M)
 - *parmodify*(1M)
 - *parremove*(1M)

- *parstatus*(1)
- *parunlock*(1M)
- *parolrad*(1M)
- *nPartition Administrator's Guide* available at the HP Technical Documentation website: <http://www.docs.hp.com>
- “Locality-Optimized Resource Alignment (LORA)” (page 202)

Obsolescence

Not applicable.

HP-UX Virtual Partitions

HP-UX Virtual Partitions (vPars) A.05.05 enables multiple instances of the HP-UX 11i version 3 Operating Environment (OE) to run simultaneously on one server or within one Partition, with each OE instance hosting its own set of applications in a isolated environment.

vPars A.05.05 also supports a mixed HP-UX 11i v1/v2/v3 vPars environment.

Summary of Change

vPars A.05.05 includes defect fixes. In addition, the bundle tag has changed from T1335CC to T1335DC.

Impact

See the preceding “Summary of Change.”

Compatibility



CAUTION: HP-UX Virtual Partitions is not compatible with HP Integrity Virtual Machines. The vPars and Virtual Machines products cannot be installed on the same nPartition or the same virtual partition.

HP Integrity Virtual Machines (HPVM) cannot be installed on a system that has HP-UX Virtual Partitions (vPars) software installed. There is a check during Virtual Machines installation preventing it.

Performance

There are no known performance issues.

Documentation

For additional information, see the following:

- Software Depot Website: <http://h20293.www2.hp.com/portal/swdepot/displayProductInfo.do?productNumber=T1335DCE>
- Documents: <http://docs.hp.com/en/oshpux11iv3.html#Virtual%20Partitions>

Obsolescence

Not applicable.

Partition Manager

Partition Manager v3.0, version B.31.02.04.02 provides system administrators with a convenient graphical user interface for configuration and management of nPartitions on HP server systems. In addition, Partition Manager enhances the reliability and performance of HP partitioning products by providing automatic detection of several types of configuration problems. Partition Manager is supported by HP servers that support nPartitions.

Summary of Change

This release of Partition Manager includes a defect fix. The *Partition Manager Release Notes*, which contains defect fix-related information, is available at the following location:

<http://www.docs.hp.com/en/netsys.html#Partition%20Manager>

Impact

There is no impact.

Compatibility

There are no known compatibility issues.

Performance

There are no known performance issues.

Documentation

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

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

Obsolescence

Not applicable.

Utilization Provider

The Utilization Provider version A.01.08.01.02 is a lightweight daemon (`utild`) that records system-utilization data on a 5-minute interval. System-utilization data includes CPU, memory, disk, and network. This product also includes a WBEM provider for access to the utilization data.

Summary of Change

The Utilization Provider for HP-UX 11i v3 has been updated to version A.01.08.01.02 to support VSE Management Software and HP Insight Dynamics - VSE version 4.1. This version of the Utilization Provider supports dynamic nPartition systems and is now available for both 32-bit and 64-bit HP ProLiant Linux systems.

Impact

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

HP Insight Dynamics - VSE and the Virtual Server Environment (VSE) Management Software, running on an HP Systems Insight Manager Central Management Server, requires the Utilization Provider to be running on all managed systems. If the Utilization Provider is removed, the system cannot be managed by HP Virtualization Manager, Capacity Advisor, or Global Workload Manager.

Compatibility

This version of the Utilization Provider depends on HP WBEM Services for HP-UX version A.02.00.11 or later. Patch PHKL_33752 is required on Dual Core Intel® Itanium® processor systems being monitored with Capacity Advisor.

Performance

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

Documentation

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

`/opt/utild/mof`

For information about new features and capabilities of the VSE Management Software Version 4.1, as well as known issues and recommendations, see the *HP VSE Management Software Version 4.1 Release Notes for HP-UX*, which is available on the HP Technical Documentation website at the following location:

<http://docs.hp.com/en/T8671-90054/>

For additional information about the VSE Management Software and Utilization Provider, visit the Virtual Server Environment documentation collection at the following location:

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

Obsolescence

Not applicable.

HP Serviceguard

Serviceguard is a high availability software product for protecting mission-critical applications from a wide variety of hardware and software failures. The current version is A.11.19.

Summary of Change

HP Serviceguard A.11.19 includes the following:

- New cluster monitor provides faster failover in case of node failure
- Cross-subnet support
- Extended support for package dependencies
- Support for package weights and node capacities
- Extended support for online package reconfiguration
- Support for online changes to quorum method, device, and parameters
- New IP monitor (provides IP-level monitoring in addition to existing link-level monitoring)
- New package-maintenance capability (based on partial package startup)
- Support for up to 300 packages per cluster
- Extended support for IPv6
- Serviceguard Manager GUI supports above features, and provides improvements in cluster monitoring, cluster configuration, and ease of use, including:
 - cluster configuration wizard
 - modular package configuration wizard
 - improved cluster and package configuration validation

Impact

- Faster failover
- Improved cluster and package uptime
- More robust network monitoring
- Greater scope and flexibility in network configuration

- Greater control over package placement
- Improved ease-of-use via GUI

Compatibility

HP recommends upgrade to Serviceguard A.11.19; it will be the required base for future upgrades.

Performance

There are no known performance issues.

Documentation

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

- *High Availability: Managing Serviceguard User's Guide*
- *Serviceguard A.11.19 Release Notes*

Obsolescence

Not applicable.

HP Serviceguard NFS Toolkit

HP Serviceguard Network File Server (NFS) Toolkit (formerly MC/ServiceGuard NFS Toolkit) uses HP Serviceguard (formerly MC/ServiceGuard) to set up highly available NFS servers. An NFS server is a host that “exports” its local directories and 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 has been updated to incorporate a set of defect fixes. For more information, see the *Serviceguard NFS Toolkit Release Notes* at <http://docs.hp.com> (navigate to **High Availability**, then to **Highly Available NFS**).

Impact

Refer to the *Serviceguard NFS Toolkit Release Notes*.

Compatibility

There are no known compatibility issues.

Performance

There are no known performance issues.

Documentation

For additional information, see the following documents, available at <http://docs.hp.com> (navigate to **High Availability**, then to **Highly Available NFS**):

- *Serviceguard NFS Toolkit Administrator's Guide*
- *Serviceguard NFS Toolkit Release Notes*
- “Serviceguard NFS Toolkit Support for Cluster File System” White Papers

Obsolescence

Not applicable.

HP System Management Homepage

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

Summary of Change

HP System Management Homepage for HP-UX is updated to version A.3.0 to incorporate new features and defect fixes. The changes in this release include an improved feature-rich user interface, and capability to verify HP SMH software dependency information using the new `smhassist` command.

For more information about HP SMH changes in this release, see the *HP System Management Homepage Release Notes*, available at <http://www.docs.hp.com/en/netsys.html>.

Impact

The new features in HP SMH provide better user experience by offering custom views - icon and list, and controls to determine settings such as session timeout and login page display. Additionally, you can now determine software dependency using the new `smhassist` command.

Compatibility

There are no known compatibility issues.

Performance

There are no known performance issues.

Documentation

The following HP System Management Homepage manpages are included with product:

- *hpsmh*(1M)
- *smhstartconfig*(1M)
- *smhassist*(1M)

HP System Management Homepage Online Help is included with product.

The following documents are available at <http://www.docs.hp.com/en/netsys.html> (navigate to **System Administration**):

- *HP System Management Homepage Installation Guide*
- *HP System Management Homepage Release Notes*
- "Simplifying single-system management on HP-UX 11i – HP System Management Homepage (HP SMH)" white paper

Obsolescence

Not applicable.

HP Systems Insight Manager

HP Systems Insight Manager (HP SIM) is the foundation for HP's unified server-storage management strategy. It is a multiple operating system, hardware level management product that supports HP ProLiant, Integrity and HP 9000 servers, HP StorageWorks MSA, EVA, XP arrays, and third-party arrays. Through a single management view of Microsoft® Windows®, HP-UX 11iv1, HP-UX 11iv2, HP-UX 11iv3, and Red Hat, SuSE Linux, HP SIM provides the basic management features of system discovery and identification, single event view, inventory data

collection, and reporting. The core HP SIM software uses Web Based Enterprise management (WBEM) to deliver the essential capabilities required to manage all HP server platforms.

HP SIM can be extended to provide system management with plug-ins for HP clients, storage, power, and printer products. Plug-in applications for workload management, capacity management, virtual machine management, and partition management through the HP Integrity Essentials enable you to pick the value-added software required to deliver complete lifecycle management for your hardware assets.

Summary of Change

HP Systems Insight Manager 5.3 delivers:

- Support for display of IPv6 addresses
- Improved Linux identification
- Improved discovery and identification of ESX hosts
- Credentials management improvement
- Additional hypervisor support Xen host and guest identification and association.
- DTF enhancements
- Manual discovery enhancements
- License usability enhancements

Previous versions of HP Systems Insight Manager also contained and installed HP Insight Power Manager. This is no longer the case with HP Systems Insight Manager version 5.3 and later. To obtain the latest version of HP Insight Power Manager, download the software from the web at <http://www.hp.com/go/ipm>.

Impact

No impacts other than those previously listed.

Compatibility

For information about operating systems, hardware, swap space, and software that is supported for HP SIM 5.3 see the release notes located at the HP Systems Insight Manager Information Library:

<http://h18013.www1.hp.com/products/servers/management/hpsim/infolibrary.html>

Performance

There are no known performance issues.

Documentation

- All HP Systems Insight Manager documentation is available on the Web.
 - *HP Systems Insight Manager Installation and Configuration Guide for HP-UX*
 - *HP Systems Insight Manager Release Notes*
 - *HP Systems Insight Manager README*

These documents provide information about installing and getting started using HP Systems Insight Manager. These documents include an introduction to basic concepts, definitions, and functionality associated with HP Systems Insight Manager. These documents are available at <http://docs.hp.com/> or <http://www.hp.com/go/hpsim/>.

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

Obsolescence

HP Systems Insight Manager replaces ServiceControl Manager 3.0.

HP-UX Disks and File Systems (fsweb)

The Disks and File Systems (`fsweb`; bundle name `FileSystems`) is an HP System Management Homepage (HP SMH) plugin that can be used for file systems and disks system administration tasks. The plugin provides both web-based Graphical User Interface (GUI) and Text User Interface (TUI). Disks & File Systems can be started from the HP SMH and HP Systems Insight Manager (HP SIM).

The Disks & File Systems plugin supports management of logical volumes, volume groups, disks, file systems, and paging devices. The tool supports the following file systems: Cache File System (CFS), Compact Disc File System (CDFFS), Common Internet File System (CIFS), Hierarchical File System (HFS), Network File System (NFS), and Veritas File System (VxFS).

Summary of Change

The new features in this release of Disks and File Systems is mostly in the area of file systems. The new features include:

- Backup and recovery of file systems



NOTE: The PAX-ENH product must be installed for the “backup and recovery of file systems” feature to function successfully. For more information about PAX-ENH, see “PAX-ENH” (page 190).

- Capability to schedule automatic backup
- File change log for Veritas file system (VxFS) version 5.0
- File system consistency check
- Capability to resize/expand file system size

This release also includes defect fixes.

Impact

You can now perform backup and recovery tasks using a web-based interface, and can resize VxFS 5.0 without unmounting the file system. Reporting and auditing of changes to Veritas file systems is improved. With the newly available file system consistency check feature, you are better equipped to diagnose and manage corrupted file systems.

Compatibility

There are no known compatibility issues.

Performance

There are no known performance issues.

Documentation

For additional information, see the following:

- Disks and File Systems Online Help
- *fsweb*(1M), *sam*(1M), and *smh*(1M) manpages

Obsolescence

Not applicable.

HP-UX Kernel Configuration (kcweb)

The HP-UX Kernel Configuration plugin allows the user to configure an HP-UX kernel, and monitor consumption of kernel resources controlled by parameters. The Kernel Configuration tool provides web-based Graphical User Interface (GUI) and Text User Interface (TUI).

You can start the HP-UX Kernel Configuration (kcweb) plugin from the HP System Management Homepage (HP SMH) and the HP Systems Insight Manager (HP SIM). You can also use the `kcweb` command to start Kernel Configuration.

Summary of Change

This release of Kernel Configuration includes defect fixes.

Impact

This release of Kernel Configuration has no known customer impact.

Compatibility

There is no known compatibility issue.

Performance

There is no known performance issue.

Documentation

For additional information, see the following:

- Kernel Configuration Online Help
- `kcweb(1M)` manpage
- `sam(1M)` and `smh(1M)` manpages
- Also see the `kcalarm(1M)`, `kcmond(1M)`, `kconfig(5)`, `kconfig(1M)`, `kcmodule(1M)`, `kctune(1M)`, `kclog(1M)`, `kcpath(1M)`, `kcusage(1M)`, and `system(4)` manpages.

Obsolescence

Not applicable.

HP-UX Peripheral Devices Manager (pdweb)

The HP-UX Peripheral Devices Manager plugin (`pdweb`) enables system administrators to manage the OLRAD-capable PCI slots reported by the `olrad` command and peripheral devices reported by the `ioscan` command.

Using Peripheral Devices Manager, you can add/replace/delete an OLRAD-capable card online, view the devices reported by the `ioscan` command and re-install the Device Special Files where possible.

Summary of Change

This version of Peripheral Devices Manager offers additional diagnostics features for Fibre Channel (FC) adapters.

Impact

You can get a dump of the internal errors that have occurred in adapters and use it for getting the errors resolved. You are expected to send the dump (diagnostics information) to HP for further analysis. In the case of internal errors, you can view NVRAM information of the device file and use it for getting the errors resolved. For 4 Gb/s Fibre Channel cards you can now view

diagnostics information such as cable lengths, current temperature, voltage, transmit and receive power, and TX bias, from the card's optical transceiver.

Compatibility

There are no known compatibility issues.

Performance

There are no known performance issues.

Documentation

For additional information, see the following:

- Peripheral Devices Manager Online Help
- *pdweb*(1M) manpage
- *smh*(1M) and *sam*(1M) manpage

Obsolescence

Not applicable.

HP-UX Software Assistant

HP-UX Software Assistant (SWA) is a tool that consolidates and simplifies patch management and security bulletin management on HP-UX systems. SWA combines the versatility and power of the HP IT Resource Center Patch Assessment and Security Patch Check utilities, and is the HP-recommended utility to use to maintain currency with HP-published security bulletins for HP-UX software.

For information about SWA, see “HP-UX Software Assistant” (page 181).

iCAP Manager

The iCAP Manager (iCAPMgr) product provides functionality to monitor and configure Instant Capacity for a single system. The iCAPMgr version 4.1 runs under the HP System Management Homepage (HP SMH).

Summary of Change

The iCAPMgr product has been updated to provide configuration capabilities for Instant Capacity on a single system. You now have the capability to apply an Instant Capacity codeword, modify Instant Capacity properties, and change the number of active cores on the system.

Impact

The new functionality offered in iCAPMgr 4.1 will provide you with a more robust solution, enabling you to manage your Instant Capacity environment from HP SMH.

After installing the iCAPMgr bundle, run the following command to configure the iCAPMgr product for HP SMH.

```
/opt/icod/bin/icapsmhconfig -a
```

Compatibility

There are no known compatibility issues.

Performance

There are no known performance issues.

Documentation

For additional information, see the following manpage: `/opt/icomd/man/man1m.Z/icapsmhconfig.1m`

Obsolescence

Not applicable.

Ignite-UX

Ignite-UX version C.7.8 is an HP-UX administration toolset that allows you to:

- Manage the simultaneous installation of HP-UX 11i v1, v2, and v3 on multiple HP Integrity server blades and systems, and PA-RISC systems.
- Create custom installation configurations (golden images) for multiple installations on clients.
- Recover HP-UX clients both locally and remotely.
- Create recovery media.

Ignite-UX C.7.1 and later versions run on HP-UX 11i v1, v2, and v3 servers.

Summary of Change

Ignite-UX version C.7.8 includes the following:

- Improved Ignite and vPars interaction on 11i v3.
- Ability to avoid use of TFTP networking.
- Ability to use Ignite on a network that has IPV6 enabled.
- HP-UX 11i v2 recovery support for new pax format allowing large UID/GID (this was already supported on 11i v3). The pax archive format also allows larger files to be included in the archive.
- New white paper “Using Ignite-UX With Serviceguard” available at <http://www.docs.hp.com/en/IUX/infolib.html>

Impact

See the preceding “Summary of Change.”

Compatibility

There are no known compatibility issues.

Performance

There are no known performance issues.

Documentation

The Ignite-UX product website, <http://www.docs.hp.com/en/IUX/>, contains information, links to download the product, and documentation.

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

- *Ignite-UX Administration Guide*
- *Ignite-UX Quick Start Guide*
- *Ignite-UX Custom Configuration Files*
- *Ignite-UX Reference*

Also available on the Ignite-UX Information Library web page are the Ignite product release notes, Ignite-UX Frequently Asked Questions, and white papers.

Ignite-UX manpages are documented in the *Ignite-UX Reference* and are available with the Ignite-UX product in `/opt/ignite/share/man`.

Obsolescence

Not applicable.

Logical Volume Manager

Logical Volume Manager (LVM) is the HP-UX default Volume Manager. It provides flexibility in configuring and managing mass storage resources. In HP-UX 11i v3, the LVM kernel and commands are delivered as an always-installed Independent Software Unit bundled with the core HP-UX product.

Summary of Change

- Migrate Version 1.0 volume groups to either Version 2.0 or 2.1 volume groups, migrate Version 2.0 volume groups to Version 2.1 volume groups, and migrate Version 2.1 volume groups to Version 2.0 volume groups.

- **vgmodify enhancements:**

The `vgmodify` command now supports the following features:

- Online Dynamic LUN Contraction (Version 2.0 or higher volume groups): Prepare a physical volume for a LUN contraction using disk utilities, without deactivating the volume group.
- Online Reprovisioning (Version 2.0 or higher volume groups): Modify the volume group configuration parameters (staying within supported limits) without deactivating the volume group.
- Online Dynamic LUN Expansion (Version 2.0 or higher volume groups): Take advantage of the increase in disk size of a physical volume without deactivating the volume group.
- Online Reprovisioning (Version 1.0 volume groups): Modify the volume group configuration parameters (staying within supported limits) without deactivating the volume group.
- Online/Offline LUN Contraction (Version 1.0 volume groups): Prepare a physical volume for a LUN contraction using disk utilities, both while the volume group is online as well as offline.

Note: Starting September 2008 release, the `vgmodify` command supports online LUN expansion only on Version 1.0 volume groups. Reprovisioning for Version 1.0 volumes will be made online only starting March 2009 release.

- **Performance improvements in `vgscan` and `vgimport` commands**

The `vgimport` command and `vgscan` command while running for Version 2.0 or higher volume groups versions show considerable performance improvement.

Impact

When constrained with the existing limits on Version 1.0 volume groups (supported on all HP-UX 11i releases), you can use the `vgmodify` command to extend few of the volume group configuration limits. For the HP-UX 11i v3 March 2009 update, a new command, `vgversion`, enables you to take advantage of the improvements in volume group Version 2.0 and higher, and get higher limits, by providing in-place volume group migration from version 1.0 to 2.0 and higher. The `vgversion` command also supports migration of a volume group from any Version 2.x to any other Version 2.y .

The `vgmodify` command enhancements enable you to handle the physical volume size changes and modify configuration parameters of an existing LVM volume group belonging to any supported volume group version when the volume group is active (online). Physical volume size changes and modification of configuration parameters can be done on a deactivated volume group only if it is a Version 1.0 volume group.

Parallel disk read operations result in performance improvement while using `vgimport -s` command and `vgscan` command.

Compatibility

To migrate a Version 1.0 volume group to Version 2.0 or 2.1, you do not need to create a new volume group and copy the data. The new command, `vgversion`, enables migration between any two supported volume group versions. Note: You cannot migrate back to Version 1.0.

Performance

There are no known performance issues.

Documentation

For details of these enhancements and defect fixes, see the *HP-UX Logical Volume Manager and MirrorDisk/UX Release Notes*, at <http://docs.hp.com/en/oshpux11iv3.html#LVM%20Volume%20Manager>

For more information about LVM, see *HP-UX System Administration: Logical Volume Management*, as well as LVM white papers available at the same website.

In addition, there are over thirty existing manpages for LVM and its commands. `lvm(7)` provides an overview and list of commands. New or significantly changed manpages include `vgversion(1M)`, `vgmodify(1M)`, `vgcfgrestore(1M)`.

Obsolescence

No obsolescence changes since the HP-UX 11iv3 February 2007 release.

Network Interfaces Configuration and Network Services Configuration

Network Interfaces Configuration and Network Services Configuration (bundle name: `NetworkConf`) is used to configure network interfaces and network services on an HP-UX system. It has a web-based graphical user interface (GUI) and a terminal user interface (TUI). The two HP SMH plug-ins that are available on installing this product are as follows:

- Network Interfaces Configuration tool for configuring APA, NIC, RDMA, VLAN, Tunnel, and X.25 interfaces
- Network Services Configuration tool for configuring various network services

Summary of Change

A new module - Neighbor Discovery Cache - is now available for configuring and managing IPV6 neighbor discovery cache. This is available under **Network Services Configuration** in HP SMH.

Impact

You can now use the HP SMH web interface for managing IPv6 neighbor discovery cache.

Compatibility

There are no known compatibility issues.

Performance

There are no known performance issues.

Documentation

For additional information, see the following:

- Product Online Help that is integrated with the tool
- *ncweb*(1M), *smh*(1M) and *sam*(1M) manpages

Obsolescence

Not applicable.

Obsolescence Bundle

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



NOTE: Other products not listed here may also be removed upon update to HP-UX 11i v3.

- Technical System Configuration
- Java3D for Java 1.4
- DCE Core Admin
- DCE Security Server
- DCE CDS Server
- IPQoS



NOTE: HP-UX IPQoS for earlier HP-UX releases (HP-UX 11i v1 and v2) is incompatible with HP-UX 11i v3.

- ISCSI-SWD Product
- ATM
- PCI TokenRing Driver
- PCI FDDI Driver
- Netscape browsers
- HP-UX Visualize Conference Run Time Environment
- Frame Relay Link Software
- I2O RAID Product
- HPPB 100BaseT Driver
- EISA 100BaseT Driver
- EISA TokenRing Driver
- HPPB TokenRing Driver
- EISA FDDI Driver
- HPPB FDDI Driver
- HSC FDDI Driver
- HP-PB ATM Driver
- ATM Driver
- SCR
- DMI
- ObAM

- Java 1.3 JDK/JRE/JPI/Java3D
- Java 1.2 JDK/JRE/JPI/Java3D

Online Diagnostics

Online Diagnostics includes the following:

EMS Hardware Monitors - The EMS Hardware Monitors enable you to monitor the operation of a wide variety of hardware products and be alerted of failure or any unusual activities.

STM - The Support Tools Manager (STM) provides a set of online support tools, enabling you to verify and troubleshoot system hardware, and to examine system logs.

Summary of Change

OnlineDiag has been updated to support new and future devices. For information about supported devices, see the following documents at <http://docs.hp.com/en/diag.html#2%20Online%20Diagnostics>:

- *EMS Release Notes for HP-UX 11i v3 March 2009 Release*
- *STM Release Notes for HP-UX 11i v3 March 2009 Release*

Defect fixes have been made.



NOTE: March 2009 release onwards, the SysFaultMgmt and OnlineDiag products have placed a pre-requisite on the ProviderSvcsBase product. SysFaultMgmt no longer has a pre-requisite on the OnlineDiag product.

As a part of stand-alone install, ProviderSvcsBase does not install in the following scenarios.

- If OnlineDiag September 2008 or an earlier version is installed or selected as part of installation.
- If SysFaultMgmt September 2008 or an earlier version is installed or selected as part of installation.

This implies that an install or an upgrade to SysFaultMgmt March 2009 version or later would require an upgrade of OnlineDiag March 2009 version or later and vice versa to ensure that both the products remain fully functional.

Impact

See the preceding “Summary of Change.”

Compatibility

If installed, HP-UX System Management Homepage (SysMgmtWeb) must be at least version A.3.x.x (March 2009) or later.

Performance

There are no known performance issues.

Documentation

You can access the following Online Diagnostics documents at <http://docs.hp.com/en/diag>:

- *Diagnostics Documentation Read This First*
- *Diagnostics Overview Guide*
- *Administrator's and User's Guide for OnlineDiag (EMS, STM)*
- *STM, EMS Table of Versions*
- *STM Patch Descriptions*

- *STM Release Notes*
- *EMS Release Notes*

Obsolescence



NOTE: Starting with HP-UX 11i v3 March 2009 release, OnlineDiag (including STM) will be in support mode. Moving forward, no new enhancements will be made to OnlineDiag (including STM). Only Critical / Serious defects will be analyzed.

For the most current information about OnlineDiag obsolescence, see the following document at <http://www.docs.hp.com/en/diag.html#2%20Online%20Diagnostics>:

- *EMS Release Notes for HP-UX 11i v3 March 2009 Release*
 - *STM Release Notes for HP-UX 11i v3 March 2009 Release*
-

Printer Management (web-based)

The Printer Management (web-based) plugin enables you to configure and manage printers on HP-UX systems. The plugin is available from the HP System Management Homepage (HP SMH) and provides both a web-based graphical user interface (GUI) and a text user interface (TUI).

Printer Management is an enhanced version of the Printers and Plotters functional area of the earlier System Administration Manager (SAM).

Summary of Change

This release of Printer Management includes defect fixes.

Impact

This release of Printer Management has no known customer impact.

Compatibility

There is no known compatibility issue.

Performance

There is no known performance issue.

Documentation

Help is integrated with the Printer Management software.

Obsolescence

The legacy version (X-Windows based and available through SAM) of the product is no longer supported.

PropPlus (SysMgmtPlus)

PropPlus (`SysMgmtPlus`) is an enhancement plus package to HP-UX System Management Homepage (HP SMH).

`SysMgmtPlus` enhances the property pages of HP SMH by adding additional details and introducing dynamic capability to the web page.

Summary of Change

`SysMgmtPlus` has been newly added in March 2009 as a required (always-installed) product in all OEs.

Impact

Without the installation of PropPlus (`SysMgmtPlus`), the property pages of HP SMH can only display static content; they do not change after being displayed. With PropPlus, you can now show or hide detailed information.



NOTE: If `SysMgmtPlus` is installed independently after installing HP SMH, HP SMH must be restarted. (HP SMH will restart automatically after terminating, and it will terminate automatically if no SMH connections are present for a period of time [default 30 minutes]).

- To stop HP SMH, enter the following command at the HP-UX prompt:

```
# /opt/hpsmh/sbin/hpsmh stop
```
- To start HP SMH, enter the following command at the HP-UX prompt:

```
# /opt/hpsmh/sbin/hpsmh autostart
```

Or just access SMH from the browser and it will automatically restart.

Compatibility

`SysMgmtPlus` only supports HP-UX System Management Homepage 3.0 (`SysMgmtWeb` revision A.3.x.x) or later. If installed, `SysMgmtWeb` must be at least version A.3.x.x (March 2009) or later.

Performance

There are no known performance issues.

Documentation

For more information about PropPlus (`SysMgmtPlus`), see the *PropPlus (SysMgmtPlus) Release Notes* at

`/opt/hpsmh/data/htdocs/propplus/REL-NOTES.PROPPLUS`

For more information about the HP SMH application, see the following documents, available at <http://docs.hp.com> (navigate to **Network and Systems Management**, then to **System Administration**):

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

Obsolescence

Not applicable.

ProviderSvcsBase

The product `ProviderSvcsBase` contains a new daemon called as `oserrlogd`. This new logging daemon reads error log records from the HP-UX kernel via `diag2` driver, stores them in the circular log files, which can be read by user space processes. Upon storing the error records in log files, the daemon sends EVM notification to the clients (for example, hardware indication WBEM providers and so on) which are interested in reading the error logs. The clients should subscribe to these EVM notifications to receive the error logs.

The new daemon `oserrlogd` supports following two features:

- Reads and formulates MCA log files at `/var/tombstones` directory.
- Reads errors logged via `diag2` driver's `diag_log` interface.

This product is currently supported on HP Integrity systems as well as some hardware platforms from partners based on the Intel Itanium processor family.

Summary of Change

In March 2009, `ProviderSvcsBase` is newly added as a required (always-installed) product in all OEs.



NOTE: March 2009 release onwards, the `SysFaultMgmt` and `OnlineDiag` products have placed a pre-requisite on the `ProviderSvcsBase` product. `SysFaultMgmt` no longer has a pre-requisite on the `OnlineDiag` product.

As a part of stand-alone install, `ProviderSvcsBase` does not install in the following scenarios.

- If `OnlineDiag` September 2008 or an earlier version is installed or selected as part of installation.
- If `SysFaultMgmt` September 2008 or an earlier version is installed or selected as part of installation.

This implies that an install or an upgrade to `SysFaultMgmt` March 2009 version or later would require an upgrade of `OnlineDiag` March 2009 version or later and vice versa to ensure that both the products remain fully functional.

Impact

The new daemon `oserrlogd` is now available.

Compatibility

This product is supported only on Itanium-based systems and not on PA-RISC systems.

Performance

There are no known performance issues.

Documentation

Datasheet, Release Notes, and Admin Guide are available at the following location:

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

Obsolescence

Similar functionality that has been offered by `diaglogd` daemon, which is delivered as a part of the `OnlineDiag` bundle, will be obsoleted and replaced by the `oserrlogd` daemon. The `oserrlogd` daemon is delivered as part of the `ProviderSvcsBase` bundle.

Quality Pack Patch Bundles

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

Summary of Change

The Quality Pack bundles is released every 6 months for HP-UX 11i v3 (B.11.31) with a sizable increase in the number of defect fix patches included. A defect-repair patch is included in the Quality Pack only after it has successfully completed comprehensive internal testing as well as achieved 300 customer downloads.

Impact

Not applicable.

Compatibility

Not applicable.

Performance

Not applicable.

Documentation

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

Obsolescence

Not applicable.

Software Distributor (SD)

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

Summary of Change

SD has been updated to incorporate defect fixes. It is now delivered in the SysMgmtMin bundle instead of the SwMgmtMin bundle.

Impact

You can continue to reliably perform software deployment operations.

Compatibility

SD remains compatible across all supported releases.

Performance

The performance is the same as previous releases.

Documentation

For additional information, see the SD customer website: <http://docs.hp.com/en/SD>

Obsolescence

Not applicable.

Software Package Builder

Software Package Builder (SPB) provides a visual method to create and edit software packages using the HP-UX Software Distributor (SD) package format. Once software is packaged, it can easily be transferred to a distribution medium, mass produced, and installed by administrators. The SPB graphical user interface (GUI) provides a window into the software package structure, showing attributes that can be set for each package element. SPB dynamically loads packaging policies and validates software package attributes against these policies. The GUI can be used to create, validate, and edit the product specification files and to create and validate depots. The SPB command line interface (CLI) can also perform validation of software package attributes against policies and supports automated edits to the software package specification. SPB (CLI

or GUI) can also be used to detect possible installation errors of a software package on either the local host or one or more remote hosts.

Summary of Change

Software Package Builder has been updated to incorporate defect fixes.

Impact

There is no impact.

Compatibility

There are no known compatibility issues.

Performance

There are no known performance issues.

Documentation

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

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

Obsolescence

Not applicable.

System Fault Management

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

Summary of Change

Starting with the HP-UX 11i v3 March 2009 release, SFM introduces the `CIMUtil` command. Using `CIMUtil`, one can enumerate instances related to various devices and create filters, handlers, and subscriptions that SFM supports. The `CIMUtil` command is available at `/opt/sfm/bin/CIMUtil [-h|--help]`

Starting with the HP-UX 11i v3 March 2009 release, SFM does not support storage disks. However, storage disks are supported by DAS Provider (for information, see “Direct Attached Storage Provider (DASProvider)” (page 151)). Additionally, there is no impact on the functionality or the information retrieved.

Starting with the HP-UX 11i v3 March 2009 release, the IPMI Event Viewer will be delivered as part of SysFaultMgmt. In the earlier releases it was delivered as part of Online Diagnostics bundle. IPMI Event Viewer is used to display low-level system log information.



NOTE: March 2009 release onwards, the SysFaultMgmt and OnlineDiag products have placed a pre-requisite on the ProviderSvcsBase product. SysFaultMgmt no longer has a pre-requisite on the OnlineDiag product.

As a part of stand-alone install, ProviderSvcsBase does not install in the following scenarios.

- If OnlineDiag September 2008 or an earlier version is installed or selected as part of installation.
- If SysFaultMgmt September 2008 or an earlier version is installed or selected as part of installation.

This implies that an install or an upgrade to SysFaultMgmt March 2009 version or later would require an upgrade of OnlineDiag March 2009 version or later and vice versa to ensure that both the products remain fully functional.

Impact

See the preceding “Summary of Change.”

Compatibility

If installed, HP-UX System Management Homepage (SysMgmtWeb) must be at least version A.3.x.x (March 2009) or later.

Performance

There are no known performance issues.

Documentation

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

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

In addition, following are the manpages and their respective locations:

- `/opt/sfm/share/man/man1/evweb_logviewer.1`
- `/opt/sfm/share/man/man1/sfmconfig.1m`
- `/opt/sfm/share/man/man1/CIMUtil.1`

Obsolescence

NOTE: Starting with HP-UX 11i v3 March 2009 release, OnlineDiag (including STM) will be in support mode. Moving forward, no new enhancements will be made to OnlineDiag (including STM). Only Critical / Serious defects will be analyzed.

Update-UX and SW-GETTOOLS

The `update-ux` command updates the HP-UX operating system to a newer release. The SW-GETTOOLS product contains a set of tools used by `update-ux`. It is automatically installed by `update-ux` and removed on the next reboot.

Summary of Change

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

Impact

There is no impact.

Compatibility

There are no known compatibility issues.

Performance

There are no known performance issues.

Documentation

For further information, see the following:

- The *update-ux*(1M) manpage.
- The latest HP-UX 11i v3 Installation and Update Guide, available at: <http://docs.hp.com/en/oshpux11iv3.html#Installing%20and%20Updating>

Obsolescence

Not applicable.

WBEM Services and Providers

HP WBEM Services for HP-UX

Web-Based Enterprise Management (WBEM) (<http://www.dmtf.org/>) is a platform and resource independent DMTF (Distributed Management Task Force) 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 (Distributed Management Task Force) WBEM standard.

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

Summary of Change

Updated to version A.02.07.04, which is a minor update to the HP WBEM Services A.02.07 that is already released with HP-UX 11i v1, 11i v2 and 11i v3.

For more information, see the *HP WBEM Services Version A.02.07 Release Notes*, available at <http://www.docs.hp.com/en/netsys.html>.

Impact

HP WBEM Services for HP-UX allows customers to manage their HP-UX systems, providing integrated solutions that optimize a customer's infrastructure for greater operational efficiency.

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 updated version.

Performance

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

Documentation

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

Obsolescence

Not applicable.

Direct Attached Storage Provider (DASProvider)

The DAS Provider contains Indication and Instance providers which deliver information about the direct attached storage devices on a HP-UX 11.31 server.

The instance provider wraps up the information provided by the STM tools (part of Online Diag) and presents the information to the WBEM client. It also contains a disk consolidated status provider (DAS - CS Provider) which consolidates the status of the disks and presents the consolidated status of the directly attached disks.

This indication provider uses EMS events generated by Online Diag monitors and wraps them up in WBEM format. It then delivers them to the cimserver.

The purpose of this product is to diagnose the hardware using the industry standard WBEM format.

Currently, the following hardware can be diagnosed by the provider:

- DS2500 Storage Enclosure
- MSA 30, MSA 1000 and MSA 1500
- MSA 60 and MSA 70

This product requires SysMgmtPlus, version A.01.00.05.01, to be installed on HP-UX 11i v3 system.

Summary of Change

The provider is supported on HP-UX 11i v3 from this release. It is delivered as a recommended product on all OEs.

Impact

You can diagnose the disks using the industry standard WBEM format.

Compatibility

There are no known compatibility issues.

Performance

There are no known performance issues.

Documentation

The provider will support Release Notes and Datasheet that will be posted at the following location:

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

Obsolescence

Online Diag is being obsoleted. The DAS Provider will replace EMS monitors and support WEBES (WBEM support).

HP-UX WBEM Fibre Channel Provider

The Fibre Channel (FC) Provider is an HP-UX WBEM provider. It enables WBEM client applications to retrieve information about Fibre Channel HBAs on the system. This component makes available various attributes related to HBA such as port properties, HBA parameters, and others.

This product requires:

- WBEM services version number A.02.05 or later to be installed on HP-UX 11i v3 system.
- SysMgmtPlus version number A.01.00.05.01 to be installed on HP-UX 11i v3 system.

The following features are supported by the FC Provider:

- Supports Consolidated Status Provider (CSP) feature
This feature reports the overall health status of the FC-HBA subsystem in the managed node.
- Supports Indication Provider (FC-IP) feature
This feature generates indications whenever the events of interest occur in the Fibre Channel subsystems.

Summary of Change

- Version Numbering Changes:
The provider version is changed from 11.31.0803 to 11.31.0903.
- Feature Changes:
 - The HP System Management Homepage (HP SMH) web page display is enhanced to provide detailed information about the FC adapter installed on the system.
 - The `fc1p` adapter is supported by the FC provider.
- In addition to the above changes, a defect is fixed.

Impact

You can obtain detailed Fibre Channel Host Bus Adapter (HBA) properties information from the HP SMH application.

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

For more information about SMH application, see the following documents, available at <http://docs.hp.com> (navigate to **Network and Systems Management**, then to **System Administration**):

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

Obsolescence

Not applicable.

HP-UX WBEM IOTree Indication Provider

The IOTree Indication Provider (IOTree-IP) generates indications when certain events occur in the PCI I/O subsystem. This provider generates indications regarding the slot status and supports following features:

- Reports data for the subsystem.
- Supports HP-UX WBEM services to provide web access to HP-UX data for management clients.
- Used by HP Software Management clients, HP System Insight Manager (HP SIM), HP System Management Homepage (HP SMH), and others.
- Supports WBEM 2.5 services security features to control access to HP-UX data.

IOTree Consolidated Status provider is shipped along with the IOTree Indication Provider product bundle on HP-UX 11i v3. This provider obtains consolidated status of the PCI I/O subsystem. The consolidated status is displayed on the HP SMH web page under IO subsystem.

This product requires:

- WBEM services, version A.02.05, or later to be installed on the HP-UX 11i v3 system.
- SysMgmtPlus, version A.01.00, to be installed on the HP-UX 11i v3 system.

Summary of Change

The following changes are implemented in the current release:

- Product version number is changed to B.11.31.0903.
- The System Management Homepage (HP SMH) web page display is enhanced to provide detailed information about PCI I/O subsystem installed on the system.

Impact

You can obtain detailed PCI I/O subsystem information from HP SMH.

Compatibility

There are no known compatibility issues.

Performance

There are no known performance issues.

Documentation

The following documents are available for IOTreeIndication provider at <http://www.docs.hp.com/en/netsys.html#HP%20WBEM%20Providers>:

- product data sheet and release notes

Obsolescence

Not applicable.

HP-UX WBEM Kernel Providers

Web-Based Enterprise Management (WBEM) is an industry wide initiative to unify the management of system, networks, and applications across multiple and diverse vendor environments.

The HP-UX WBEM Kernel Providers bundle contain the following providers:

- kcmodule provider
- kctunables provider
- swap provider
- Boot and Crash Dump providers

The `kcmodule` command is used to manage kernel modules and subsystems. The `kcmodule` provider works in the WBEM environment and enables you to obtain kernel modules information.

The `kctune` command is used to manage kernel tunable parameters. The `kctune` provider works in the WBEM environment and enables you to obtain information related to the kernel tunable parameters.

The Swap provider works in the WBEM environment and enables you to obtain information related to the swap space parameters configured on the system.

The Boot and Crash Dump provider works in the WBEM environment and enables you to obtain information related to the system boot and crash dump subsystem parameters.

Summary of Change

The Boot provider supports Modify Instance feature. This feature enables the user to modify boot instance parameter values.

Impact

See the preceding “Summary of Change.”

Compatibility

There are no known compatibility issues.

Performance

There are no known performance issues.

Documentation

The following documents are available at <http://docs.hp.com/en/netsys.html#HP%20WBEM%20Services>:

- *HP-UX kcmodule provider datasheet*
- *HP-UX kctunable provider datasheet*

- *HP-UX WBEM Kernel Providers Release Notes*
- *HP-UX Swap provider datasheet*
- *HP-UX Boot and Crash Dump provider datasheet*

Obsolescence

Not applicable.

HP-UX WBEM Online Operations Service Provider

The Online Operations Service (OLOS) Provider, version B.01.03, is the HP-UX WBEM Services provider for online operations on partitionable systems running HP-UX 11i v3 (B.11.31).

The OLOS Provider includes support for cell online activation and cell online deactivation. This provider is delivered as the `olosProvider` product as part of the `ProviderDefault` bundle.

To disable the OLOS Provider, use the following command:

```
cimprovider -d -m HP_OLOSProviderModule
```

For details, see the `cimprovider(1)` manpage.

Summary of Change

A defect is fixed in the current release. For more details, see the *OLOS Provider Release Notes*, available at the following location:

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

Impact

There is no impact.

Compatibility

There are no known compatibility issues.

Performance

There are no known performance issues.

Documentation

The OLOS Provider Release Notes is available at the following location:

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

Manpage: `cimprovider(1)`

Obsolescence

Not applicable.

HP-UX WBEM RAIDSA Provider

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

The product contains an indication provider (RAIDSA-IP) and a consolidated status provider (RAIDSA CSP).

The product requires `SysMgmtPlus`, version A.01.00.05.01, to be installed on HP-UX 11i v3 system.

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

Summary of Change

The following changes are implemented in the current release:

- A defect is fixed.
- Supports indication provider. This provider deliver events that are generated by Smart Array HBAs to the cimserver.
- The System Management Homepage (HP SMH) web page display is enhanced to provide detailed information about Smart Array HBAs installed on the system.

Impact

You can obtain detailed Smart Array (HBA) properties information from HP SMH.

Compatibility

There are no known compatibility issues.

Performance

There are no known performance issues.

Documentation

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

The RAIDSA CSP datasheet is available at <http://docs.hp.com/en/netsys.html#HP%20WBEM%20Providers>

Obsolescence

Not applicable.

HP-UX WBEM SAS Provider

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

This product contains an Indication provider (SAS-IP) and a Consolidated Status provider (SAS-CSP).

This product requires SysMgmtPlus, version A.01.00.05.01, to be installed on HP-UX 11i v3 system.

Summary of Change

The following changes are implemented in the current release:

- A defect is fixed.
- Supports indication provider. This provider deliver events that are generated by SAS HBAs to the cimserver.
- Supports Consolidated Status provider (CSP). This feature reports the overall health status of the SAS HBAs available in the managed node.
- The System Management Homepage (HP SMH) web page display is enhanced to provide detailed information about SAS HBAs installed on the system.

Impact

You can obtain detailed SAS HBA properties information from SMH application.

Compatibility

There are no known compatibility issues.

Performance

There are no known performance issues.

Documentation

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

Obsolescence

Not applicable.

HP-UX WBEM SCSI Provider

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

This product requires:

- WBEM services, version A.02.05, or later, to be installed on HP-UX 11i v3 system.
- SysMgmtPlus, version A.01.00.05.01, to be installed on HP-UX 11i v3 system.

The SCSI Provider supports Consolidated Status Provider (CSP) feature. This feature reports the overall health status of the SCSI subsystem in the managed node.

Summary of Change

The following changes are implemented in the current release:

- A defect is fixed.
- The System Management Homepage (HP SMH) web page display is enhanced to provide detailed information about SCSI HBAs installed on the system.

Impact

You can obtain detailed SCSI HBA properties information from SMH application.

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

For more information about the HP SMH application, see the following documents, available at <http://docs.hp.com> (navigate to **Network and Systems Management**, then to **System Administration**):

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

Obsolescence

Not applicable.

HP-UX WBEMP-LAN Provider

WBEMP-LAN Provider is a CIM Provider for Ethernet-based LAN technologies on HP-UX operating system. It consists of three providers:

- LAN Instance Provider
- LAN Indication Provider
- LAN Consolidated Status Provider

The Instance Provider provides information on LAN interfaces in the system. Client applications can use the LAN Instance Provider to determine all Ethernet LAN links available on the system (registered and known to HP-UX DLPI) and collect information about them.

The WBEMP-LAN Indication Provider delivers indications for events that occur on Ethernet interfaces. Client applications can receive indications based on events generated by Ethernet interfaces.

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



NOTE: Installation of DLPI patch PHNE_37799 is recommended. Installation of this patch will allow the LAN indication provider to run without impacting the results of Critical Resource Analysis (CRA). CRA is executed before doing PCI online card replacement through SAM, `olrad`, or the PCI attention button.

Without installing the patch PHNE_37799, the exact state of the card installed on the system will not be displayed.

The patch PHNE_37799 is available on the ITRC website: <http://itrc.hp.com>.

The product requires SysMgmtPlus, version number A.01.00.05.01, to be installed on HP-UX 11i v3 system.

Summary of Change

Following changes are applicable:

- The LAN Indication provider now delivers indications in the event of Ethernet interface state change.
- The LAN instance provider will provide information about HP APAs (link aggregates).
- The HP System Management Homepage (HP SMH) web page display is enhanced to provide detailed information about Ethernet-based LAN cards installed on the system.

Impact

You can obtain detailed Ethernet-based LAN card properties information from the HP SMH application.

Compatibility

There are no known compatibility issues.

Performance

There are no known performance issues.

Documentation

For more information, see the following documents on your system:

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

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:

- “MemFS” (page 162)
- “ONCplus” (page 162)

MemFS

MemFS, version 1.0, is a memory-based filesystem that provides fast access to temporary files by storing them in main memory.

MemFS is a Software Pack product and is newly delivered in March 2009 as an optional product for all Operating Environments. For more information about Software Pack, see “Software Pack (Optional HP-UX 11i v3 Core Enhancements)” (page 42).

Summary of Change

This is a new filesystem in HP-UX 11i v3.

Impact

Applications that access files created on a MemFS filesystem will be significantly faster than disk-based filesystems as long as there is enough memory and the files do not require to be persistent.

Compatibility

There are no known compatibility issues.

Performance

Applications that access files created on a MemFS filesystem will be significantly faster than disk-based filesystems as long as there is enough memory and the files do not require to be persistent.

Documentation

For additional information, see the following documents:

- `mount_memfs` manpage
- MemFS 1.0 - A Memory-based File System on HP-UX White Paper:
<http://docs.hp.com/en/5992-5789/5992-5789.pdf>
- *Memory File System (MemFS) 1.0 for HP-UX 11i v3 Administrator's Guide*:
<http://docs.hp.com/en/5992-5788/5992-5788.pdf>

Obsolescence

Not applicable.

ONCplus

Open Network Computing (ONC) is a technology that comprises core services that enable administrators to implement distributed applications in a heterogeneous distributed computing environment. It also includes tools to administer clients and servers. ONC consists of the following components: Network File System (NFS), AutoFS, CacheFS, and Network Information Service (NIS).

Summary of Change

Prior to the HP-UX 11i v3 release, ONC was updated between Enterprise releases through HP-UX patches. As of the initial release of HP-UX 11i v3, a new product called ONCplus provides ONC defect fixes and new features. Separate patches are unnecessary. You can get new versions of ONCplus through the Operating Environments Update Releases (OEURs) or from the ONCplus website.

ONCplus Version B.11.31.06.01 provides the following changes, which include those made in version B.11.31.05:

- IPv6 support for Rcommands and Rdaemons Phase II
- ONC 2.5 functionality for the NFSv2 and NFSv3 Client
- Several defects have been fixed (see the *ONCplus B.11.31.06.01 Release Notes* for details)
- Added support to *getnameinfo(3N)* for the `ip6.arpa` domain

Impact

ONCplus provides defect fixes and new features via new product versions to provide flexibility for HP-UX 11i v3 customers. All ONCplus versions, both past and current, are also available at <http://software.hp.com>. With ONCplus B.11.31.06.01, customers will now have full IPv6 support for the RPC Commands and Daemons. ONCplus B.11.31.06.01 also delivers ONC 2.5 functionality for NFSv2 and NFSv3 Clients.

Compatibility

There are no new compatibility issues with ONCplus B.11.31.06.01 compared with the previous version of ONCplus (B.11.31.04) released in an HP-UX 11i v3 Update Release.

Performance

There are no known performance issues.

Documentation

- Manpages:
Many Japanese manpages have been updated to make them equivalent to the English manpages.
- Web Sites:
Software Depot Web Page for ONCplus
<http://h20392.www2.hp.com/portal/swdepot/displayProductInfo.do?productNumber=ONCplus>
- White papers (available at <http://docs.hp.com/en/netcom.html#NFS%20Services>):
 - *Managing NFS and KRPC Kernel Configurations in HP-UX 11i v3*
 - *Introducing Network File System Version 4 on HP-UX 11i v3*
- Documents (available at <http://docs.hp.com/en/netcom.html#NFS%20Services>):
 - *NFS Services Administrator's Guide*
 - *Network Information Service (NIS) Administrator's Guide*
 - *ONCplus B.11.31.06.01 Release Notes*

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 v3 release, including:

- “Browsers” (page 166)
- “HP CIFS Server” (page 167)
- “HP-UX Auto Port Aggregation” (page 167)
- “HP-UX Web Server Suite” (page 168)
 - “HP-UX Apache-based Web Server” (page 169)
 - “HP-UX Tomcat-based Servlet Engine” (page 169)
- “Internet Services” (page 170)
 - “HP-UX Mail Server (Sendmail)” (page 170)
 - “HP-UX Nameserver (BIND)” (page 171)
- “LDAP-UX Integration ” (page 171)
- “Red Hat Directory Server for HP-UX” (page 172)

Browsers

The Firefox 2.0.0.16 browser sets a new standard for Internet browsing by providing an easier and more personal way to use the Internet.

The Thunderbird 2.0.0.16 e-mail application provides convenient, customizable, rich-featured email access.

The open-source windowing toolkit Gnome 2.6 GTK+ libraries for HP-UX is used by the Firefox/Thunderbird browsers on both PA-RISC and Itanium. You must install the windowing toolkit before installing Firefox/Thunderbird. It is not necessary to install the GTK+ 2.6.8 depot in order to run Mozilla

Products are:

- Firefox, FirefoxSrc 2.0.0.16
- Thunderbird, ThunderbirdSrc 2.0.0.16
- GTK, GTKSrc 2.6.8.00

Summary of Change

The Firefox version has been updated to 2.0.0.16; this version includes Firefox 2.0.0.16 changes from the Mozilla Foundation.

The Thunderbird version has been updated to 2.0.0.16; this version includes Thunderbird 2.0.0.16 changes from the Mozilla Foundation.

Impact

The Firefox 2.0.0.16 open source Web browser includes Firefox 2.0.0.16 changes from the Mozilla Foundation. This version fixes several security vulnerabilities reported by the Mozilla Foundation.

Thunderbird version 2.0.0.16 is a full-featured e-mail application which supports IMAP and POP mail protocols as well as HTML mail formatting. This version fixes several security vulnerabilities reported by the Mozilla Foundation.

Compatibility

Firefox and Thunderbird use the GTK open-source windowing toolkit on both PA-RISC and Itanium. You must install the windowing toolkit before installing Firefox or Thunderbird.

GTK+ 2.6.8 release is intended to provide support only for Firefox and Thunderbird on HP-UX. This product is not supported outside Firefox/Thunderbird, and therefore it is not recommended for mission-critical or production environments.

Performance

There are no known performance issues.

Documentation

The HP-UX Java Web site, including free software downloads, is located at

<http://www.hp.com/go/Java>

For more information on Firefox/Thunderbird on HP-UX 11i, visit

<http://www.hp.com/go/firefox>

Obsolescence

Not applicable.

HP CIFS Server

The HP CIFS Server product implements many Windows Server features on HP-UX. The Microsoft Common Internet File System (CIFS) protocol, sometimes called Server Message Block (SMB), is a Windows network protocol for remote file access. Because the HP CIFS Server gives HP-UX access to the CIFS protocol, it enables HP-UX systems to interoperate with PC clients running Microsoft Windows NT, XP, 2000/2003 and HP-UX machines running HP CIFS Client software. The HP CIFS Server provides file sharing, printer access and authentication services to CIFS clients.

Summary of Change

HP CIFS Server 3.0j version A.02.03.04 is included on the HP-UX OEUR 11i v3 March 2009 release. This product version contains the security fix for CVE-2008-1105 and defect fixes.

For detailed information about the defect fixes, refer to *HP CIFS Server 3.0j Release Notes version A.02.03.04* available at: <http://docs.hp.com/en/netcom.html> (navigate to **CIFS**).

Impact

This release of HP CIFS Server provides defect fixes and security fixes as previously described above.

Compatibility

There are no known compatibility issues.

Performance

The implementation of HP CIFS Server A.02.03.04 does not degrade performance.

Documentation

For more information, refer to the following documentation:

- The following Samba books, which are provided with the HP CIFS Server product and are accessible through the Samba Web Administration Tool (SWAT) home page, or can be accessed directly at `/opt/samba/docs/Samba-HOWTO-Collection.pdf` and `/opt/samba/swat/help` from an HP CIFS Server system:
 - Samba book, *The Official Samba-3 HOWTO and Reference Guide*
 - Samba book, *Samba-3 by Example*
- The following HP CIFS Server documents, which can be found at <http://docs.hp.com/en/netcom.html> (navigate to **CIFS**):
 - *HP CIFS Server 3.0i Administrator's Guide version A.02.03.03*
 - *HP CIFS Server 3.0j Release Note version A.02.03.04*

Obsolescence

Not applicable.

HP-UX Auto Port Aggregation

HP Auto Port Aggregation (APA) for HP-UX 11i v3 is a software product that creates link aggregates, often called "trunks," which provide a logical grouping of two or more physical ports into a single "fat pipe." This port arrangement provides more data bandwidth than would otherwise be available. In addition, HP APA provides automatic link failure detection and recovery, and optional support for load balancing of network traffic across all of the links in the link aggregate. This enables you to build large bandwidth logical links into the server that are highly available and completely transparent to the client and server applications. HP APA

supports the creation of failover groups (link aggregates in *LAN_MONITOR* mode), providing a failover capability for links. In the event of a link failure, LAN Monitor automatically migrates traffic to an available, standby link (port or link aggregate) in the failover group. HP APA supports HP Serviceguard.

Summary of Change

For the March 2009 release, HP APA supports the use of Internet Protocol over InfiniBand (IPoIB) interfaces to create failover groups (*LAN_MONITOR* mode).

Impact

You must install the IPoIB driver.

Compatibility

There are no known compatibility issues

Performance

There are no known performance issues

Documentation

For additional information, see the following:

- Manpages: *netmgr_apa*(1M)
- White Papers: "HP APA Performance and Scalability " at <http://docs.hp.com/en/7662/new-apa-white-paper.pdf>
- Other: *HP-UX APA Administrator's Guide* at <http://docs.hp.com/en/netcom.html#Auto%20Port%20Aggregation%20%28APA%29>

Obsolescence

Not applicable.

HP-UX Web Server Suite

The HP-UX Web Server Suite is a free product available for the HP-UX platform. It contains key software products necessary to deploy, manage, and implement a mission critical web server. The HP-UX Web Server Suite is delivered as a recommended product on all OEs and includes the following components, each of which can be selected or deselected during installation:

- "HP-UX Apache-based Web Server" (page 169)
- "HP-UX Tomcat-based Servlet Engine" (page 169)
- HP-UX Webmin-based Admin (not updated for March 2009)
- HP-UX XML Web Server Tools (not updated for March 2009)

Installation Requirements

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

- Building Apache DSOs using *apxs* depends on Perl installed at `/opt/perl/bin/perl`.
- Fast Perl scripts and Apache modules written in Perl require `mod_perl` to be configured and Perl 5.8.8 (available with the Operating Environment) to be installed.

- HP-UX Tomcat-based Servlet Engine requires Java 1.4 or later. You are not required to have the entire HP-UX Software Development Kit (SDK) for compiling JSPs; only JRE needs to be installed. HP-UX XML Web Server Tools require SDK for Java 1.3 or later.
- HP-UX Webmin-based Admin depends on Perl 5 or later.

Documentation

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



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

The latest information can also be found on the product website: <http://www.hp.com/go/webserver>

HP-UX Apache-based Web Server

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

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

Summary of Change

HP-UX Apache-based Web Server v.2.0.59.08: This release of HP-UX Apache-based Web Server is primarily a security/bug fix release.

Impact

There is no impact.

Compatibility

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

Performance

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

Documentation

See "Documentation" (page 169).

Obsolescence

Not applicable.

HP-UX Tomcat-based Servlet Engine

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

Summary of Change

Tomcat version upgrade to 5.5.27.02

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

Impact

There is no impact.

Compatibility

There are no known compatibility issues.

Performance

There are no known performance issues.

Documentation

See “Documentation” (page 169).

Obsolescence

N/A

Internet Services

Internet Services delivers and supports the networking services considered essential to HP-UX customers interoperating in a network based on the TCP/IP framework. These networking services include HP-UX FTP Server, r-commands (such as `rccp`, `rlogin`, `remsh`), mailers (such as `mailx`, `elm`, `sendmail`), HP-UX-Nameserver (BIND), and the routing services (`gated`, `mouted` and `ramD`).

For additional information, see the following, available online at <http://docs.hp.com>:

- *HP-UX Internet Services Administrator's Guide*
- *HP-UX 11i v3 Installation and Update Guide*

The HP-UX 11i v3 March 2009 release includes updates to the following Internet Services products:

- “HP-UX Mail Server (Sendmail)” (page 170)
- “HP-UX-Nameserver (BIND)” (page 171)

HP-UX Mail Server (Sendmail)

Sendmail 8.13.3 is an electronic mail transport agent that sends messages to one or more recipients, routing the message over whatever networks necessary.

Summary of Change

This product has been updated to incorporate defect fixes. For information, see the *Sendmail 8.13.3 Release Notes* at <http://www.docs.hp.com>.

Impact

There is no impact.

Compatibility

There are no known compatibility issues.

Performance

There are no known performance issues.

Documentation

The following documents are available at <http://www.docs.hp.com>:

- *Sendmail 8.13.3 Release Notes*
- *HP-UX Mailing Services Administrator's Guide*

Obsolescence

None

HP-UX-Nameserver (BIND)

BIND is a Berkeley implementation of the Domain Name System (DNS). It is a distributed network information lookup service that maps host names to Internet addresses, and Internet addresses to host names. It also facilitates Internet mail routing by providing a list of hosts that accept mail for other hosts.

Summary of Change

The following is the change in this version of BIND 9.3.2:

- Support for RFC 4193 (Unique Local IPv6 Unicast Addresses)

Impact

There is no impact.

Compatibility

There are no known compatibility issues.

Performance

There are no known performance issues.

Documentation

The following documents are available at <http://www.docs.hp.com>:

- *BIND 9.3.2 Release Notes*
- *HP-UX IP Address and Client Management Administrator's Guide*

For more information about the 64-bit support, see the *named(1M)* manpage.

Obsolescence

Not applicable.

LDAP-UX Integration

The LDAP-UX Integration product uses the Lightweight Directory Access Protocol (LDAP) to centralize user, group and network information management in an LDAP directory. LDAP-UX integration enables the LDAP directory to be used as a single source repository for HP-UX authentication, authorization, user data and account management. The LDAP-UX Integration product includes the following subcomponents:

- LDAP-UX Client Services
- LDAP-UX Client Administration Tools and Migration Scripts
- NIS/LDAP Gateway Server

For more information about these subcomponents, go to <http://software.hp.com/portal/swdepot/displayProductInfo.do?productNumber=J4269AA>.

Summary of Change

The LDAP-UX Integration product B.04.20 is available on the HP-UX 11i v3 March 2009 release. It is a maintenance release that provides several fixes, plus NGROUP support and Windows 2008 Support. For detailed information about the changes, refer to the *LDAP-UX Integration B.04.20 Release Notes* available at <http://docs.hp.com/en/internet.html>

Impact

LDAP-UX Integration B.04.20 provides defect fixes.

Compatibility

There are no known compatibility issues.

Performance

There are no known performance issues.

Documentation

For more information, refer to the following documentation available at <http://docs.hp.com/en/internet.html> (navigate to **LDAP-UX Integration**):

- *LDAP-UX Client Services B.04.15 Administrator's Guide*
- *LDAP-UX Client Services B.04.15 with Microsoft Windows Active Directory Server Administrator's Guide*
- *LDAP-UX Integration B.04.20 Release Notes*

Obsolescence

Not applicable.

Red Hat Directory Server for HP-UX

HP provides an industry-standard centralized directory service to build your intranet or extranet on. 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, the Red Hat Directory Server can be extended to support your entire enterprise with a global directory service that provides centralized management of your enterprise's resource information

Summary of Change

Red Hat Directory Server B.08.00 is included in the HP-UX 11i v3 March 2009 release as an optional product on all OEs.

This release includes the following enhancements:

- Stronger Hashed Password Storage Support
- IPv6 Support for Client Access (Red Hat Directory Server 8.0 does not support IPv6 addresses in directory database access control instructions, or IPv6 connections for certain operations such as replication and chaining.)
- Improved SASL Support for Kerberos Authentication
- File Hierarchy System Support
- Improved Password Quality Policy Management and Enforcement
- Standalone Directory Servers
- New setup Scripts

The following features in Red Hat Directory Server 7.1 are not supported in Red Hat Directory Server 8.0:

- IM presence information
- DSML gateway
- Phonebook and Gateway web applications

This release also contains multiple non-critical defect fixes. For a complete list, refer to the product release notes.

Impact

You will be able to use the new features for increased security.

You will be able to configure standalone Directory Servers that do not use the centralized administration framework.

You can use the file layout to mount directory data and executables on different file systems.

Compatibility

File locations have changed. You must use the new file locations.

You must run a migration script (`/opt/dirsrv/sbin/migrate-ds-admin.pl` or `migrate-ds.pl`) to migrate data from previous versions.

Object classes and attributes were removed and added. The migration scripts migrate existing object classes and attributes for the user. If you use custom schemas, you might experience collisions with new schema objects.

Performance

There are no known performance issues.

Documentation

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

- *Red Hat Directory Server B.08.00 for HP-UX Release Notes and Supplemental Instructions*
- *Red Hat Directory Server 8.0 Installation Guide*
- *Red Hat Directory Server 8.0 Configuration, Command, and File Reference*
- *Red Hat Directory Server 8.0 Administrator's Guide*

Obsolescence

Not applicable.

8 Security

What is in This Chapter

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

- “HP-UX Auditing and Security Attributes Configuration (secweb)” (page 176)
- “HP-UX Bastille and Install Time Security” (page 176)
- “HP-UX IPFilter” (page 178)
- “HP-UX Password Hash Infrastructure for HP-UX 11i v3” (page 178)
- “HP-UX Secure Shell” (page 180)
- “HP-UX Security Containment Extensions” (page 180)
- “HP-UX Software Assistant” (page 181)
- “Kerberos Client” (page 182)
- “OpenSSL” (page 184)

HP-UX Auditing and Security Attributes Configuration (secweb)

The HP-UX Auditing and Security Attributes Configuration is a plugin for configuring and managing security attributes, and the auditing subsystem without having to convert the system to Trusted mode.

The software provides both web-based graphical user interface (GUI) and text user interface (TUI). You can start the tool from HP System Management Homepage (HP SMH) or HP Systems Insight Manager (HP SIM), or by using the `secweb` command.

Summary of Change

This version includes defect fixes.

Impact

This release of Auditing and Security Attributes Configuration has no known customer impact.

Compatibility

There is no known compatibility issue.

Performance

There is no known performance issue.

Documentation

For further information, see the following:

- Auditing and Security Attributes Configuration Online Help
- Manpages:
 - *secweb*(1M) manpage
 - *audit*(5) manpage
 - *sam*(1M) and *smh*(1M) manpages

Obsolescence

The legacy version (X-Windows based and available through SAM) of the product is no longer supported.

HP-UX Bastille and Install Time Security

HP-UX Bastille

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

Bastille was originally developed by the open source community for use on Linux systems. HP contributed significantly to Bastille on Linux and also offers a high-quality, content-rich, and supported, HP-UX Bastille.

This tool, along with Install-Time Security (ITS) and Software Assistant (SWA) introduces new, out-of-the-box security functionality.

Install Time Security

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

ITS includes the following bundles:

- Sec00Tools (recommended software bundle)
- Sec10Host (optional software bundle)
- Sec20MngDMZ (optional software bundle)
- Sec30DMZ (optional software bundle)

Summary of Change

The March 2009 release (B.3.1.01) is a significant enhancement to include more HP-UX system items that can be locked down. With this expansion, Bastille can now harden a system to align as closely as possible with the requirements of the Center for Internet Security (CIS) Benchmark for HP-UX.

Impact

In March 2009, expanded security hardening choices in Bastille allow you to further lockdown your systems in order to align with the latest CIS Benchmark for HP-UX (or other similar security hardening standards).

Compatibility

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

The *HP-UX 11i v3 Installation and Update Guide*, available at <http://docs.hp.com/en/oshpux11iv3.html>, discusses which particular Bastille settings are applied at each level.

General configuration and operation are unchanged from previous versions; the scope of settings/items in several modules has been expanded. Additionally, the default Bastille configuration files have been updated.

Performance

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

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

Documentation

Information can be found in the following documents:

- *HP-UX System Administrator's Guide: Security Management*, available online at <http://docs.hp.com/en/oshpux11iv3.html> (specifically, Chapter 10)
- *bastille(1M)* manpage (add `/opt/sec_mgmt/share/man/` to `MANPATH`)
- *Bastille User's Guide*, delivered in `/opt/sec_mgmt/bastille/docs/user_guide.txt`
- HP-UX Bastille Web site at <http://www.hp.com/go/bastille>
- *HP-UX 11i v2 Installation and Update Guide*, available online at <http://docs.hp.com/en/oshpux11iv3.html>
- Support is also offered through HP's IT Resource Center's HP-UX Security Forum at <http://forums1.itrc.hp.com/service/forums/paseGuido?CURL=%2Fm%2FCategoryHome%2F1%2C%2C15%2C00html&admit=68235245+11576889648+2335475>

Obsolescence

Security-Patch Check is being deprecated in favor of SWA.

HP-UX IPFilter

HP-UX IPFilter version 16 (A.11.31.16 for HP-UX 11i v3) is a TCP/IP packet filter suitable for use as a system firewall to protect application servers.

Summary of Change

HP-UX IPFilter version 16 (A.11.31.16) includes the following:

- Performance improvements (especially for high speed links such as 10GigE).
- New command option for `ipfstat`. The `ipfstat -Q` option lists the interfaces protected by IPFilter.
- Defect fixes, including a critical defect fix.

Impact

You will be able to use the new features and take advantage of the improved performance.

Compatibility

Existing configuration files will continue to work as before.

Performance

Substantial performance improvement, especially for high speed links such as 10GigE. See the "HP-UX IPFilter Version 16 Performance" White paper for more information.

Documentation

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

- *HP-UX IPFilter Version 16 Release Notes*
- *HP-UX IPFilter Version 16 Administrator's Guide*
- "HP-UX IPFilter Version 16 Performance" White paper

Obsolescence

Not applicable.

HP-UX Password Hash Infrastructure for HP-UX 11i v3

HP-UX Password Hash Infrastructure for HP-UX 11i v3 (PHI11i3) enhances the security on HP-UX 11i version 3. HP-UX PHI11i3 provides a new, SHA512-based algorithm for user password hashes as an alternative to the traditional, DES-based password hash algorithm. HP-UX PHI11i3 is only available on systems with shadowed passwords.

PHI11i3 is a Software Pack product and is newly delivered in March 2009 as an optional product for all Operating Environments. For more information about Software Pack, see "Software Pack (Optional HP-UX 11i v3 Core Enhancements)" (page 42).

Summary of Change

HP-UX Password Hash Infrastructure for HP-UX 11i v3 (PHI11i3) is newly delivered in the March 2009 release as an optional product in all Operating Environments (BOE, HA-OE, VSE-OE and DC-OE).

PHI11i3 offers the following:

- Strong hashing for user passwords stored in `/etc/shadow`
HP-UX PHI11i3 provides system administrators with the option of using a new, SHA512-based password hash algorithm in place of the older, DES-based password algorithm.
- Co-existence between DES-based and SHA512-based passwords
HP-UX PHI11i3 allows successful authentication with and management of passwords which are hashed using different algorithms. In the `/etc/shadow` file some users' passwords can be hashed with the DES-based algorithm, while other users' passwords may be hashed with the new SHA512-based algorithm.
- Migration from one password hash algorithm to another
HP-UX PHI11i3 allows a convenient method of gradual and seamless migration of password hashes from one algorithm to another.
- Cross-vendor compatibility
Hashes from the new algorithm are prefixed with `6`. This allows password hashes to be used across different vendor systems, provided that the other vendors have also implemented the same algorithm.

Impact

You can now use HP-UX Password Hash Infrastructure for HP-UX 11i v3 (PHI11i3) on your HP-UX 11i v3 systems.

Compatibility

- Requires HP-UX 11i version 3.
- Can be installed only on systems with shadowed passwords (that is, with passwords stored in the `/etc/shadow` file).
- Supported with files, but is not supported with other nameserver switch backends, such as NIS. To configure your system to use only files, ensure that the `passwd:` line in `/etc/nsswitch.conf` contains only files.
- To use HP-UX PHI11i3 with SSH, you must install HP-UX Secure Shell A.05.00.26 or later. HP-UX Secure Shell A.05.10.008 is available as a recommended (default-installed) product in all OEs in the March 2009 OEUR.
- To use the `pcnfsd` commands with HP-UX PHI11i3, you must install ONCplus B.11.31.02 or later. ONCplus B.11.31.06.01 is installed as a required (always-installed) product with all OEs in the March 2009 OEUR.
- Some third party applications may assume that password hashes are DES-based only. These applications would not function correctly with HP-UX PHI11i3.

Performance

There is no impact on performance.

Documentation

For further information, see HP Software Depot:

<http://h20392.www2.hp.com/portal/swdepot/displayProductInfo.do?productNumber=PHI11i3>

Obsolescence

Not applicable.

HP-UX Secure Shell

HP-UX Secure Shell versions A.05.00.024, A.05.00.025, and A.05.00.026 are based on OpenSSH 5.1p1. The following lists the availability of HP-UX Secure Shell products on HP-UX 11i v1, 11i v2, and 11i v3:

- A.05.00.024 - HP-UX 11i v1
- A.05.00.025 - HP-UX 11i v2
- A.05.00.026 - HP-UX 11i v3

Summary of Change

HP-UX Secure Shell versions A.05.00.024, A.05.00.025, and A.05.00.026 are based on OpenSSH 5.1p1 and include several new features. The details are available at <http://docs.hp.com/en/T1471-90033/index.html>.

Impact

HP-UX Secure Shell versions A.05.00.024, A.05.00.025, and A.05.00.026 has the latest defect fixes ported from public domain OpenSSH 5.1p1.

Compatibility

There are no known compatibility issues.

Performance

There are no known performance issues.

Documentation

The following documents are available on <http://www.docs.hp.com> in the **Internet and Security Solutions** section:

- *HP-UX Secure Shell Getting Started Guide*
- *HP-UX Secure Shell A.05.00.024, A.05.00.025, and A.05.00.026 Release Notes*

Manpages:

- *sshd_config(5)*
- *ssh_config(5)*
- *ssh(1)*

Obsolescence

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

HP-UX Security Containment Extensions

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

With HP-UX Security Containment Extensions, the HP-UX 11i v3 operating system simplifies the configuration of application containment and enables compartment login restrictions for enhanced application stacking and workload consolidation.

HP-UX Security Containment Extensions is a Software Pack product and is newly delivered in March 2009 as an optional product for all Operating Environments. For more information about Software Pack, see “Software Pack (Optional HP-UX 11i v3 Core Enhancements)” (page 42).

Summary of Change

HP-UX Security Containment Extensions is newly delivered in the March 2009 release as an optional (optionally installed) product in all Operating Environments (BOE, HA-OE, VSE-OE and DC-OE). It includes the following features:

- Containment Wizard

The application containment wizard, `contain`, is a tool that helps a system administrator set up and configure a compartment. The `contain` tool creates a compartment and configures the applications specified on the command line for execution in the compartment. After the compartment has been created and the applications have been configured, the `contain` tool gives the user an opportunity to run these applications in the newly created compartment. The containment wizard then collects the list of required access rules for these applications and attempts to simplify these rules based on the system administrator's input.

- Compartment Login

The compartment login configuration enables users and administrators to log in directly to a compartment. It provides a mechanism to set controls on those users that are allowed to log in to a service running in a specified compartment or prevent access to the system based on previously configured authorization information.

Impact

See the preceding "Summary of Change."

Compatibility

Requires HP-UX 11i version 3. To use HP-UX Security Containment Extensions with SSH, you must install HP-UX Role-Based Access Control (RBAC) version B.11.31.04 or later. RBAC B.11.31.04 is available as an optionally installed product in the March 2008, September 2008, and March 2009 OEURs, or it may be downloaded from Software Depot: <http://software.hp.com>. The HP-UX Security Containment Extensions product is added to HP-UX Security Containment that is part of core HP-UX.

Performance

There are no known performance issues.

Documentation

For additional information, see the following documents:

- *HP-UX Security Containment Extensions B.11.31.01 Release Notes* (<http://docs.hp.com/en/internet.html#Security%20Containment>)
- "HP-UX Compartment Login Using Secure Shell (SSH)" (<http://docs.hp.com/en/internet.html#Security%20Containment>)
- *HP-UX System Administrator's Guide: Security Management* (<http://docs.fc.hp.com/en/oshpux11iv3.html#System%20Administration>)

Obsolescence

Not applicable.

HP-UX Software Assistant

HP-UX Software Assistant (SWA) C.02.11 is a tool that consolidates and simplifies patch management and security bulletin management on HP-UX systems. SWA combines the versatility and power of the HP IT Resource Center Patch Assessment and Security Patch Check utilities,

and is the HP-recommended utility to use to maintain currency with HP-published security bulletins for HP-UX software.

Summary of Change

The March 2009 release includes the following changes:

- SWA now allows you to select the analyzers to be used when generating reports within HP SIM
- Java™ SE6 is now supported

The March 2009 release also includes the following changes that were released independently on the web in October 2008:

- Multisystem analysis is supported in HP SIM for a selected set of features including catalog download, inventory creation, analysis, and report generation
- SWA produces a summary table within HP SIM of system issues showing total issues by analyzer type

Impact

See the preceding “Summary of Change.”

Compatibility

There are no known compatibility issues.

Performance

There are no known performance issues.

Documentation

The following manpages are available:

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

The HP-UX Software Assistant web pages can be found at <https://www.hp.com/go/swa>, where you can get an overview, receive installation instructions, and download SWA.

The *HP-UX Software Assistant Release Notes* and the *HP-UX Software Assistant System Administration Guide* are available on <http://www.docs.hp.com> under the heading **11i v3**, then the headings **Software Assistant (SWA)**, **Patch Management**, and **Security Patch Check**.

Obsolescence

Not applicable.

Kerberos Client

Kerberos Client (KRB5CLIENT) version E.1.6.2.02 helps to provide Kerberos authentication and strong cryptography for secure communication over the network.

Kerberos Client is a Software Pack product and is newly delivered in March 2009 as an optional product for all Operating Environments. For more information about Software Pack, see “Software Pack (Optional HP-UX 11i v3 Core Enhancements)” (page 42).

Summary of Change

Kerberos Client version E.1.6.2.02 includes the following new features:

- Provides thread safety for Kerberos libraries
- Provides the following new client commands:
 - Command for copying service ticket between credential caches: `kcpytkt`
 - Command for deleting service ticket from the credential cache: `kdelktkt`
- Provides the following new functions, which are needed for NFSv4:
 - The `gss_krb5_set_allowable_enctypes()` function
 - The `gss_krb5_export_lucid_sec_context()` function
- Provides a plug-in architecture that allows for extension modules to be loaded at run-time
- Partial client implementation to handle server name referrals



NOTE: Patch PHSS_38568 is a required for Kerberos Client E.1.6.2.02.

If you install Kerberos Client E.1.6.2.02 as part of a March 2009 OE, this patch will also be installed as part of the `FEATURE11i` patch bundle, which is a required (always-installed) bundle in the OEs.

If you install Kerberos Client E.1.6.2.02 separate from an OE, you must first obtain the patch from the IT Resource Center: <http://itrc.hp.com>.

Impact

See the preceding “Summary of Change.”

Compatibility

There are no known compatibility issues.

Performance

There are no known performance issues.

Documentation

The following Kerberos Client documents are available on <http://www.docs.hp.com> in the **Internet and Security Solutions** section:

- *Release Notes (5992-4778)*
- *Configuration Guide for Kerberos Client Products (5991-6632)*

The following manpages are also available with Kerberos Client E.1.6.2.02:

- *kerberos(9)*
- *libkrb5(3)*
- *krb5.conf(4)*
- *kdestroy(1)*
- *kinit(1)*
- *klist(1)*
- *kpasswd(1)*
- *kvno(1)*
- *ktutil(1)*
- *kcpytkt(1)*
- *kdelktkt(1)*

Obsolescence

Not applicable.

OpenSSL

OpenSSL A.00.09.07m.041, A.00.09.07m.042, and A.00.09.08h.040 is based on the open source OpenSSL 0.9.7m and 0.9.8g products. This bundle contains the following:

- OpenSSL A.00.09.08h in the /opt/openssl/0.9.8 directory
- OpenSSL A.00.09.07m in the /opt/openssl/0.9.7 directory
- FIPS Capable OpenSSL (based on 0.9.7m and linked against FIPS 140-2 module) in the /opt/openssl/fips/0.9.7 directory

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

- A.00.09.07m.041 - HP-UX 11i v1
- A.00.09.07m.042 - HP-UX 11i v2
- A.00.09.08h.040 - HP-UX 11i v3

Summary of Change

OpenSSL A.00.09.07m and A.00.09.08h support the following security features:

- Ciphers
- Message Digest
- Public key encryption
- Certificates
- Encoding
- FIPS

OpenSSL A.00.09.08h supports all the security features that are available in OpenSSL A.00.09.07m. In addition, OpenSSL A.00.09.08h also supports the following public-key encryptions:

- Elliptic Curve Crypto (ECC)
- Elliptic Curve Diffie-Hellman (ECDH)
- Elliptic Curve Digital Signature Algorithm (ECDSA)

OpenSSL A.00.09.08h also provides library support to the following hardware ENGINES:

- 4758cca
- aep
- atalla
- chil
- cswift
- gmp
- nuron
- sureware
- ubsec

Defects Fix details are available in the OpenSSL Changelog at <http://www.openssl.org/news/changelog.html>

Additional information on OpenSSL defects and fixes is available at

- <http://www.secunia.org> (General information on security vulnerabilities for different products). Search for the keyword **OpenSSL** to locate security vulnerabilities for OpenSSL.
- <http://cvs.openssl.org> (To obtain source code level information about specific patches)

Impact

There are some minor installation changes. For more information, see the Software Depot pages or the *OpenSSL A.00.09.07m.041, A.00.09.07m.042, and A.00.09.08h.040 Release Notes* for more information.

Compatibility

There could be some patch requirements. For more information, see the Software Depot pages or the *OpenSSL A.00.09.07m.041, A.00.09.07m.042, and A.00.09.08h.040 Release Notes*.

Performance

There are no known performance issues.

Documentation

For more information, refer to the *OpenSSL A.00.09.07m.041, A.00.09.07m.042, and A.00.09.08h.040 Release Notes* at <http://www.docs.hp.com> under the section **Internet and Security Solutions**.

Obsolescence

Not applicable.

9 Commands and System Calls

What is in This Chapter

This chapter provides information about new and changed commands and system calls, specifically the following:

- “CpioCmdEnh” (page 188)
- “diskowner(1M) Command” (page 188)
- “ioscan(1M)” (page 189)
- “mediainit(1) Command” (page 189)
- “PAX-ENH” (page 190)

CpioCmdEnh

The `cpio` command saves and restores archives of files on magnetic tape, other devices, or a regular file, and copies files from one directory to another while replicating the directory tree structure.

CpioCmdEnh is a Software Pack product and is newly delivered in March 2009 as an optional product for all Operating Environments. For more information about Software Pack, see “Software Pack (Optional HP-UX 11i v3 Core Enhancements)” (page 42).

Summary of Change

Added support for the larger UID and GID in `cpio(1)`.

Impact

The `cpio(1)` command can archive and extract files with UID and GID > 60K.

Compatibility

There are no known compatibility issues.

Performance

There are no known performance issues.

Documentation

For additional information, see the `cpio(1)` manpage

Obsolescence

Not applicable.

diskowner(1M) Command

The `diskowner` command is used to retrieve the subsystem, if any, which is using the specified path. The command is intended to help prevent users from overwriting storage that is already in use. The command will print out the owner of the path, or none if no owner was found.

Summary of Change

- The `diskowner(1M)` has been enhanced to identify the Extensible Firmware Interface (EFI) partitions present on the disk and report this subsystem as “partition.”
- The `diskowner(1M)` has been enhanced to support a new option: `-A`. When `diskowner(1M)` is used along with the `-A` option, the command lists all subsystem names that are all using the specified path.

Impact

See the preceding “Summary of Change.”

Compatibility

There are no known compatibility issues.

Performance

There are no known performance issues.

Documentation

For additional information, see the manpage *diskowner(1M)*.

Obsolescence

Not applicable.

ioscan(1M)

The *ioscan(1M)* command scans system hardware, usable I/O system devices, or kernel I/O system data structures as appropriate, and lists the result. The `-F` option of this command produces compact listing of fields separated by colons (:).

Summary of Change

The `-F` option of the *ioscan(1M)* command has been enhanced to support a new exclusive option `-A`. This new option `-A` can only be used with the `-F` option. When the `-F` option is used along with the `-A` option, the command produces a compact listing which includes *alias_path* property. An example usage is as follows:

```
ioscan -kFA -d driver
```

Impact

You can now produce a compact listing that includes the *alias_path* property.

Compatibility

There are no known compatibility issues.

Performance

There are no known performance issues.

Documentation

The *ioscan(1M)* manpage has been modified.

Obsolescence

Not applicable.

mediainit(1) Command

The *mediainit(1)* command initializes mass storage media by formatting the media, writing and reading test patterns to verify media integrity, then sparing any defective blocks found. This process prepares the disk or tape for error-free operation. Initialization destroys all existing user data in the area being initialized.

Summary of Change

The *mediainit(1)* command has been enhanced to provide a scrubbing feature for disk devices. When this feature is used, the command scrubs the disk media content with a set of patterns so that retrieval of its content becomes more difficult.

This feature supports three options `-S`, `-c` and `-t`. The `-c` and `-t` options have to be used along with `-S`.

- With `-S` option, the command scrubs the media 3 times (first scrubs with a character, then scrubs with complement of the character and then with a random number).
- With option `-c`, user can select the character to be written. Then the command first scrubs with the user-given character, then scrubs with complement of the character and then with a random number.
- With option `-t`, user can specify number of scrubs. If the `-t` option is used along with `-S` and `-c` then the command scrubs the media with the given character for number of iterations mentioned with `-t`.

Impact

With this scrubbing feature, you can now make the retrieval of content from disk media more difficult.

Compatibility

There are no known compatibility issues.

Performance

There are no known performance issues.

Documentation

For additional information, see the manpage *mediainit(1)*.

Obsolescence

Not applicable.

PAX-ENH

The `pax` command extracts and writes member files of archive files; writes lists of the member files of archives; and copies directory hierarchies.

PAX-ENH is a Software Pack product and is newly delivered in March 2009 as an optional product for all Operating Environments. For more information about Software Pack, see “Software Pack (Optional HP-UX 11i v3 Core Enhancements)” (page 42).

Summary of Change

The PAX-ENH product enables the following options on *pax(1)* command for HP-UX 11i v3:

- Backup of ACLs
- Usage of graph files

Impact

With this enhancement, the *pax(1)* command supports backup of ACLs and usage of graph files.

Compatibility

Default behavior: The list of files to be backed up needs to be specified through the command line.

New behavior: If a graph file is specified, then there is no need to specify the files to be backed up through the command line

Performance

There is no impact on performance

Documentation

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

Obsolescence

Not applicable.

10 Libraries and Programming

What is in This Chapter

This chapter covers a variety of changes of particular interest to programmers, such as changes to compilers, editors, and libraries, including the following:

- “Java 2 Standard Edition Platform” (page 194)
 - “Java JDK/JRE for HP-UX” (page 194)
- “Libc Enhancement” (page 195)
- “Perl” (page 196)
- “pthread Library” (page 196)
- “MallocNextGen” (page 197)

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.

Java JDK/JRE for HP-UX

Java JDK/JRE 6.0: The HP-UX Java Development Kit (JDK) for the Java 2 Platform Standard Edition 6 (Java™ SE 6) provides the programming tools and runtime environment that allow you to deploy version 6.0 Java technology with the best performance on systems running HP-UX 11i.

Java JDK/JRE 5.0: The HP-UX Java Development Kit (JDK) for the Java 2 Platform Standard Edition (J2SE) provides the programming tools and runtime environment that allow you to deploy version 5.0 Java technology with the best performance on systems running HP-UX 11i.

Java JDK/JRE 1.4.2: The HP-UX Software Development Kit (SDK) and Runtime Environment (RTE) for the Java 2 Standard Edition platform provides the Java 2 programming tools and runtime environment that allow you to deploy version 1.4 technology with the best performance on systems running HP-UX 11i.

Products are:

- Java60JDK - Java 6.0 JDK
- Java60JDKadd - Java 6.0 JDK Addon
- Java60JRE - Java 6.0 JRE
- Java60JREadd - Java 6.0 JRE Addon
- Java15JDK - Java 5.0 JDK
- Java15JDKadd - Java 5.0 JDK Addon
- Java15JRE - Java 5.0 JRE
- Java15JREadd - Java 5.0 JRE Addon
- T1456AA - Java 1.4 SDK
- T1456AAaddon - Java 1.4 SDK Addon
- T1457AA - Java 1.4 RTE
- T1457AAaddon - Java 1.4 RTE Addon
- T1458AA - Java 1.4 Plugin
- ObsJava12 - Obsolescence for Java 1.2 (1.0.02)
- ObsJava13 - Obsolescence for Java 1.3 (1.0.03)

Summary of Change

The Java versions for this HP-UX 11i v3 OE release are as follows:

- JDK/JRE version 6.0.02 is a new version of the HP-UX Java Development Kit (JDK) 6.0.x that has been updated for defect and security bulletin fixes. Additionally, Allocation Site Statistics and Zero Preparation Verbosegc features are implemented. See the *JDK 6.0.02 Release Notes* at http://docs.hp.com/en/JDKJRE60RN/jdk_rnotes_6.0.02.html#features for details.
- JDK/JRE version 5.0.14 is a new version of the HP-UX Java Development Kit (JDK) 5.0.x that has been updated to include the Sun 1.5.0_16 drop and incorporate defect and security bulletin fixes. Additionally, Allocation Site Statistics and Zero Preparation Verbosegc features are implemented. See the *JDK 5.0.14 Release Notes* at http://docs.hp.com/en/JDKJRE50RN/jdk_rnotes_5.0.14.html#features for details.
- SDK/RTE version 1.4.2.21 is a new version of the HP-UX Java Software Development Kit (SDK) that has been updated to include the Sun 1.4.2_18 drop and incorporate defect and security bulletin fixes. Additionally, SDK 1.4.2.21 is designed to take advantage of more efficient memory management algorithms being implemented in HP-UX.

Impact

Besides the JDK 6.0.02 and JDK 5.0.14 new Allocation Site Statistics and Zero Preparation Verbosegc features, and the SDK 1.4.2.21 improved memory management algorithms being implemented in HP-UX, there should be no impact to customers. You will have the most current Java technology.

Compatibility

There are no known compatibility issues.

Performance

The SDK 1.4.2.21 release is designed to take advantage of more efficient memory management algorithms being implemented in HP-UX.

Documentation

The HP-UX Java Web site, including free software downloads, is located at <http://www.hp.com/go/Java>

The HP-UX Java technical documentation Web site is located at <http://docs.hp.com/en/dev.html#Java>

Obsolescence

SDK/RTE 1.3 has reached end-of-life and is not included in this release. `ObsJava13`, Obsolescence for Java 1.3 (1.0), is included in the OBSOLESCENCE bundle and will remove version 1.3 upon HP-UX 11i v3 update.

Libc Enhancement

This product contains a library, `libcEnh`, header files, a object file and manpages for `libc` enhancements.

The version number of this product is B.11.31.0903.01.

Summary of Change

The product contains new APIs to get instantaneous thread time consumption statistics for bound threads.

Impact

Previously, there were no APIs that could be used to compute the thread time consumption statistics of bound threads. With the March 2009 release, there now are.

Compatibility

There are no known compatibility issues. This is a new feature.

Performance

There are no known performance issues.

Documentation

For additional information, see the following manpages:

- `iticks(3C)`
- `iticks_gettimes(3C)`

- *iticks_to_timespec*(3C)
- *iticks_to_hrttime*(3C)

Obsolescence

Not applicable.

Perl

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

The version that is submitted is 5.8.8.

Summary of Change

This release is made to move from ActivePerl to OpenSource Perl on HP-UX.

Impact

There is no customer impact in using OpenSource Perl bits, in place of the ActivePerl bits.

Compatibility

Perl 5.8 is not binary compatible with earlier releases of Perl for XS modules. These modules have to be recompiled. (Pure Perl modules should continue to work.)

The major reason for the discontinuity is the new IO architecture called PerlIO. PerlIO is the default configuration because without it many new features of Perl 5.8 cannot be used. In other words: you just have to recompile your modules containing XS code.

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

Performance

There are no known performance issues.

Documentation

For additional information, see the following:

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

Obsolescence

Not applicable.

pthread Library

The pthread library (`libpthread`) provides interfaces for developing multi-threaded applications.

Summary of Change

A new API, *pthread_yield*(3T), is provided in pthread library.

`libpthread` provides a new function, `pthread_yield()`, which enables the unbound thread to yield in user space (yielding between user threads).

Impact

MxN application creating unbound threads (*PTHREAD_SCOPE_PROCESS*) can use the `pthread_yield()` function.

Compatibility

There are no known compatibility issues. This is a new API in `libpthread`.

Performance

There are no known performance issues.

Documentation

For additional information, see the *pthread_yield(3T)* manpage.

Obsolescence

Not applicable.

MallocNextGen

MallocNextGen is a new implementation of the user space memory allocator. It is delivered as an optionally installed feature on all OEs.

Summary of Change

Enhancements have been made to the Next Generation Memory Allocator that improves memory utilization. These enhancements have been made to a part of the allocator that manages large blocks.

This release also fixes defects found in the Next generation Memory Allocator.

Impact

Applications that allocate many large blocks of size greater than 128 KB may see improved memory utilization.

Compatibility

Compatibility is preserved for applications that worked with the previous version (September 2008) of the allocator.

Performance

Applications that allocate many large blocks of size greater than 128 KB may see better performance.

Documentation

For additional information, see the *mallocong(3X)* manpage. Note the manpage has not been changed for this release.

Obsolescence

Not applicable.

11 Internationalization

What is in This Chapter

This chapter describes internationalization functionality, including the following:

- “iconv Codeset Conversion” (page 200)

iconv Codeset Conversion

The `iconv` codeset conversion command and APIs enable the conversion of character data from one character set to another.

Summary of Change

Japanese mainframe codeset converters (MFCONV) will now work correctly for user or third-party supplied translation tables (created by `genxlt`) which are not fully populated in the single-byte character range.

Impact

These changes should support more varied forms of user or third-party codeset translation tables for MFCONV.

Compatibility

There are no known compatibility issues.

Performance

There are no known performance issues.

Documentation

For additional information, see the `iconv(1)` and `iconv(3C)` manpages.

Obsolescence

Not applicable.

12 Other Functionality

What is in This Chapter

This chapter usually describes other new and changed operating-system software functionality.

- “HP-UX Parallel Umounts (UmountallEnh)” (page 202)
- “Locality-Optimized Resource Alignment (LORA)” (page 202)

HP-UX Parallel Umounts (UmountallEnh)

HP-UX Parallel Umounts (UmountallEnh) 1.0 is a multi threaded umountall feature that unmounts all or selected filesystems in parallel.

HP-UX Parallel Umounts is a Software Pack product and is newly delivered in March 2009 as an optional product for all Operating Environments. For more information about Software Pack, see “Software Pack (Optional HP-UX 11i v3 Core Enhancements)” (page 42).

Summary of Change

The Parallel Umounts feature is delivered as the following binary:

/sbin/umountall_enh

Impact

This feature will allow faster shutdown of machines with large numbers of mounted filesystems.

Compatibility

There are no known compatibility issues.

Performance

This feature will reduce the shutdown time.

Documentation

For additional information, go to Software Depot at <http://hp.com/go/softwaredepot> and enter “UmountallEnh” in the search box, or go directly to the following website:

<http://h20293.www2.hp.com/portal/swdepot/displayProductInfo.do?productNumber=UmountallEnh>

Obsolescence

Not applicable.

Locality-Optimized Resource Alignment (LORA)

The following patches have been delivered in the March 2009 FEATURE11i patch bundle to enable future support of the Locality-Optimized Resource Alignment (LORA) feature. Some patches also include changes for other features and defect fixes.

PHCO_39051, PHCO_39121, PHKL_38650, PHKL_38651, PHKL_38686, PHKL_38687, PHKL_38688, PHKL_38708, PHKL_38715, PHKL_38762, and PHKL_39060