HP-UX 11i Version 3 March 2010 Release Notes

Operating Environments Update Release

Abstract

This document provides an overview of what is new, changed, deprecated, or obsoleted in the HP-UX 11i v3 Operating Environments since the previous release of HP-UX 11i v3. This document is intended for system administrators responsible for managing HP-UX 11i v3. Administrators are expected to have knowledge of operating system concepts, commands, and configuration.

Acknowledgements

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Revision 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, including the most recent version of this document, see the HP-UX 11i v3 documentation at http://hp.com/go/hpux-core-docs. Documents in this series are also available on the Instant Information media, but may be superseded by new editions on the web.

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

Table 1 Current Document in This Series

Document Title and Edition	Document manufacturing part number	Supported operating systems	Edition	Publication date
HP-UX 11i Version 3 March 2010 Release Notes	5900-1579	HP-UX 11i v3	Edition 3	March 2011

NOTE: For Edition 2 of the *HP-UX 11i Version 3 March 2010 Release Notes*, information in "ProviderSvcsBase" (page 146) was updated.

Table 2 Previous Documents in This Series

Document Title and Edition	Document manufacturing part number	Supported operating systems	Edition	Publication date
HP-UX 11i Version 3 March 2010 Release Notes	BA927-90021	HP-UX 11i v3	Edition 2 (retired)	March 2010
HP-UX 11i Version 3 March 2010 Release Notes	BA927-90009	HP-UX 11i v3	Edition 1 (retired)	March 2010
HP-UX 11i Version 3 September 2009 Release Notes	5900-0578	HP-UX 11i v3	Edition 2	September 2009
HP-UX 11i Version 3 September 2009 Release Notes	5992-6561	HP-UX 11i v3	Edition 1 (retired)	September 2009
HP-UX 11i Version 3 March 2009 Release Notes	5992-5804	HP-UX 11i v3	Edition 1	March 2009
HP-UX 11i Version 3 September 2008 Release Notes	5992-4174	HP-UX 11i v3	Edition 1	September 2008

Table 2 Previous Documents in This Series *(continued)*

Document Title and Edition	Document manufacturing part number	Supported operating systems	Edition	Publication date
HP-UX 11i Version 3 March 2008 Release Notes	5992-3373	HP-UX 11i v3	Edition 1	March 2008
HP-UX 11i Version 3 September 2007 Release Notes	5992-3231	HP-UX 11i v3	Edition 3	September 2007
HP-UX 11i Version 3 September 2007 Release Notes	5992-1996	HP-UX 11i v3	Edition 2 (retired)	September 2007
HP-UX 11i Version 3 September 2007 Release Notes	5992-0698	HP-UX 11i v3	Edition 1 (retired)	September 2007
HP-UX 11i v3 Release Notes Errata	5992-5827	HP-UX 11i v3	Edition 3	October 2008
HP-UX 11i v3 Release Notes Errata	5992-2881	HP-UX 11i v3	Edition 2 (retired)	September 2007
HP-UX 11i v3 Release Notes Errata	5991-7585	HP-UX 11i v3	Edition 1 (retired)	July 2007
HP-UX 11i Version 3 Release Notes	5991-6469	HP-UX 11i v3	Edition 1	February 2007

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://hp.com/go/hpux-core-docs.

Contents

1 How to use this document

The purpose of the HP-UX 11i Version 3 March 2010 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 September 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.

http://hp.com/go/hpux-core-docs

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://hp.com/go/hpux-core-docs.

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 31) 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.

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.

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.

2 Introduction to HP-UX 11i version 3

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

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.

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. For detailed information on the new HP-UX 11i v3 Operating Environments, please see:

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

Information about the Operating Environments can also be found in this *Release Notes* document at "HP-UX 11i v3 Operating Environments" (page 21).

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 3 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://hp.com/go/hpux-core-docs.

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://hp.com/go/hpux-core-docs.

HP-UX 11i v3 Operating Environments

Overview

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

Licenses for the original set of OEs are still available, and customers requiring version 2 of HP-UX 11i may purchase the original set of Operating Environments through the end of the planned sales life of HP-UX 11i v2 in December, 2010.

HP-UX 11i v1 reached its planned end-of-sale date in December 2009, and v1 Media and Manuals are no longer available for sale.

For more information on transition, mapping, etc. from original OEs to new OEs (listed below), see: http://h20338.www2.hp.com/hpux11i/us/en/products/hpux11iv3-oes-support-costs.html.

With the March 2010 release, the new HP-UX 11i v3 Operating Environments deliver several enhancements, including:

- HP Insight Control power management software, delivered as an optional product in all OEs
- Integrity VM Online Migration Software, delivered as an optional product in VSE-OE and DC-OE
- HP Insight Orchestration, license rights included with VSE-OE and DC-OE (see Insight Orchestration letter for full delivery details)

Also in March 2010, the HP-UX 11i v3 electronic software delivery model includes Americas, Europe, Middle East, and Asia. Electronic delivery to Japan and China will follow later in the calendar year. The download consists of ISO images of each OE. Each ISO image is burned to DVD at the customer's site and then installed in the same manner as the physical DVDs. Electronic licenses and media are quoted and ordered from the price list in the same manner as the physical licenses and media.

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 22).

- **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 27).

- **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 28).

- **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 29).

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://hp.com/go/hpux-core-docs.

For definitions of *required*, *recommended*, and *optional*, see "HP-UX 11i v3 Software Bundles" (page 21).

For an overview of the features that are new or have changed in this release, see Chapter 3 (page 31).

Required Features

- 10GigEthr-02
- 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 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 (`ProviderSvcsBase`)
- Quality Pack Patch Bundles (QPKBASE and QPKAPPS)
- scsiU320-00
- RAID-01

- Sendmail
- SerialSCSI-00
- SWGETTOOLS
- SWManager
- SysMgmtBASE
- SysMgmtMin
  - Software Distributor
  - HP Instant Capacity Manager (iCAPMgr)
- 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
- HP Auto Port Aggregation
- HP-ACC-Link
- 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
- HPUX-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 5.0, 6.0
- LDAP-UX
- 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
- SATADVD-00
- Sec00 Security Tools
- Software Assistant
- SysMgmtWeb (contains HP System Management Homepage)
- Thunderbird/Thunderbird Source
- Tune-N-Tools
- VxFS 5.0

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 Insight Control power management
- 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 Directory Server
- HP-UX Host Intrusion Detection System (HIDS)
- HP-UX IPSec
- HP-UX LongPassword for HP-UX 11i v3
- 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
- HPUX-SLP
- HP-UX Swapoff (Command)
- HyprFabrc-00
- IB4X-00 Driver for InfiniBand
- Ignite-UX
- Insight managed system setup wizard
- ISOIMAGE-ENH
- IPv6 Upgrade for HP-UX 11i v3
- Kerberos Client (KRB5CLIENT)
- Libc Enhancement
- MallocNextGen
- MemFS

- Mobile IPv6
- Multimedia Streaming Protocols
- Numeric User Group Name
- PAX-ENH (Pax Enhancement)
- PCIMUX-00
- PRMSIMTools
- Java Out-of-Box
- RCEnhancement
- SAR-MEMFS-ENH
- Security Level 10
- Security Level 20
- Security Level 30
- Software Package Builder
- TermIO-00
- *trufgrep*(1) command
- UmountallEnh
- Virtual Server Environment Configuration Assistant (VseAssist)
- 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://hp.com/go/hpux-core-docs.

For definitions of *required*, *recommended*, and *optional*, see "HP-UX 11i v3 Software Bundles" (page 21).

For an overview of the features that are new or have changed in this release, see Chapter 3 (page 31).

Required Features

- See Required Features (page 23).

Recommended Features

- GlancePlus Pak
- High Availability Monitors
- HostAvioLan
- HostAvioStor
- HP Capacity Advisor LTU

- HP Global Workload Manager LTU
- HP Virtualization Manager LTU
- HP VSE Suite LTU
- HP-UX Workload Manager
- HP-UX Workload Manager Toolkits
- MirrorDisk/UX (not in BOE)
- OnlineJFS 5.0
- Plus the list in Recommended Features (page 24)

Optional Features

- HP Integrity Virtual Machines
- HP Integrity VM Manager (VMMGR)
- HP Integrity Virtual Machines (`VMGuestSW`)
- HP OnlineJFS 4.1
- HP-UX Virtual Partitions
- Integrity VM Online Migration Software
- VMKernelSW
- Plus the list in Optional Features (page 26)

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://hp.com/go/hpux-core-docs.

For definitions of *required*, *recommended*, and *optional*, see "HP-UX 11i v3 Software Bundles" (page 21).

For an overview of the features that are new or have changed in this release, see Chapter 3 (page 31).

Required Features

- See Required Features (page 23).

Recommended Features

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

- MirrorDisk/UX (not in BOE)
- OnlineJFS 5.0
- Plus the list in Recommended Features (page 24)

Optional Features

- HP OnlineJFS 4.1
- Plus the list in Optional Features (page 26)

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://hp.com/go/hpux-core-docs.

For definitions of *required*, *recommended*, and *optional*, see "HP-UX 11i v3 Software Bundles" (page 21).

For an overview of the features that are new or have changed in this release, see Chapter 3 (page 31).

Required Features

- See Required Features (page 23).

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 Virtualization Manager LTU
- HP VSE Suite LTU
- HP-UX Workload Manager
- HP-UX Workload Manager Toolkits
- MirrorDisk/UX (not in BOE)
- OnlineJFS 5.0
- Plus the list in Recommended Features (page 24)

Optional Features

- HP Integrity Virtual Machines
- HP Integrity Virtual Machines (`VMGuestSW`)
- HP Integrity VM Manager (VMMGR)
- HP-UX Virtual Partitions
- HP OnlineJFS 4.1
- Integrity VM Online Migration Software
- VMKernelSW
- Plus the list in Optional Features (page 26)

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 2010 release of HP-UX 11i v3, the following SPK products have been added to the Operating Environments as optionally installed features/products:

- " HP-UX LongPassword for HP-UX 11i v3" (page 173)
- "trufgrep(1) command" (page 182)

HP's green business technology initiative

In support of the HP Green Business Technology Initiative, many previously printed documents will now be provided electronically. The documentation is available on the web and may also be available on the Instant Information DVD. (For links, see Chapter 13: "Support and other resources" (page 191).)

Note that all documents at http://docs.hp.com are being migrated to the HP Business Support Center (BSC) website (http://hp.com/bizsupport), which houses both technical documentation and additional product support information. When the migration is complete, under the HP-UX section of the http://docs.hp.com homepage, you will find a link to redirect you to the new BSC location. For more information, see "More info on document moves to BSC" at the bottom of the http://docs.hp.com/ homepage.

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/hpux11icompatibility

Compatibility issues or exceptions in HP-UX 11i v3 March 2010

Compatibility issues or exceptions have been noted for the following products or features in HP-UX 11i v3 March 2010. For details, see the indicated pages.

- "HP-UX Accounts for Users and Groups (ugweb)" (page 133)
- "ProviderSvcsBase" (page 146)
- " HP-UX LongPassword for HP-UX 11i v3" (page 173)
- "Unwind Library (libunwind) " (page 187)

3 What is new at a glance

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.

NOTE:

About defect fixes

In general, information about defect fixes are not provided in the *HP-UX 11i v3 Release Notes*. For details of defect fixes, refer to the product's own documentation (such as product release notes).

About known problems

For information about known problems that relate to the installation and update of HP-UX 11i v3, see the following documents for the current release. Both can be found at http://hp.com/go/hpux-core-docs.

- *HP-UX 11i v3 Installation and Update Guide* (see Appendix A: "Known install and update problems")
- *HP-UX 11i v3 Read Before Installing or Updating* (also provided as a booklet in the OEUR media kit)

For information about product-specific known problems, refer to the product's own documentation (such as product release notes).

About manpages

The most current HP-UX manpages are provided by the product release or patch and can be viewed using the `man` command. The HP-UX manpages on the web may not include the most recent updates.

What is new in the HP-UX 11i v3 March 2010 release

In the following summaries, you can obtain a general picture of how the March 2010 release of HP-UX 11i v3 differs from the September 2009 release of HP-UX 11i v3.

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

Chapter 2 (page 20)

- **New:** Software Pack (Optional HP-UX 11i v3 Core Enhancements): New products (HP-UX LongPassword for HP-UX 11i v3 and *trufgrep*(1) command) are available in the Operating Environments as *optional* (optionally installed) features. See "Software Pack (optional HP-UX 11i v3 core enhancements)" (page 30).

Chapter 4: "Hardware-specific information" (page 93)

- CommonIO: Updated with quality improvements. See "CommonIO" (page 93).

- Hardware Enablement Bundle for HP-UX 11i v3 (HWEnable11i): Provides support for new PCI-Express I/O adapters in HP Integrity Servers, and HP-UX support for HP servers using PA8900 processors or latest Intel Itanium processors. Also includes new HP-UX 11i v3 patches for support of newer HP Integrity systems with new Core I/O and chipsets, as well as new patches for newer I/O adapters and improvements for newer platforms. See "Hardware Enablement Bundle for HP-UX 11i v3" (page 93).

- **New:** HP Insight Control power management: A component of HP Insight Control, it is an HP Systems Insight Manager (HP SIM) plug-in application that provides centralized monitoring and control of server power consumption and thermal output, sets power regulation policies for groups of servers, and optimizes and controls usage of data center power and cooling facilities. Newly added as an optional product. See "HP Insight Control power management" (page 94).

- **New:** Mass Storage Stack: Storage manageability is enhanced with the new hardware path aliasing feature. See "Mass Storage Stack" (page 96).

- "Networking and mass storage drivers" (page 97)
    - 10GigEthr-00: Updated with quality improvements. See "10GigEthr-00" (page 97).
    - 10GigEthr-01: Updated with quality improvements. See "10GigEthr-01" (page 98).
    - 10GigEthr-02: Updated with quality improvements. See "10GigEthr-02" (page 98).
    - FibrChanl-00: Delivers defect fixes. See "FibrChanl-00 (td) Fibre Channel Mass Storage Driver for HP-UX 11i v3 " (page 102).
    - FibrChanl-01: Updated with quality improvements. See "FibrChanl-01 (fcd) Fibre Channel Mass Storage Driver" (page 103).
    - FibrChanl-02: Updated with quality improvements. See "FibrChanl-02 (fclp) Fibre Channel Mass Storage Driver" (page 103).
    - GigEther-01: As part of the performance improvements in RC scripts for improved reboot time, the Igelan RC script has been enhanced for reducing the time it takes in start-up path. See "GigEther-01" (page 98).
    - IB4X-00: Delivers defect fixes. See "IB4X-00 Driver for Infiniband" (page 100).
    - IEther-00: Updated with quality improvements. See "IEther-00" (page 99).
    - RAID-01: Updated with quality improvements. See "RAID-01" (page 101).
    - SerialSCSI-00: Updated with quality improvements. See "SerialSCSI-00" (page 101).

- HP Instant Capacity: Version B.11.31.09.03.00 delivers defect fixes. See "HP Instant Capacity" (page 105).

- The iCAP Manager: Version A.6.0.0. provides additional detail in the core-activation wizard messages, in addition to fixes for internally found defects. See "iCAP Manager" (page 105).

Chapter 5: "General system administration" (page 107)

- Boot time improvement (RCEnhancement): Supported by new patches in the FEATURE11i bundle, as well enhancement of several OE products. See "Boot time improvement (RCEnhancement)" (page 107).

- Dynamic Root Disk: Version B.11.31.A.3.5.x introduces the ability to synchronize the clone with the running system. See "Dynamic Root Disk (DRD)" (page 108).

- Electronic delivery of HP-UX 11i v3: In March 2010, electronic delivery of HP-UX 11i v3 includes Americas, Europe, Middle East, and Asia. See "Electronic delivery of HP-UX 11i v3" (page 109).

- EMSWeb: Delivers defect fixes. See "EMSWeb" (page 109).

- Event Monitoring Services: Delivers defect fixes. See "Event Monitoring Services (EMS)" (page 109).

- Feature Enablement Patch Bundle (FEATURE11i): Updated with patches that enhance or provide new core features (including performance improvements) and enable support for improved boot time. Includes performance improvements in scheduling, long password enhancement, Internationalization improvements, and many other enhancements. See "Feature Enablement Patch Bundle (FEATURE11i)" (page 110).

- High Availability Monitors: Upgraded to A.04.20.31.05 to support the update of Event Monitoring Service (EMS). See "High Availability Monitors" (page 111).

- HP Caliper performance analyzer: Version 5.2 delivers several enhancements, including PMU services library (hpmlib) enhancements to support JVM and SAX requirements; pstack-like functionality from caliper cstack; cstack usability improvements - selective kernel stack unwinding; and more. See " HP Caliper performance analyzer" (page 111).

- HP Caliper (HP ktracer): Includes improved system reliability while running ktracer; support for kernel tracing on new Integrity platforms; easier selection of functions; trace reports that can show more parameters, providing greater insight to system activity. See "HP Caliper (HP ktracer)" (page 112).

- HP GlancePlus Pak: Version 4.70 is unchanged on OE media. Version 5.00 is available on the Application Software media and includes the following: RCEnhancement feature, which can improve boot time; clients to access data locally and remotely using new perfd daemon; changes to support of other products and modes of data communication. See "HP GlancePlus Pak" (page 113).

- "HP Partitioning and Virtual Server Environment" (page 114)
  - Accelerated Virtual I/O (AVIO): AVIO LAN – Includes defect fixes and added support for Guest VLANs (on Integrity VM 4.2 systems). HostAvioLan bundle now delivered only in the VSE-OE and DC-OE. AVIO Storage – Includes defect fixes. HostAvioStor bundle now delivered only in the VSE-OE and DC-OE. See "Accelerated Virtual I/O (AVIO)" (page 115).
  - AppDiscAgent: Version A.6.0.0 incorporates defect fixes. See "Application Discovery (AppDiscAgent)" (page 116).
  - HP Global Workload Manager (gWLM) and HP-UX Workload Manager Toolkits (WLM-TK): Updated to support newer HP Integrity servers.
  - HP Insight Dynamics - VSE for Integrity: The following components have been updated. For details, see "HP Insight Dynamics - VSE for Integrity" (page 117).
    - Application Discovery
    - HP Insight Capacity Advisor
    - HP Insight Global Workload Manager (gWLM)
    - HP Instant Capacity (iCAP) Manager

- HP Integrity Virtual Machines Manager (VM Manager)
- HP Insight Virtualization Manager
- Virtual Server Environment Configuration Assistant (`vseassist`)
- HP Global Workload Manager Agent LTU
- HP Virtualization Manager for HP-UX LTU
- HP Capacity Advisor for HP-UX LTU
- HP VSE Suite for HP-UX 11i LTU

- HP Integrity Virtual Machines (Integrity VM): Version 4.2 includes several features, including the ability to automatically start virtual machines with the start type "Auto"; Online VM migration with shared LVM backing stores; support for additional guests; expanded AVIO support; ability to migrate an Integrity Virtual Machine from a source VM Host to a target VM Host without service interruption; and much more. See "HP Integrity Virtual Machines (Integrity VM)" (page 119)

- HP Integrity Virtual Machines (VMGuestLib): Version 4.2 includes support for the new features of HP Integrity Virtual Machines V4.2, which supports HP-UX 11i v3 as a VM Host. See "HP Integrity Virtual Machines (VMGuestLib)" (page 121).

- HP Integrity Virtual Machines (VMGuestSW): Updated to include in the V4.2 versions of VMProvider and VMGuestLib. See "HP Integrity Virtual Machines (VMGuestSW)" (page 121).

- HP Integrity Virtual Machines (VMKernelSW): No longer sets the *base_pagesize* on the VM host. See "HP Integrity Virtual Machines (VMKernelSW)" (page 122).

- HP Integrity Virtual Machines Manager: Extends management capabilities to include migration of virtual machines from one host to another, enhanced support for virtual machines configured as Serviceguard packages, creating a file as a virtual storage device that backs a disk, and removing I/O devices from a virtual machine. See "HP Integrity Virtual Machines Manager" (page 122).

- HP Integrity Virtual Machines Provider (VMProvider): Upgrade to V4.2 supports the new features of HP Integrity Virtual Machines V4.2, including support for Online VM Migration. See "HP Integrity Virtual Machines Provider (VMProvider)" (page 124).

- HP-UX nPartition Configuration Commands: Delivers fixes for internally found defects. See "HP-UX nPartition Configuration Commands" (page 124).

- HP-UX Virtual Partitions: You can now put the monitor bootpath at the beginning of the EFI Boot Manager menu so that, on the next boot, you will be able to do an unattended boot from the changed bootpath. You will also be able to see from the monitor prompt the default boot path from which the monitor has booted. Bundle changed from `T1335CC` to `T1335DC`. See "HP-UX Virtual Partitions" (page 125).

- **New:** Integrity VM Online Migration Software (OVMM): Provides support for online migration of Integrity Virtual Machines from one VM Host to another VM Host without service interruption. Newly added as optional software in VSE-OE and DC-OE. Bundle `T8718AC`. See "Integrity VM Online Migration Software (OVMM)" (page 126).

- Partition Manager: Delivers fixes for internally found defects. See "Partition Manager (parmgr)" (page 127).

- Utilization Provider for HP-UX 11i v3: Updated to version A.01.08.04.01 to support HP Insight Dynamics version 6.0. See "Utilization Provider" (page 128).

- vPar Provider: Provides a defect fix and a new property that obtains the virtual partition ID. See "vPar Provider" (page 128).

- HP Serviceguard NFS Toolkit: Version A.11.31.05 delivers defect fixes. See "HP Serviceguard NFS Toolkit" (page 129).

- HP System Management Homepage: Provides information about the actions performed on HP SMH. CLI now available. See "HP System Management Homepage" (page 130).

- HP Systems Insight Manager: Version 6.0 provides enhancements in all functionality areas, including Scalability, Reporting, Firmware Updates, License Manager, Heterogeneous support, and other changes. See "HP Systems Insight Manager" (page 131).

- HP-UX Accounts for Users and Groups (ugweb): Delivers defect fixes. See "HP-UX Accounts for Users and Groups (ugweb)" (page 133).

- HP-UX Peripheral Devices Manager (pdweb): Delivers defect fixes. See "HP-UX Peripheral Devices Manager (pdweb)" (page 134).

- HP-UX Software Assistant: HTML report identifies patches included as dependencies. Improved integration with HP SIM. See "HP-UX Software Assistant" (page 135).

- Ignite-UX: Update includes cold install and recovery support for LVM 2.2 data and boot disks; ability to deploy HP-UX clients from HP Insight Orchestrator; improved instance number remapping for IO devices; and more. See "Ignite-UX" (page 136).

- **New:** Insight managed system setup wizard: Configures systems to enable them to be managed by HP Systems Insight Manager software (HP SIM) and its plug-in applications. Newly added as *optional* (optionally installed) software for all OEs. Bundle MgdSysSetupWzrd. See "Insight managed system setup wizard" (page 137).

- Logical Volume Manager: Updated to version 2.2. Introduces the logical volume snapshot, the lvmove command, boot support for new LVM layout, and more. See "Logical Volume Manager" (page 137).

- Network Interfaces Configuration and Network Services Configuration: Delivers defect fixes. See "Network Interfaces Configuration and Network Services Configuration" (page 139).

- Numeric User Group Name: Includes further enhancements to support user/group names that begin with numeric characters or that are entirely numeric. See "Numeric User Group Name" (page 140)

- Obsolescence Bundle: Now also includes MLIB, MPI, and Mozilla. See "Obsolescence Bundle" (page 142).

- Online Diagnostics: Will not be supported on newer platforms. SysFaultMgmt will be the default monitoring mode. See "Online Diagnostics" (page 143).

- Printer Management (web-based): Delivers defect fixes. See "Printer Management (web-based)" (page 144).

- PropPlus (SysMgmtPlus): Supports new and updated property pages in HP SMH. See "PropPlus (SysMgmtPlus)" (page 145).

- ProviderSvcsBase: CIM_RegisteredProfile class and CIM_ElementConformsToProfile class moved to HP WBEM Services for HP-UX. See "ProviderSvcsBase" (page 146).

- Quality Pack Patch Bundles: Updated for March 2010. See " Quality Pack Patch Bundles" (page 147).

- Software Distributor (SD): Delivers defect fixes. See "Software Distributor (SD)" (page 148).

- Software Package Builder: New policy rules are enforced for attributes while validating software package. Now requires Java 1.5 or higher version to be installed. See "Software Package Builder" (page 149).

- System Fault Management: Common Error Repository (CER) database, delivered in SFM, will be available in ProviderSvcsBase. Updated content of HP SMH property pages. See "System Fault Management " (page 149).

- Update-UX: Updated to support changes to Software Distributor. See "Update-UX and SW-GETTOOLS " (page 150).
- "WBEM services and providers" (page 151)
    ◦ HP WBEM Services for HP-UX: The output of `wbemassist` tool available in Japanese locale. Also delivers defect fixes. See "HP WBEM Services for HP-UX" (page 151).
    ◦ HP-UX WBEM Direct Attached Storage Provider (DASProvider): A new provider fetches information regarding error records logged in the `DISKPROVDB` database. A new health test functionality supports diagnosing the health of hard disks available on newer HP Integrity systems. See "HP-UX WBEM Direct Attached Storage Provider (DASProvider)" (page 152).
    ◦ HP-UX WBEM Fibre Channel Provider: A new provider fetches information regarding error records logged in the `DISKPROVDB` database. Also delivers a defect fix. See "HP-UX WBEM Fibre Channel Provider" (page 153).
    ◦ HP-UX WBEM IOTree Indication Provider: Delivers defect fixes. A new configuration file allows tuning of the polling interval. See "HP-UX WBEM IOTree Indication Provider" (page 155).
    ◦ HP-UX WBEM Kernel Providers: Delivers defect fixes. See "HP-UX WBEM Kernel Providers" (page 156).
    ◦ HP-UX WBEM RAIDSA PROVIDER: A new provider fetches information regarding error records logged in the `DISKPROVDB` database. See "HP-UX WBEM RAIDSA PROVIDER" (page 157).
    ◦ HP-UX WBEM SAS PROVIDER: A new provider fetches information regarding error records logged in the `DISKPROVDB` database. See "HP-UX WBEM SAS PROVIDER" (page 157).

Chapter 6: "Disk and file management" (page 159)

- HP-UX Disks and File Systems (`fsweb`): Delivers defect fixes and new features: the ability to create a root VG of disk layout version 2.2, as well as the ability to rebalance allocated extents for free space. See "HP-UX Disks and File Systems (fsweb)" (page 159).
- MemFS: Delivers defect fixes. See "MemFS" (page 159).
- ONCplus: Delivers defect fixes and new features: The NFS mount structure `nfs_args` is made public and asynchronous NFS Direct I/O performance is improved. See "ONCplus" (page 160).
- OnlineJFS: Delivers fixes for internally found defects. See "OnlineJFS" (page 161).
- Veritas File System (VxFS): Delivers fixes for internally found defects. See "Veritas File System (VxFS)" (page 162).
- Veritas Volume Manager (VxVM): Delivers fixes for internally found defects. See "Veritas Volume Manager (VxVM)" (page 163).

Chapter 7: "Internet and networking" (page 164)

- Firefox and Thunderbird: Firefox is unchanged in the March 2010 OEUR. Thunderbird 2.0.0.19.02 includes changes from the Mozilla Foundation, as well as fixes for several security vulnerabilities reported by the Mozilla Foundation. `FIREFOXsrc` has been removed from the OE. Mozilla is no longer supported by HP-UX 11i v3. See "Firefox and Thunderbird" (page 164).
- HP CIFS Server: Supports Windows Server 2008 and Windows Vista operating systems. Dynamic DNS update option is available. Defect fixes are made. See "HP CIFS Server" (page 165).
- **New:** HP-UX Directory Server (HPDS): Version B.08.10.01 replaces the Red Hat Directory Server for HP-UX (RHDS) product line. Several enhancements improve manageability of users and ease of administration of Directory Server. See "HP-UX Directory Server" (page 166).

- HP-UX Mail Server (Sendmail): Delivers defect fixes. See "HP-UX Mail Server (Sendmail)" (page 167).
- "HP-UX Web Server Suite" (page 167)
  - HP-UX Apache-based Web Server: Updated to v.2.0.59.12 as primarily a security/bug fix release. See "HP-UX Apache-based Web Server" (page 168).
  - HP-UX Tomcat-based Servlet Engine: Upgraded to 5.5.27.03. Implements the Servlet 2.4 and JavaServer Pages 2.0 specifications. Designed to run on JDK 1.5 (5.0) and later versions. See "HP-UX Tomcat-based Servlet Engine" (page 169).
- IPv6 Upgrade for HP-UX 11i v3: Version B.11.31.0907 provides Advanced Sockets API for IPv6, Configurable Policy Table support, and Anycast Address support. See "IPv6 Upgrade for HP-UX 11i v3" (page 169).

Chapter 8: "Security" (page 171)

- HP-UX Auditing and Security Attributes Configuration (`secweb`): Delivers defect fixes. See "HP-UX Auditing and Security Attributes Configuration (secweb)" (page 171).
- HP-UX Bastille and Install-Time Security: Provides improved usability through assessment reporting that evaluates the security status of the system. See "HP-UX Bastille and Install-Time Security" (page 171).
- HP-UX IPFilter: Version 17 provides Rate Based Filtering, Address Pooling, State Aging, Rule Tags, Sticky NAT Sessions, Checking Connection Health with l4check, and more. See "HP-UX IPFilter" (page 173).
- **New:** HP-UX LongPassword for HP-UX 11i v3: Increases the maximum password length to 255 characters. Only available on HP-UX 11i v3 systems with shadowed passwords. Newly added as *optional* (optionally installed) software. See " HP-UX LongPassword for HP-UX 11i v3" (page 173).
- HP-UX Role-Based Access Control (RBAC): Version B.11.31.05 enhances logging capability with keystroke and alternate logging. See "HP-UX Role-Based Access Control (RBAC)" (page 174).
- HP-UX Secure Shell: Version A.05.30 includes new option to ensure logs are directed to `syslog` instead of `stderr`; acceptance of command-line arguments for the internal-sftp server by the *sshd_config*(5) `ForceCommand` directive; support of command-line runtime creation of the dynamic (-D) port; support for the SOCKS4A protocol; support of remote port-forwarding with a listen port 0; and more. See "HP-UX Secure Shell" (page 175).
- HP-UX Software Assistant: Improved integration with HP SIM. See "HP-UX Software Assistant" (page 176).
- OpenSSL: Delivers defect fixes. See "OpenSSL" (page 177).
- Kerberos Client: Version E.1.6.2.05 provides thread safety for Kerberos libraries; new client commands for copying and deleting service tickets; new functions that are needed for NFSv4; ability to load extension modules at run-time; and more. See "Kerberos Client" (page 178).

Chapter 9: "Commands and system calls" (page 180)

- *machinfo*(1) command: New option in *machinfo*(1) provides an easy way to verify the operating system's view of the amount of interleaved memory configured. See "machinfo(1) command" (page 180).
- **New:** MountallEnh: Enables machines with a large number of mounted filesystems to boot-up faster. See "MountallEnh" (page 180).
- PAX-ENH: Version 11.31.09 delivers defect fixes. See "PAX-ENH" (page 181).

- **New:** SAR-MEMFS-ENH: Enables you to obtain MemFS data with the *sar*(1M) command. Added as *optional* (optionally installed) software in all OEs. See "SAR-MEMFS-ENH" (page 181).

- **New:** *trufgrep*(1) command performs better then *fgrep*(1) command with a more efficient algorithm. FGREPMULTPAT bundle is *optional* (optionally installed) software in all OEs. See "trufgrep(1) command" (page 182).

Chapter 10: "Libraries and programming" (page 183)

- The HP Wildebeest Debugger: Version 6.1 includes new command for searching a pattern in the memory address space; new command to unwind beyond 10000 frames; updated procedure to process the initialization file; support for automatic debugging of shared libraries; support for core file debugging of HP MITR application; support for memory debugging feature on applications using libmallocng library for heap allocation management; enhanced info shared command; and much more. See "HP WildeBeest Debugger" (page 183).

- HP-UX Linker and HP Dynamic Loader: Improved usability and performance of HP-UX Linker, HP Dynamic Loader, and particular tools from the Linker tool chain. See "HP-UX Linker and HP Dynamic Loader" (page 184).

- Java JDK/JRE for HP-UX 11i: Besides the defect and security bulletin fixes in JDK/JRE 6.0.05, GC log-rotation support is provided. JDK/JRE 5.0.18 contains defect fixes. SDK/RTE 1.4.2.x version is no longer included on the OE media. See "Java JDK/JRE for HP-UX 11i" (page 185).

- MLIB and MPI are no longer included in the HP-UX 11i v3 Operating Environments. See "MLIB and MPI" (page 186).

- **New:** Mostly Private Address Space (MPAS) application model: With this enhancement, performance of MPAS applications is increased dramatically, severalfold in some cases. See "Mostly Private Address Space (MPAS) application model" (page 186).

- Unwind Library (libunwind): Delivers defect fixes, a new API that can be used to improve the performance of self-unwinding, and more. See "Unwind Library (libunwind) " (page 187).

Chapter 11: "Internationalization" (page 189)

- There are no changes in March 2010 for the products or features that are normally documented in this chapter.

Chapter 12: "Other functionality" (page 190)

- There are no changes in March 2010 for the products or features that are normally documented in this chapter.

What is new in the HP-UX 11i v3 September 2009 release

The following summaries pertain to the HP-UX 11i v3 September 2009 release. In particular, they provide general picture of how the September 2009 release of HP-UX 11i v3 differs from the March 2009 release of HP-UX 11i v3. For further information, see the indicated chapters in the *HP-UX 11i Version 3 September 2009 Release Notes*, available in its most current version at

http://hp.com/go/hpux-core-docs

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

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

September 2009 Release Notes, Chapter 2: "Introduction to HP-UX 11i version 3"

- Software Pack (Optional HP-UX 11i v3 Core Enhancements): New products (ISOIMAGE-ENH and RCEnhancement) are available in the Operating Environments as optional products.

- HP's Green Business Technology Initiative: Previously printed books will now be delivered electronically. Additionally, documentation at http://docs.hp.com will be migrated to the BSC.

September 2009 Release Notes, Chapter 4: "Hardware-specific information"

- `CommonIO`: Updated with quality improvements.

- Hardware Enablement Bundle 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 using PA8900 processors or latest Intel Itanium processors. Includes new HP-UX 11i v3 patches for support of new tape devices using the LTO5 format. New patches were also added for future graphics adapters, along with PCIe Error Recovery, and improved support for USB devices.

- HP Instant Capacity: Updated to version B.11.31.09.02.00. Performance of GiCAP enhanced. Group Manager can now accept members with longer passwords.

- iCAP Manager: Complex names containing special characters are now displayed correctly.

- Networking and mass storage drivers
  - `10GigEthr-01` Updated with quality improvements.
  - `10GigEthr-02`: Supports future products. As a result, there are no changes that affect customer systems.
  - `FibrChanl-00`: Updated to version B.11.31.0909 to incorporate defect fixes.
  - `FibrChanl-01`: Updated with quality improvements.
  - `FibrChanl-02` Updated with quality improvements.
  - `GigEther-01`: Updated to incorporate defect fixes.
  - `IB4X-00` Driver for InfiniBand: Supports the Reliable Datagram Sockets (RDS) protocol for Oracle RAC environments. Only on AH304A and 448262-B21.
  - `IEther-00`: Updated with quality improvements.
  - `PCIMUX-00`: Updated to version B.11.31.0909 to incorporate defect fixes.
  - `RAID-01`: Updated with quality improvements.
  - **New:** `SATADVD-00`: Newly added to the OEs as a recommended (default-installed) product. Supports future products.
  - `scsiU320-00`: Updated with quality improvements.
  - `SerialSCSI-00`: Updated with quality improvements.
  - `USB-00`: Version D.11.31.0909 enables the enhanced legacy USB driver stack, with quality improvements, and added functionality which includes support for USB 2.0 high speed devices and DVD write capability.

- Mass Storage Stack: Enhanced to do intelligent congestion control in a HP Serviceguard (SG) cluster environment. Requires Serviceguard patch `PHSS_39614`.

September 2009 Release Notes, Chapter 5: "General system administration"

- Dynamic Root Disk: Includes enhancements to improve performance and provide a more robust experience.

- EMSWeb: Includes defect fixes.

- `FEATURE11i`: Includes support for improved dump time and dump analysis tools, file system enhancements including MemoryFS, performance improvements for multithreaded applications, Locality-Optimized Resource Alignment (LORA), allowing vPars users improved performance, power minimization and management enhancements, Internationalization improvements, and many other enhancements. Japanese manpage patches added.

- HP Partitioning and Virtual Server Environment
  - Accelerated Virtual I/O (AVIO): Updated to incorporate defect fixes.
  - Application Discovery agent (`AppDiscAgent`): Updated to incorporate defect fixes.

- ◦ HP Virtual Server Environment (VSE): HP Application Discovery, HP Global Workload Manager (gWLM), Instant Capacity (iCAP) Manager updated to incorporate defect fixes.
- ◦ HP-UX nPartition Configuration Commands: Introduces two new commands (`pardefault` and `pardbmgr`) on the latest Integrity Superdome systems.
- ◦ nPartition Provider: Updated to support the latest HP Integrity systems.
- ◦ Utilization Provider: Updated to version A.01.08.02.01 to support VSE Management Software and HP Insight Dynamics - VSE version 4.1 Update 1.
- ◦ vPar Provider: Now supported on HP Integrity Superdome systems. Also incorporates defect fixes.

- HP Serviceguard NFS Toolkit: Enhanced to provide Modular Package support.

- HP System Management Homepage: Now supports IPv6, Internet Explorer v8, and long-length passwords in shadow password mode. Also incorporates defect fixes.

- HP Systems Insight Manager: Includes new hardware support and enhanced providers support.

- HP-UX Accounts for Users and Groups (`ugweb`): Supports long passwords up to 255 characters when in shadow password mode.

- HP-UX Disks and File Systems (`fsweb`): With the enhancements in this version, you can now take advantage of the improvements being done in the higher versions of volume groups. Also incorporates defect fixes.

- HP-UX Kernel Configuration (`kcweb`): Incorporates defect fixes.

- HP-UX Peripheral Devices Manager (`pdweb`): Offers the capability to enable and disable SAS (Serial Attached SCSI) adapters.

- HP-UX Software Assistant: Includes improvements in the integration with HP-SIM.

- Ignite-UX: Allows NFS to replace TFTP when downloading files from the Ignite-UX server. **Guided Installation User Interface Option** has been removed.

- **New: `ISOIMAGE-ENH`**: Provided in a new DLKM module. Required to mount, read and umount the ISO Image file. Software Pack product.

- Logical Volume Manager: Includes new command (`vgmove`), enhancements to `pvmove`, and command enhancements for shared volume groups, plus support for forced deactivation.

- Network Interfaces Configuration and Network Services Configuration: Two additional attributes are included for modifying IP attributes in the NIC area.

- Online Diagnostics: Starting from September 2009, OnlineDiag will not be supported on newer platforms. System Fault Management (SysFaultMgmt) will be the default monitoring mode on both older and newer platforms. This release includes defect fixes.

- Printer Management (web-based): Updated with defect fixes.

- PropPlus (SysMgmtPlus): New command line tool, `cprop`, provides equivalent information of GUI. New "Health Test" feature is supported when ProviderSvcsBase is installed.

- ProviderSvcsBase: Provides an infrastructure for running health tests as a functionality support for WBEM Providers. Also enables the providers to update, retrieve, and archive events from postgress database.

- Quality Pack Patch Bundles: Updated for September 2009.

- **New:**: RC Enhancement (boot time improvement in HP-UX commands and `rc` scripts): By installing specific products, you may see improved boot time.

- Software Distributor: IPv6 support is enabled along with defect fixes.

- Software Package Builder: Enhanced to enforce HP-UX Packaging Policy Rules related to requisites.

- System Fault Management: Introduces new providers, includes Logviewer enhancement, new property pages, health test, and more.
- Tune-N-Tools: Added another tunable *maxssiz* to the list of kernel parameters. Added new *prebind*(1M) tool, which can be used to improve the startup time of frequently used shared executables.
- Update-UX: Updated to incorporate defect fixes. No new features or functionality in `update-ux`.
- WBEM services and providers
  - HP WBEM Services for HP-UX: Now based on OpenPegasus 2.9 source base and CIM Schema 2.17.1; a command-based troubleshooting utility, `wbemassist`, is introduced; CIM repository is now a database.
  - Direct Attached Storage Provider (DAS Provider): Requires ProviderSvcsBase product. Incorporates defect fixes.
  - HP-UX WBEM Fibre Channel Provider: Updated to incorporate a defect fix.
  - HP-UX WBEM Online Operations Service Provider: Updated to incorporate defect fixes.
  - HP-UX WBEM RAIDSA Provider: Requires ProviderSvcsBase product to be installed on Integrity systems to obtain Smart Array HBA attribute details.
  - HP-UX WBEM SAS Provider: A native indication provider is supported on the latest HP Integrity system.
  - HP-UX WBEMP-LAN Provider: Enhanced to provide additional information through HP SMH. Also incorporates defect fixes.

September 2009 Release Notes, Chapter 6: "Disk and file management"

- MemFS: New mount options added to modify the permissions and ownership of root of the file system during mount. Will eliminate the need to modify the permissions/ownership of root after every mount.
- Updated to version B.11.31.07.01 to incorporate defect fixes.
- VERITAS File System (VxFS): VxFS 5.0 is delivered as a recommended (default-installed) product. VxFS 4.1 is delivered as a required (always-installed) product.

September 2009 Release Notes, Chapter 7: "Internet and networking"

- HP CIFS Server: Updated to version A.02.04 release. Supports Windows Server 2008 and Windows Vista operating systems. Incorporates defect fixes.
- HP-UX Web Server Suite
  - HP-UX Apache-based Web Server: v.2.0.59.11 is primarily a security/bug fix release.
  - HP-UX Tomcat-based Servlet Engine: version upgrade to 5.5.27.02: Implements the Servlet 2.4 and JavaServer Pages 2.0 specifications. Designed to run on JDK 1.5 (5.0) and later versions.
- Firefox, FirefoxSrc: Updated to version 2.0.0.19. Fixes several security vulnerabilities reported by the Mozilla Foundation.

September 2009 Release Notes, Chapter 8: "Security"

- HP-UX Auditing and Security Attributes Configuration (`secweb`): Provides capability to modify and delete custom events that are set for auditing.
- HP-UX Auditing System Extensions: Provides two features: Audit Filtering Tools and Audit Reporting Tools. Includes defect fixes.
- HP-UX Host Intrusion Detection System: Version 4.3 includes only defect fixes.

- HP-UX IPSec: Version A.03.00 includes changes to the areas of IKE Policy, Authentication Record, Host and Tunnel Policy, and much more. Mobile IPv6 support and Gateway Policies are obsolete.

- HP-UX Secure Shell: Version A.05.20 is linked with OpenSSL A.00.09.8k instead of OpenSSL A.00.09.8j. Incorporates new features introduced in OpenSSH5.2p1.

- HP-UX Software Assistant: Includes improvements in the integration with HP-SIM.

- OpenSSL: Updated to incorporate defect fixes.

- PAM Kerberos: Incorporates defect fixes.

September 2009 Release Notes, Chapter 9: "Commands and system calls"

- *ioscan*(1M): The `-P` option enhanced to accept two properties: `ms_scan_time` and `physical_location`.

- *mediainit*(1): Enhanced to provide a new option, `-V`, which makes the command validate the scrub operation.

- **New:** *mincore*(2) system call: Reports on the core residency of memory pages. Will enable Independent Software Vendors (ISVs) to provide memory capacity planning tools.

September 2009 Release Notes, Chapter 10: Libraries and programming"

- Java 2 Standard Edition Platform

  ◦ JDK/JRE version 6.0.04: Update includes the Sun 6.0u12 and 6.0u13 releases functionality. Incorporates defect and security bulletin fixes. IPv6 support is improved and new flags have been added.

  ◦ JDK/JRE version 5.0.16 : Update includes the Sun 5.0u18 release functionality. Incorporates defect and security bulletin fixes. IPv6 support is improved.

  ◦ SDK/RTE version 1.4.2.22: Update includes the Sun 1.4.2_20 release functionality. Incorporates defect and security bulletin fixes.

- libc: With the new APIs added in September 2009, 32-bit applications can compute time beyond 2038.

- Perl: Version 5.8.8 incorporates defect fixes and performance improvements. Delivered from OpenSource, rather than ActiveState.

September 2009 Release Notes, Chapter 11: "Internationalization"

- **New:** Devanagari (Indic) TrueType Fonts: You can now print and display text written in Devanagari script.

- `iconv` codeset conversion: Command and APIs for the Integrity platform are updated to check the `/usr/lib/nls/iconv/config.iconv` configuration file for user or third-party application added codeset converters.

- Internationalized PostScript Printing: Supports the printing and proper shaping of Arabic, Hebrew, Thai, and Devanagari (Indic) characters.

September 2009 Release Notes, Chapter 12: "Other functionality"

- **New:** Locality-Optimized Resource Alignment (LORA): A framework for delivering ease-of-use and improved performance on HP servers with Non-Uniform Memory Architecture (NUMA). Delivered through patches in the `FEATURE11i` bundle on all OEs.

What is new in the HP-UX 11i v3 March 2009 release

The following summaries pertain to the HP-UX 11i v3 March 2009 release. In particular, they provide 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 chapters in the *HP-UX 11i Version 3 March 2009 Release Notes*, available in its most current version at

http://hp.com/go/hpux-core-docs

March 2009 Release Notes, Chapter 2: "Introduction to HP-UX 11i Version 3"

- 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.

March 2009 Release Notes, Chapter 4: "Hardware-Specific Information"

- `CommonIO`: Updated with quality improvements.

- **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.

- Hardware Enablement Bundle for HP-UX 11i v3 (`HWEnable11i`): 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.

- Mass Storage Stack: Enhancements include congestion control, server manageability, ease-of-use, and I/O performance.

- Networking and Mass Storage Drivers
  - `FibrChanl-00`: Updated to version B.11.31.0903 for a defect fix.
  - `FibrChanl-01`: Updated with quality improvements.
  - `FibrChanl-02`: Updated with quality improvements.
  - `GigEther-00`: Updated to incorporate defect fixes.
  - `GigEther-01`: Updated to incorporate defect fixes.
  - `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.
  - `IEther-00`: Updated with quality improvements.
  - `RAID-01`: Updated with quality improvements.
  - `scsiU320-00`: Updated with quality improvements.
  - `SerialSCSI-00`: Updated with quality improvements.
  - `USB-00`; Version D.11.31.0903 bundle enables the new USB 2.0 support.

- Utility Pricing Solutions
  - 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.

March 2009 Release Notes, Chapter 5: "General System Administration"

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

- 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.

- 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.

- Event Monitoring Service: Updated to incorporate defect fixes.

- 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.

- FirstBoot: Updated to support Dynamic Root Disk (DRD).

- High Availability Monitors: Updated to incorporate defect fixes.

- HP Partitioning and Virtual Server Environment
    - 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.
    - 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.
    - 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.
    - 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.
    - **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.
    - HP Integrity Virtual Machines (`VMKernelSW`): Updated in support of the Integrity VM V4.1.
    - **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.
    - 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.
    - 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.
    - 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 the VSE section.

- ◦ **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.)

- ◦ HP-UX Virtual Partitions: Includes defect fixes and will support LORA when the feature is released.

- ◦ Partition Manager: Includes a defect fix.

- ◦ 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.

- ◦ `PRMLibraries`: Version number has changed to stay in-sync with the `B3835DA` (HP PRM) bundle.

- ◦ `PRMKernelSW` Version number has changed to stay in-sync with the `B3835DA` (HP PRM) bundle.

- ◦ `PRMSIMTools`: Updated to support the new features of HP PRM.

- 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.

- HP Serviceguard NFS Toolkit: Updated to incorporate a set of defect fixes.

- 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.

- 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. For HP Systems Insight Manager V5.3 or later, HP Insight Control power management is a separately installed component.

- 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.

- HP-UX Kernel Configuration (`kcweb`): Updated to incorporate defect fixes.

- HP-UX Peripheral Devices Manager (`pdweb`): Offers additional diagnostics features for Fibre Channel (FC) adapters.

- 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.

- 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.

- 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.

- 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.

- Network Interfaces Configuration and Network Services Configuration: You can now use the HP SMH web interface for managing IPv6 neighbor discovery cache.

- 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: Updated to support new and future devices, and to incorporate defect fixes. Has new pre-requisite.

- Printer Management (web-based): Includes defect fixes.

- **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.

- **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.

- Quality Pack Patch Bundles: Updated for the March 2009 OEUR.

- Software Distributor (SD): Updated to incorporate defect fixes. Now delivered in the `SysMgmtMin` bundle instead of the `SwMgmtMin` bundle.

- Software Package Builder: Updated to incorporate defect fixes.

- 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

- Update-UX and SW-GETTOOLS: Updated to reflect defect fixes. There are no new features or functionality in `update-ux`.

- WBEM Services and Providers
  - 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.
  - **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.
  - 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.
  - 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.
  - HP-UX WBEM Kernel Providers: Boot provider supports Modify Instance feature, which enables the user to modify boot instance parameter values.
  - HP-UX WBEM Online Operations Service Provider: Updated to incorporate a defect fix.
  - 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.

- ◦ 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.
- ◦ 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.
- ◦ HP-UX WBEMP-LAN Provider: You can obtain detailed Ethernet-based LAN card properties information from the HP SMH application. And more.

March 2009 Release Notes, Chapter 6: "Disk and File Management"

- **New:** MemFS: A memory-based filesystem that provides fast access to temporary files by storing them in main memory. Software Pack product.
- 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.

March 2009 Release Notes, Chapter 7: "Internet and Networking"

- Firefox, FirefoxSrc: Updated to version 2.0.0.16. Fixes several security vulnerabilities reported by the Mozilla Foundation.
- Thunderbird, ThunderbirdSrc: Updated to version 2.0.0.16. Fixes several security vulnerabilities reported by the Mozilla Foundation.
- HP CIFS Server: Updated to 3.0¡ version A.02.03.04. Contains the security fix for CVE-2008-1105 and defect fixes.
- HP-UX Auto Port Aggregation: Supports the use of Internet Protocol over InfiniBand (IPoIB) interfaces to create failover groups (*LAN_MONITOR* mode).
- HP-UX Web Server Suite
  - ◦ HP-UX Apache-based Web Server: Updated to v.2.0.59.08 as primarily a security/bug fix release.
  - ◦ HP-UX Tomcat-based Servlet Engine: Updated to v.5.5.27.02. Implements the Servlet 2.4 and JavaServer Pages 2.0 specifications.
- Internet Services
  - ◦ HP-UX Mail Server (Sendmail): Updated to incorporate defect fixes.
  - ◦ HPUX-Nameserver (BIND): Support for RFC 4193 (Unique Local IPv6 Unicast Addresses).
- LDAP-UX Integration: Provides several fixes, plus NGROUP support and Windows 2008 Support.
- 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.

March 2009 Release Notes, Chapter 8: "Security"

- HP-UX Auditing and Security Attributes Configuration (`secweb`): Updated to incorporate defect fixes.
- 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).
- HP-UX IPFilter: Updated to version A.11.31.16. Includes performance improvements, new command option for `ipfstat`, and defect fixes.

- **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.

- HP-UX Secure Shell: Updated to version A.05.00.026. Based on OpenSSH5.1p1 and includes several new features and defect fixes.

- **New:** HP-UX Security Containment Extensions: Simplifies the configuration of application containment and enables compartment login restrictions for enhanced application stacking and workload consolidation.

- 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.

- **New:** Kerberos Client (KRB5CLIENT): Helps to provide Kerberos authentication and strong cryptography for secure communication over the network. Software Pack product.

- OpenSSL: Provides enhanced security features, additional public-key encryptions, additional hardware ENGINES. Includes defect fixes.

March 2009 Release Notes, Chapter 9: "Commands and System Calls"

- **New:** CpioCmdEnh: Can archive and extract files with UID and GID > 60K. Software Pack product.

- *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.

- *ioscan*(1M): New option can produce a compact listing which includes *alias_path* property.

- *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.

- **New:** PAX-ENH: With this enhancement, the *pax*(1) command supports backup of ACLs and usage of graph files. Software Pack product.

March 2009 Release Notes, Chapter 10: "Libraries and Programming"

- Java 2 Standard Edition Platform
  - 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.
  - 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.
  - 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.

- **New:** Libc Enhancement: Contains new APIs to get instantaneous thread time consumption statistics for bound threads.

- Perl: Has moved from ActivePerl to OpenSource Perl on HP-UX.

- pthread Library: New API, *pthread_yield*(3T), is provided. Enables the unbound thread to yield in user space (yielding between user threads).

- MallocNextGen: Applications that allocate many large blocks of size greater than 128 KB may see improved memory utilization.

March 2009 Release Notes, Chapter 11: "Internationalization"

- `iconv` Codeset Conversion: Supports more varied forms of user or third-party codeset translation tables for MFCONV.

March 2009 Release Notes, Chapter 12: "Other Functionality"

- **New:** HP-UX Parallel Umounts (`UmountallEnh`): A multi-threaded umountall feature that unmounts all or selected filesystems in parallel. Software Pack product.

- Locality-Optimized Resource Alignment (LORA): 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.

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://hp.com/go/hpux-core-docs

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 (`HWEnable11i`): 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.

- ◦ `FibrChanl-00`: Updated to incorporate defect fixes.
- ◦ `FibrChanl-01`: To see what's changed from one release to the next, see the driver's release history.
- ◦ `FibrChanl-02`: Updated to incorporate defect fixes.
- ◦ `GigEther-01`: The gigabit interface to be configured to connect at ONLY speed 1000FD 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 (`VSEMgmt`). 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 (`VSEMgmt`): Updates to components such as HP Virtualization Manager, HP Capacity Advisor, HP Integrity Virtual Machines Manager, PRMSIMTools, and more. `VSEMgmt` 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 (`ktracer`): 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.
  - HPUX-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://hp.com/go/hpux-core-docs

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 HP Insight Control power management 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.
  - `FibrChanl-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`.
  - `FibrChanl-01`: Updated to incorporate defect fixes.
  - **New:** `FibrChanl-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 HP Serviceguard Storage Management Suite Version A.02.00 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).
  - HPUX-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://hp.com/go/hpux-core-docs

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 (HWEnable11i): 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.
    - FibrChanl-00: DLKM-enabled.
    - FibrChanl-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://hp.com/go/hpux-core-docs.

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:

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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://hp.com/go/hpux-core-docs.

In addition, you may want to review the list 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 (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 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 then 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+: Obsoleted.

  ◦ 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 pf 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 `utsname` struct in the *CORE_KERNEL* segment. A workaround has been provided for applications which reversed-engineered the `core` file format and depend on `utsname` being in it. This new `core` file format is the default format.

- csh Command Line Interpreter: The non-interactive invocation of `csh` 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 `vxvmboot`. `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_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 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 CNS 11643 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 ISO 10646. 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://hp.com/go/hpux-core-docs.

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 67) 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 LCPU: 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 then 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.

- 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 the *HP-UX 11i Version 3 Release Notes* 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 pf processes). Support for large `hostname`s 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.09.07¡ 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 `utsname` struct in the *CORE_KERNEL* segment. A workaround has been provided for applications which reversed-engineered the `core` file format and depend on `utsname` being in it. This new `core` file format is now the default format.

- csh Command Line Interpreter: The non-interactive invocation of `csh` 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 vxvmboot. 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://hp.com/go/hpux-core-docs.

4 Hardware-specific information

This chapter provides information regarding supported systems and networking and mass storage drivers, as well as other information about software that is hardware related.

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.11.31.1003 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.

Hardware Enablement Bundle for HP-UX 11i v3

The Hardware Enablement Patch Bundle for HP-UX 11i v3 (`HWEnable11i`) 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 `HWEnable11i` bundle has been updated for March 2010 and provides support for new PCI-Express I/O adapters in HP Integrity Servers, and HP-UX support for HP servers using PA8900 processors or latest Intel Itanium processors. Minimal HP-UX support requires other HWE components from this OE Update release that include 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 OE Update release 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 for support of newer HP Integrity systems with new Core I/O and chipsets. New patches were also added for newer I/O adapters, along with improvements for newer 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 Web site.

For further information, refer to the following website:

- http://itrc.hp.com Select **maintenance and support for hp products**. Then, select **standard patch bundles**.

Also refer to the latest editions of the following documents, available at http://hp.com/go/hpux-core-docs:

- *HP-UX 11i v3 Installation and Update Guide*

- *Read Before Installing or Updating to HP-UX 11i v3*

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

- *HP-UX Release Notes*

Obsolescence

Not applicable.

HP Insight Control power management

HP Insight Control power management (a.k.a. "power management") is a component of HP Insight Control. It is supported on Windows, Linux, and the HP-UX 11i v3 Operating Environments. Power management is an HP Systems Insight Manager (HP SIM) plug-in application that provides centralized monitoring and control of server power consumption and thermal output, sets power regulation policies for groups of servers, and optimizes and controls usage of data center power and cooling facilities.

Newer version may be available for download:

A newer version of HP Insight Control power management may be available for download from HP. Before installing the version delivered in the March 2010 OEUR, check for the latest version available at the following location:

http://software.hp.com

HP recommends installing the latest version of the software.

Summary of Change

Power management has been newly added as an optionally installed product in all OEs. It includes the following:

- Define and execute rules for responding to environmental emergencies and other events requiring changes in data center power usage.
- Visualize the layout of devices in racks and data center floors – summarizing temperature and power consumption.
- Graphically summarize the power/thermal capacity and utilization of your power and cooling infrastructure, including warnings on potential errors, lack of redundancy and anomalous configuration/monitoring data.
- Import/export power and location configuration data from spreadsheets, and configuration management repositories.
- Graphically monitor and manage power consumption for a single c-Class enclosure, a group of c-Class enclosures, a single system/power delivery device, a group of systems/power delivery devices, or a mix of the above systems using a central user interface. Also, monitor and manage power consumption for a data center and a rack.
- Group systems logically and physically using native Systems Insight Manager collections and views grouping capabilities (for example Rack 42 or All Exchange Servers).
- Change the Power Cap setting for one or many systems at a time.
- Review CPU performance including the impact of power-saving technology.
- Chart inlet air temperature for a single system, a group of systems, a single c-Class enclosure, a group of c-Class enclosures or a mix of the above systems. View a visualization of 24-hour peak temperatures across a data center floor, and within each rack.
- Download historical data in CSV format to create customized reports.
- View dashboard analysis data, including power savings due to HP Power Regulator technology, for a single system or group of systems.
- Quickly and easily configure/change Power Regulator settings across multiple systems.

Impact

You will be able to optimize and control usage of data center power and cooling facilities.

Compatibility

There are no known compatibility issues.

Performance

There are no known performance issues.

Documentation

HP Insight Control power management website: http://hp.com/go/insightcontrol

The following documents are available at http://www.hp.com/go/insightcontrol/docs :

- *HP Insight Control power management User Guide*
- *HP Insight Software Support Matrix*

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

Storage manageability is enhanced with the new hardware path aliasing feature. This functionality requires 11.31 GIO cumulative patch `PHKL_40222`, delivered in the `FEATURE11i` bundle and also available at the IT Resource Center (http://itrc.hp.com/service/patch/patchDetail.do?patchid=PHKL_40222).

Defect fixes are also included in this release.

Impact

The hardware path name is currently represented as a long string of numbers and the delimiters "/" and ".". This name can get lengthy and is not easy to remember. By substituting an alias for all or part of the hardware path name, the length of the name can be shortened and a user-friendly name can be associated with pairs of nodes or individual nodes in the I/O tree, where each node represents a mass storage object (controller, target path, lunpath, or lun). The hardware path alias can be used as an identifier in commands including `scsimgr`, `ioscan`, `insf`, `mksf`, and `rmsf`.

Compatibility

There are no known compatibility issues.

Performance

There are no known performance issues.

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://hp.com/go/hpux-core-docs.

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

For information on the new hardware path aliasing feature, please see the white paper entitled "Hardware Path Aliasing in the Mass Storage Stack" at the same website.

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

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

- `PHKL_40383` 11.31 `esctl` cumulative patch (http://itrc.hp.com/service/patch/patchDetail.do?patchid=PHKL_40383)
- `PHKL_40384` 11.31 `esdisk` cumulative patch (http://itrc.hp.com/service/patch/patchDetail.do?patchid=PHKL_40384)
- `PHCO_40385` 11.31 `scsimgr` cumulative patch (http://itrc.hp.com/service/patch/patchDetail.do?patchid=PHCO_40385)

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 97)
- "Optional networking drivers" (page 100)
- "Required mass storage drivers" (page 100)
- "Recommended mass storage drivers" (page 102)

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://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.

10GigEthr-00

The `10GigEthr-00` bundle contains the `ixgbe` version B.11.31.1003 driver, which supports the AB287A and AD385A PCI-X 10 Gigabit Ethernet Cards.

Summary of Change

The `10GigEthr-00` driver bundle has been updated with quality improvements and 4 Tuple multi-queue support, consistent with the `ixgbe` driver used on 11.23.

Impact

The product has performance improvements.

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 *10GigEthr-00 (ixgbe) B.11.31.1003 Ethernet Driver Release Notes*. This document is available at http://docs.hp.com/ en/netcom.html.

Obsolescence

Not applicable.

10GigEthr-01

The `10GigEthr-01` bundle contains the `icxgbe` driver, which supports the AD386A PCIe 10 Gigabit Ethernet Card.

Summary of Change

The `10GigEthr-01` 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 *10GigEthr-01 (icxgbe) B.11.31.1003 Ethernet Driver Release Notes*. This document is available at http://docs.hp.com/en/netcom.html.

Obsolescence

Not applicable.

10GigEthr-02

The `10GigEthr-02` bundle contains the `iexgbe` driver, which supports the NC532m PCIe 10 Gigabit Ethernet Card.

Summary of Change

The `10GigEthr-02` 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 *10GigEthr-02 B.11.31.1003 Ethernet Driver Release Notes*. This document is available at http://docs.hp.com/en/netcom.html.

Obsolescence

Not applicable.

GigEther-01

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

Summary of Change

The March 2010 release of `GigEther-01` provides the following:

- As part of the performance improvements in RC scripts for improved reboot time, the Igelan RC script has been enhanced for reducing the time it takes in start-up path.
- The product version number is changed from B.11.31.0909 to B.11.31.1003.

Impact

See the preceding "Summary of Change."

Compatibility

There are no known compatibility issues.

Performance

There are no known performance issues.

Documentation

For information about what is new in this release, see the product-specific release notes: *GigEther-01 (igelan) Gigabit Ethernet Driver Release Notes for HP-UX 11i v3 (September 2010)*.

To view what has changed from one release to another, see *GigEther-01 Release History*.

The *GigEther-01* documents are available at http://docs.hp.com/en/netcom.html.

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

The *Ethernet System-Driver Matrix for HP-UX 11i v1, 11i v2, and 11i v3*, consists of a list of systems that use the currently supported Gigabit Ethernet drivers. This document is available at http://docs.hp.com/en/netcom.html.

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.11.31.1003 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.

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://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

Infiniband is a low latency, high bandwidth RDMA based, industry standard cluster interconnect product.

Summary of Change

Infiniband product version B.11.31.1003 has been updated to incorporate defect fixes. For details on the defect fixes, see the release notes at http://docs.hp.com/en/netcom.html

Impact

There is no impact.

Compatibility

Infiniband is supported on Itanium-based platforms and on HP-UX 11i v2 and v3.

Performance

There are no known performance issues.

Documentation

The manpages are installed in `/opt/rdma/share/man`

The related documentation for Infiniband products can be found at http://docs.hp.com/en/netcom.html

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.

RAID-01

The `RAID-01` bundle delivers the `ciss` driver, which supports the following HP Smart Array controllers: A7143A, A9890A, A9891A, AM311A (P411), AM312A (P812), P400, P700m, P800.

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.11.31.1003 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.

Obsolescence

Not applicable.

SerialSCSI-00

The `SerialSCSI-00` bundle delivers the `sasd` driver, which supports the factory-integrated internal SAS controller on certain servers. It also supports the AH303A PCIe SC44Ge Host Bus Adapter.

The `CommonIO` bundle is also required to support these controllers. For information on the `CommonIO` bundle, see "CommonIO" (page 93).

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.11.31.1003 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.

Obsolescence

Not applicable.

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://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 (td) Fibre Channel Mass Storage Driver for HP-UX 11i v3

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

This release include defect fixes.

For more information about defect fixes, see *HP PCI Tachyon TL/TS/XL2 Fibre Channel Driver Release Notes* available at http://docs.hp.com/en/netcom.html

The product version number has been changed from B.11.31.0909 to B.11.31.1003.

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 at http://docs.hp.com/en/netcom.html

Obsolescence

    Not applicable.

FibrChanl-01 (fcd) 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.

Obsolescence

    Not applicable.

FibrChanl-02 (fclp) 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) 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.

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-UX 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.

- The system firmware files, installation instructions, and release notes with detailed firmware version information can be obtained by selecting **Download Drivers and Software** at the Business Support Center website (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**.

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.

HP Instant Capacity

The HP Instant Capacity (iCAP) version B.11.31.09.03.00 software (product number `B9073BA`) provides the ability to instantly increase or decrease processing capacity on specified HP Enterprise servers.

Summary of Change

A set of defect fixes are delivered in this release.

For further information, see the *HP Instant Capacity (iCAP) Release Notes* at http://hp.com/go/virtualization-manuals.

Impact

There is no impact.

Compatibility

There are no known compatibility issues.

Performance

There are no known performance issues.

Documentation

Manpages:

- *icap*(5)
- *icapmanage*(1M)
- *icapmodify*(1M)
- *icapnotify*(1M)
- *icapstatus*(1M)
- *icapd*(1M)

Documents:

For details on the HP Instant Capacity software product, see the *Instant Capacity User's Guide* and *Release Notes* located at http://hp.com/go/virtualization-manuals.

Obsolescence

Not applicable.

iCAP Manager

The iCAP Manager product (`iCAPMgr`) version 6.0 (A.6.0.0.*x*) provides functionality to monitor and configure Instant Capacity for a single system. This product runs under HP System Management Homepage. A multi-system version of this software is also included as part of the HP Insight Dynamics - VSE for Integrity. The iCAP Manager product is included in the OEs as required (always-installed) software.

Summary of Change

Version 6.0 provides additional detail in the core-activation wizard messages, in addition to fixes for internally found defects.

Impact

You will see additional detail in the messages from the core-activation wizard.

> **NOTE:** After installing the `iCAPMgr` bundle, run the `/opt/icod/bin/icapsmhconfig -a` to configure the `iCAPMgr` product for System Management Homepage.

Compatibility

There are no known compatibility issues.

Performance

There are no known performance issues.

Documentation

Manpage: `/opt/icod/man/man1m.Z/icapsmhconfig.1m`

Obsolescence

Not applicable.

5 General system administration

This chapter presents information of particular interest to system administrators.

Boot time improvement (RCEnhancement)

The product RCEnhancement provides boot time improvement through the `PARLL-RC-ENH` fileset.

Summary of Change

The product RCEnhancement provides a new feature which executes `rc` scripts in parallel, based on the dependency information available in the dependency database, which is part of the product. The product also provides a utility/command *rcutil*(1m), which allows you to enable or disable the new feature. It also allows you to add or remove dependencies from the dependency database.

RCEnhancement has a dependency on the `rc` patch `PHCO_40198`. This patch is an enablement patch and is included in the `FEATURE11i` bundle. RCEnhancement is an optionally installed product in the OEs.

The following products have been enhanced in March 2010 to support the boot time improvement feature:

- `RCEnhancement` (Version B.11.31.1003.%01) – RC Enhancement
- `B3701AA` (Version C.05.00) – HP GlancePlus Pak
- `GigEther-01` (Version B.11.31.1003) – Gigabit Ethernet Driver
- `HPUX-MailServer` (Version C.8.13.3.4) – Sendmail 8.13.3
- `HPSIM-HP-UX` (Version C.06.00) – HP Systems Insight Manager
- `WBEMSvcs` (Version A.02.09.02) – HP WBEM Services for HP-UX

The following patches are in the `FEATURE11i` bundle and are automatically installed with the OEs.

- `PHCO_40198` – `rc` cumulative patch
- `PHNE_40406` – 11.31 *nettl*(1M) cumulative patch

You may observe improved system reboot time by installing the above products. Maximum boot time improvement may be observed by installing the entire list of products enhanced for boot time improvement feature.

Impact

You may observe improved system reboot time by installing the above products.

Compatibility

There are no known compatibility issues.

Performance

You may observe improved reboot time on systems with a higher number of processors and high memory configuration. Before you install this product on a production server, HP recommends you test this product on a test system to determine whether it improves performance.

Documentation

Manpage: *rcutil*(1M)

In addition, see the documentation for the individual products listed in the "Summary of Change." Go to http://docs.hp.com (note you may be redirected to the Business Support Center at http://hp.com/go/bizsupport).

The patch note for PHCO_40198 can be viewed at http://itrc.hp.com/service/patch/patchDetail.do?patchid=PHCO_40198. For PHNE_40406, see http://itrc.hp.com/service/patch/patchDetail.do?patchid=PHNE_40406.

Obsolescence

Not applicable.

Dynamic Root Disk (DRD)

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 to HP-UX 11i v3 March 2009 (Update 4) or later
- 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://www.hp.com/go/drd provides a product overview, download links, documentation links, and installation instructions.

Summary of Change

Version B.11.31.A.3.5.*xx* of Dynamic Root Disk introduces the ability to synchronize the clone with the running system.

Impact

You will be able to use this new feature before booting the clone.

Compatibility

There are no known compatibility issues.

Performance

There are no known performance issues.

Documentation

See the DRD website (http://www.hp.com/go/drd).

Obsolescence

Not applicable.

Electronic delivery of HP-UX 11i v3

In March 2010, the HP-UX 11i v3 electronic software delivery model includes Americas, Europe, Middle East, and Asia. Electronic delivery to Japan and China will follow later in the calendar year. The download consists of ISO images of each OE. Each ISO image is burned to DVD at the customer's site and then installed in the same manner as the physical DVDs. Electronic licenses and media are quoted and ordered from the price list in the same manner as the physical licenses and media.

EMSWeb

The EMSWeb tool (bundle `EventMonitorGUI`) available from HP SMH enables you to manage requests to monitor resources on the system. Using the EMSWeb tool you can do the following:

- Create new requests to monitor resources
- Create new requests by copying existing requests
- View requests to monitor resources
- Modify requests
- Remove requests

Summary of Change

This release of EMSWeb includes fixes for internally found defects.

Impact

This release of EMSWeb has no known customer impact.

Compatibility

There are no known compatibility issues.

Performance

There are no known performance issues.

Documentation

Help is integrated with EMSWeb.

Obsolescence

Not applicable.

Event Monitoring Services (EMS)

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

Summary of Change

This release of EMS includes fixes for internally found defects.

Impact

This release has no known customer impact.

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/ha.html:

- *Event Monitoring Service Release Notes*
- *High Availability Monitors Release Notes*
- *Using Event Monitoring Service* (user manual)
- *Using High Availability Monitors* (user manual)

Obsolescence

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

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 1003 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 boot time. These improvements include performance improvements in scheduling, long password enhancement, 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 known 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 the following website:

- http://itrc.hp.com — Select **maintenance and support for hp products**. Then, select **standard patch bundles**.

Also refer to the latest editions of the following documents, available at http://hp.com/go/hpux-core-docs:

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

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, MC/ServiceGuard) when the resources they monitor are at critical user-defined values.

Summary of Change

HA Monitors version is upgraded to A.04.20.31.05 to support the update of Event Monitoring Service (EMS) A.04.20.31.05.

Impact

This release of HA Monitors has no known customer impact.

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/ha.html:

- *Event Monitoring Service Release Notes*
- *High Availability Monitors Release Notes*
- *Using Event Monitoring Service* (user manual)
- *Using High Availability Monitors* (user manual)

Obsolescence

High Availability Monitors has been deprecated. Post HP-UX 11i v3 release, High Availability Monitors will be replaced with Web-based Enterprise Management (WBEM) based providers.

HP Caliper performance analyzer

HP Caliper is a general-purpose performance analysis tool for applications, processes, and systems. It allows you to understand the performance and execution of an application and to identify ways to improve its run-time performance.

Summary of Change

Caliper version 5.2 delivers the following:

- PMU services library (`hpmlib`) enhancements to support JVM and SAX requirements
- `pstack`-like functionality from `caliper cstack`
- `cstack` usability improvements - selective kernel stack unwinding
- `cstack` enhancements to report `mutex` holder information
- simultaneous `fprof` sampling on multiple PMU counters
- `caliper dcache` latency bucketing enhancements

Impact

To exploit the feature of blocking primitive analysis, Caliper needs a `pthread` library version 11.31_BL2009_1012_2 (or later). You can get this with cumulative patch `PHCO_40211`, which is automatically installed with the `FEATURE11i` bundle. This enhancement will be disabled if you have the old `pthread` library.

Compatibility

HP Caliper is compatible with Itanium-based platforms.

Performance

There are no known performance issues.

Documentation

- Caliper manpage (`$man caliper`)
- Caliper website (http://www.hp.com/go/caliper)
- Caliper user guide and release notes are available at the above link.
- You can view the patch note for `PHCO_40211` at http://itrc.hp.com/service/patch/patchDetail.do?patchid=PHCO_40211.

Obsolescence

Caliper will emit deprecation warnings for the following switches:

- all instrumentation measurements (`cgprof`, `fcover`, and `fcount`)
- `--module-default|include|exclude`
- `--inlines`
- `--latency-buckets`
- `--per-module-data`

HP Caliper (HP ktracer)

The HP ktracer provides HP-UX 11i kernel tracing. With it you can see exactly what's happening – fast and in-depth performance analysis.

HP ktracer is available for HP-UX 11i v3 September 2008 (Update 3) and later releases running on HP Integrity servers.

Summary of Change

The latest `ktracer` kernel changes are delivered with HP-UX 11i v3 March 2010. The latest `ktracer` commands are distributed with HP Caliper 5.2.

An HP-UX 11i v3 March 2010 patch provides fixes to `ktracer` defects, enablement of `ktracer` on newer Integrity platforms, an increased number of traceable functions, faster `ktracer` activation and deactivation, and tracing of up to 8 function parameters.

The `ktracer` command has a new option, `ktracer -e pattern`, that will trace function names which match a pattern.

The `ktracedump` command has a new option, `ktracedump -X a8`, that will report 8 function parameters on kernels that support it.

Prior HP-UX 11i v3 releases traced only 4 function parameters; `ktracedump -a` will continue to show only arg0 through arg3, consistent with previous releases.

Impact

System reliability while running `ktracer` is improved.

Kernel tracing will work on new Integrity platforms.

Selecting functions to trace becomes easier with `ktracer -e pattern`.

Trace reports can show more parameters, providing greater insight to system activity.

Compatibility

New options exist for enhanced usability and reporting, but are not the default so that compatibility is maintained.

Performance

`ktracer` enables the capture of traces in a fast manner and ensures that it does not introduce any overhead when it is not being used.

Documentation

Manpages: *ktracer*(1M) and *ktracedump*(1M)

Websites: http://hp.com/go/ktracer and http://hp.com/go/caliper

Documents: *HP Caliper Ktrace Features Guide*, available at `/opt/caliper/doc/ktrace_guide.pdf`

Obsolescence

Not applicable.

HP GlancePlus Pak

HP GlancePlus Pak, version 5.00, integrates the HP GlancePlus and HP Performance Agent for HP-UX products into a single tool to help you better manage the performance and availability of your servers.

Summary of Change

HP Performance Agent version 4.70 and HP GlancePlus version 4.70 remains unchanged on the March 2010 OE media.

HP Performance Agent version 5.00 and HP GlancePlus version 5.00 are available on the March 2010 Application Software media.

You need to manually upgrade the version 4.70 available on the March 2010 OE media to version 5.00 from March 2010 Application Software media. You also need to install patch `PACPTHP_00002` from the IT Resource Center (http://itrc.hp.com).

HP Performance Agent version 5.00 has the following features:

- Supported on HPVM versions 4.00 and 4.10.

- Includes the RCEnhancement feature; hence, when Performance Agent is installed, you may notice an improvement in the system shutdown time and boot time compared to earlier versions. For further information about this enhancement, see "Boot time improvement (RCEnhancement)" (page 107).

- Supports only http(s) data communication.

- The RPC, DCE and NCS modes of data communication are not supported.

- HP Self-Healing Services (SHS) is not supported from version 5.00 onwards.

HP GlancePlus version 5.00 has the following features:

- Supported on HPVM versions 4.00 and 4.10.

- HP Self-Healing Services (SHS) is not supported from version 5.00 onwards.

- Introduced a new daemon: `perfd`.

- Provides clients such as `cpsh`, `padv`, and `mpadv` to access data locally and remotely using `perfd`.

For more details and for the list of new metrics, please refer to the respective Release Notes available at http://h20230.www2.hp.com/selfsolve/manuals.

Please note that the format of the Release Notes is changed and there is one consolidated Release Notes for each product. The Release Notes are no longer available in `/opt/perf/ReleaseNotes/`.

Impact

See the preceding "Summary of Change."

Compatibility

There are no known compatibility issues.

Performance

There are no known performance issues.

Documentation

See the documentation of each product (GlancePlus, Performance Agent) at http://h20230.www2.hp.com/selfsolve/manuals.

Obsolescence

Not applicable.

HP Partitioning and Virtual Server Environment

HP offers a full line of hardware and software partitioning capabilities, including nPartitions, virtual partitions, and HP Integrity Virtual Machines. The HP Insight Dynamics - VSE for Integrity builds on HP partitioning products 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 HP Insight Dynamics - VSE for Integrity 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 V4.0 - V4.2 release supports Accelerated Virtual I/O (AVIO) device drivers that significantly improve Integrity VM I/O performance. All Integrity platforms are supported as of March 2010.

The Accelerated Virtual I/O solution is composed of 4 products: GuestAvioLan, HostAvioLan, GuestAVIOStor, and HostAvioStor. The March 2010 version of these products is B.11.31.1003 and is supported on Integrity VM V4.0 through V4.2

The configuration process for the AVIO devices is basically the same as the existing VIO devices with some minor differences. The device name used in the `hpvmcreate/hpvmmodify` commands for the AVIO devices are `aviolan` (or `avio_lan`) for AVIO LAN devices and `aviostor` (or `avio_stor`) for AVIO Storage devices.

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

Summary of Change

The following are changes for the AVIO LAN:

- Defect fixes and added support for Guest VLANs (on Integrity VM 4.2 systems).
- The HostAvioLan bundle is now delivered only in the VSE-OE and DC-OE.

The following are changes for the AVIO Storage:

- Defect fixes.
- The HostAvioStor bundle is now delivered only in the VSE-OE and DC-OE.

Impact

The AVIO LAN and Storage products provide significant performance improvements over the existing VIO products.

Compatibility

The AVIO products can coexist with the existing VIO products. To select the new AVIO products as your guest driver, use `aviolan` (or `avio_lan`) and `aviostor` (or `avio_stor`).

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 (fully emulated) Virtual I/O (VIO) devices.

Documentation

AVIO-specific information is included in the following areas. (The documents are available at http://hp.com/go/virtualization-manuals.)

- Manpages (`hpvmnet`, `hpvmcreate`, `hpvmmodify`, `hpvmresources`, `hpvmstatus`, and `hpvmmigrate`)
- Release Notes (*HP Integrity Virtual Machines Release Notes, Version V4.2*)

- Users Guide (*HP Integrity Virtual Machines Installation, Configuration, and Administration: Version V4.2*)
- White Paper ("HP Integrity VM Accelerated Virtual I/O Overview")

Obsolescence

Not applicable.

Application Discovery (AppDiscAgent)

Application Discovery (amgr), version A.6.0.0, 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 HP Insight Dynamics software components—Virtualization Manager, Global Workload Manager, and Capacity Advisor—to allow workloads to be defined based on discovered applications.

Summary of Change

Version A.6.0.0 of Application Discovery is available from HP Software Depot as part of HP Insight Dynamics - VSE for Integrity. The Application Discovery agent (`AppDiscAgent`) is available with the software and on the OE media.

`AppDiscAgent` **A.6.0.0**

Defect fixes have been incorporated into this release.

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

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

Impact

You will obtain more reliable behavior and data from Application Discovery agent.

Compatibility

`AppDiscAgent` A.6.0.0 requires the presence of Web-Based Enterprise Management (WBEM) services, Secure Shell (SSH), and OpenSSL for correct operation and secure data transmission. Consult the *HP Insight Dynamics - VSE 6.0: Integrity CMS Installation and Configuration Guide* for details (online at http://www.hp.com/go/insightdynamics/docs/).

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

- 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 *Application Discovery 6.0 Software: User Guide*, which is available online at http://www.hp.com/go/insightdynamics/docs/ .
- The following manpages are included for installation with the product:

- ◦ *agent_config*(1M) for controlling Application Discovery certificates from the managed node.
- ◦ *amgrd*(1M) for controlling or modifying the operation of Application Discovery agent.
- English and Japanese versions of the manpages and other documentation are included.

Obsolescence

Not applicable.

HP Insight Dynamics - VSE for Integrity

HP Insight Dynamics - VSE for Integrity (A.6.0.0) integrates with HP Systems Insight Manager to provide intelligent control of your virtualized environment from one location. HP Insight Dynamics - VSE for Integrity 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.

Newer version will be available for download:

A newer version of HP Insight Dynamics - VSE for Integrity will be available for download from HP. Before installing version A.6.0.0 from the VSE-OE or DC-OE operating environments, check for the latest version available at the following location:

https://h20392.www2.hp.com/portal/swdepot/displayProductInfo.do?productNumber=vse

HP recommends installing the latest version of the software.

Summary of Change

HP Insight Dynamics - VSE for Integrity (VSEMgmt) components are delivered as optional (selectable) products in the operating environments VSE-OE and DC-OE.

In HP Insight Dynamics - VSE for Integrity 6.0, changes were made to the installer and `initconfig` to include 64-bit CMS support, non-HP server support, and a 32-bit to 64-bit migration tool for all components.

In addition, the following components were updated for this release (A.6.0.0):

- **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 Insight Virtualization Manager software, 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 increased scalability and defect fixes.
- **HP Insight Capacity Advisor** software 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. New in this release:
  - ◦ the ability to collect utilization data from Integrity Linux standalone servers without installing an agent or provider.
  - ◦ additional metrics appearing in several new reports including cost allocation for resources on VM hosts and standalone servers, peak consumption, server populations, and consolidation candidates.
  - ◦ the ability to export most reports as Excel CSV files.
  - ◦ using industry standard benchmarks to scale CPU data when moving systems or workloads in a scenario to increase modeling accuracy.
  - ◦ enhanced wizard for creating scenarios.

- **HP Insight Global Workload Manager (gWLM)** software allows you to centrally define resource-sharing policies that you can use across multiple HP servers to increase system utilization and facilitate controlled sharing of system resources. This release provides an advanced reporting wizard and fixes for internally found defects.

- **HP Instant Capacity (iCAP) Manager** software is a web-based interface for monitoring and controlling your Instant Capacity environment. This release provides additional detail in the core-activation wizard messages, in addition to defect fixes.

- **HP Integrity Virtual Machines Manager (VM Manager)** 4.1 (A.04.10) helps you create, monitor, migrate, evaluate, and remove Integrity virtual machines and certain resources, and monitor and evaluate data and resources at the level of the VM host. With the VM Manager GUI, you can visualize resources assigned to the VM host, a specific virtual machine, or a virtual switch. This version of VM Manager includes support for HP Integrity VM 4.1 and includes the following new features:

  ◦ Support for initiating and monitoring the status of virtual machine migration (online and offline)

  ◦ Enhanced support for HP Serviceguard

  ◦ Support in the GUI for creating files on the VM host that are used as backing storage devices for virtual disks (Virtual FileDisks) on virtual machines

  ◦ Support in the GUI for removing network or storage devices from a virtual machine.

  For further information about this release of VM Manager, see .

- **HP Insight Virtualization Manager** software provides a graphical framework for visualizing systems and workloads within a virtual server environment. Hierarchical relationships between systems and their current utilization metrics can be seen in a single screen. New in this release:

  ◦ support for SLES 11 x86 standalone

  ◦ licensing non-HP servers from Dell, IBM, and Hitatchi

  ◦ ability to elevate a user to root "status" to perform operations, but using their real user name for audit purposes

  ◦ new features in the Visualization tab graphical display, including better messages and labeling, showing bays in order within an enclosure, and a hardware status icon with details

  ◦ agent installation is performed using the new managed system setup wizard. Agent installation menu options are removed.

- **Virtual Server Environment Configuration Assistant (vseassist)** helps you configure HP Insight Dynamics components and troubleshoot installation problems. New in this release:

  ◦ checks for excessive drift between time setting on CMS and managed systems

  ◦ checks for HPVM and VMProvider versions

  ◦ checks for agentless configuration

  ◦ runs `vseassist` on managed nodes without installing

  ◦ runs `ioassist` on the CMS when IO is configured

  ◦ runs `wbemassist` when available on a managed node

  ◦ checks for non-standard `ssh` port (other than 22)

- The following products have been updated to support newer HP Integrity servers:

  ◦ HP Global Workload Manager Agent LTU (`T2762AA`)

  ◦ HP Virtualization Manager for HP-UX LTU (`T2782AC`)

- ◦ HP Capacity Advisor for HP-UX LTU (T2784AC)
- ◦ HP VSE Suite for HP-UX 11i LTU (T2786AC)

Prior to installing the Insight Dynamics package, review the following documents available at http://www.hp.com/go/insightdynamics/docs/:

- *HP Insight Dynamics 6.0 Release Notes*
- *HP Insight Software 6.0 Support Matrix*
- *HP Insight Dynamics - VSE 6.0: Integrity CMS Installation and Configuration Guide*
- *HP Insight Dynamics 6.0 Getting Started Guide*

Impact

You will be able to set up and use HP Insight Dynamics - VSE for Integrity more easily to manage more systems in your data center, receiving improved feedback and enhanced data quality and reports.

Compatibility

There are no known compatibility issues.

Performance

HP Insight Dynamics - VSE for Integrity (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 HP Insight Dynamics - VSE for Integrity components.

Documentation

Manuals for HP Insight Dynamics - VSE for Integrity can be found at http://www.hp.com/go/insightdynamics/docs/.

This release also includes Japanese localization of HP Insight Dynamics - VSE for Integrity software and translation of documentation and online help.

For complete information about the full range of Insight Dynamics products, including HP Insight Dynamics - VSE for Integrity, visit http://www.hp.com/go/insightdynamics/docs/.

Obsolescence

Not applicable.

HP Integrity Virtual Machines (Integrity VM)

HP Integrity Virtual Machines 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 V4.2 supports HP-UX 11i v3 as a VM Host.

Integrity VM V4.2 is also available in the VSE-OE and DC-OE.

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

Integrity VM cannot be installed on a system that has vPars software installed. There is a check during Integrity VM installation preventing it.

Summary of Change

Several new features have been included in V4.2, including:

- Automatically start virtual machines with the start type "Auto" using the `hpvmautoboot` command.
- Online VM migration with shared logical volume (LVM) backing stores.
- Initiate an Online VM migration of a virtual machine that has been associated with a Serviceguard package.
- Display available information about storage devices assigned to a virtual machine.
- Support for the following additional guests running:
  - HP-UX 11i v3 (September 2009 and March 2010)
  - Windows Server 2008 (also known as Windows Server 2008 SP1)
- Support for enabling and disabling virtual CPUs online.
- Support for Serviceguard 11.19
- AVIO support for the following:
  - Attached device support in AVIO storage for Storage for tape, burner, and changer devices for HP-UX guests
  - Direct boot from AVIO tape device
  - AVIO networking driver for Windows Server 2003, Windows Server 2008, and Linux guests
  - Online VM Migration
  - DLKM support for HP-UX 11i v3 guest AVIO Storage driver
  - Ignite
  - VxVM backing stores
- New provider, HP Integrity VM Virtualization Provider.

For a complete list of features in V4.2, see the latest version of the *HP Integrity Virtual Machines V4.2 Release Notes* (http://hp.com/go/virtualization-manuals).

Impact

You will be able to migrate an Integrity Virtual Machine from a source VM Host to a target VM Host without service interruption.

Compatibility

There are no known compatibility issues.

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://hp.com/go/virtualization-manuals

- *HP Integrity Virtual Machines V4.2 Installation, Configuration, and Administration*
- *HP Integrity Virtual Machines V4.2 Release Notes*

Obsolescence

Not applicable.

HP Integrity Virtual Machines (VMGuestLib)

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

Summary of Change

Upgrade to Version 4.2 includes support for the new features of HP Integrity Virtual Machines V4.2. Integrity Virtual Machines V4.2 supports HP-UX 11i v3 as a VM Host.

Impact

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

Compatibility

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

Performance

There are no known performance issues.

Documentation

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://hp.com/go/virtualization-manuals

- *HP Integrity Virtual Machines V4.2 Installation, Configuration, and Administration*
- *HP Integrity Virtual Machines V4.2 Release Notes*

Obsolescence

Not applicable.

HP Integrity Virtual Machines (VMGuestSW)

VMGuestSW contains software to be installed on the supported virtual machine operating systems (Windows, HP-UX 11 iv2, HP-UX 11i v3, Red Hat Linux and SLES 10 Linux) to optimize the supported operating system to run in a virtual environment.

Summary of Change

Updated to include in the V4.2 versions of VMProvider and VMGuestLib.

Impact

There is no impact.

Compatibility

There are no known compatibility issues.

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://hp.com/go/virtualization-manuals:

- *HP Integrity Virtual Machines V4.2 Installation, Configuration, and Administration*
- *HP Integrity Virtual Machines V4.2 Release Notes*

Obsolescence

Not applicable.

HP Integrity Virtual Machines (VMKernelSW)

The VMKernelSW bundle is the Integrity VM kernel software that boots the system.

Summary of Change

VMKernelSW has been updated so that it no longer sets the `base_pagesize` on the VM host.

Impact

There is no impact.

Compatibility

There are no known compatibility issues.

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://hp.com/go/virtualization-manuals:

- *HP Integrity Virtual Machines V4.2 Installation, Configuration, and Administration*
- *HP Integrity Virtual Machines V4.2 Release Notes*

Obsolescence

Not applicable.

HP Integrity Virtual Machines Manager

HP Integrity Virtual Machines Manager 4.1 (A.04.10) 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, migrate, evaluate, and remove Integrity VM virtual machines and certain resources, and to monitor and evaluate data and resources at the level of the VM Host.

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 HP Insight Dynamics - VSE for Integrity, which runs under HP Systems Insight Manager (HP SIM).

Summary of Change

This version of HP Integrity Virtual Machines Manager includes support of HP Integrity Virtual Machines 4.1 and includes the following features:

- Support for initiating and monitoring virtual machine migration (online and offline).

- Enhanced support of HP Serviceguard, including indication of whether a virtual machine participates as an HP Serviceguard package, the name of the VM Host actively managing the virtual machine, and the name of the Integrity VM multiserver environment group (MSE).

- VM Manager can now start, restart, stop, and delete virtual machines that are configured as Serviceguard packages. VM Manager uses its ability to detect whether a virtual machine is controlled by Serviceguard and then implements the appropriate Serviceguard commands to perform the actions. In prior releases, VM Manager could not perform these actions.

- Support in the GUI for creating files on the VM Host that are used as backing storage devices for virtual disks (Virtual FileDisks) on virtual machines. In prior releases, this had to be done manually from the VM Host command line.

- Support for removing network or storage devices from a virtual machine. In prior releases, this had to be done manually from the VM Host command line.

For more information about these and additional new features, see the *HP Integrity Virtual Machines Manager 4.1 Software: User Guide* at the following location (click the **HP Insight Dynamics - VSE for Integrity** tab):

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

Impact

The product enables managers to use a simple GUI from their browser to view and manipulate Integrity VM resources on VM Hosts running HP-UX 11i v3. This release extends management capabilities to include migration of virtual machines from one host to another, enhanced support for virtual machines configured as Serviceguard packages, creating a file as a virtual storage device that backs a disk, and removing I/O devices from a virtual machine.

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 4.1 Software: User Guide*

- *HP Integrity Virtual Machines Manager 4.1 Software: Release Notes*

These documents apply to both the VM Manager product (VMMGR bundle) that runs under HP System Management Homepage (HP SMH) and the VM Manager available as part of HP Insight Dynamics - VSE for Integrity.

These documents are available from the following location (click on the HP Insight Dynamics - VSE for Integrity tab):

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

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 (VMProvider)

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

Summary of Change

Upgrade to V4.2 supports the new features of HP Integrity Virtual Machines V4.2, including support for Online VM Migration.

Impact

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

Compatibility

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

Performance

There are no known performance issues.

Documentation

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://hp.com/go/virtualization-manuals:

- *HP Integrity Virtual Machines V4.2 Installation, Configuration, and Administration*
- *HP Integrity Virtual Machines V4.2 Release Notes*

Obsolescence

Not applicable.

HP-UX nPartition Configuration Commands

The HP-UX nPartition Configuration Commands is a set of system administration commands to create, modify, and 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

This release of HP-UX nPartition Configuration Commands contains fixes for internally found defects.

Impact

There is no known customer impact.

Compatibility

There are no known compatibility issues.

Performance

The nPartition configuration commands are not performance-sensitive. The overall response time depends on WBEM stack elements and network bandwidth. Apart from this, there is no known performance issue.

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 http://hp.com/go/virtualization-manuals.

Obsolescence

Not applicable.

HP-UX Virtual Partitions

HP-UX 11i Virtual Partitions (vPars) is a powerful, flexible software that aids in co-existence of multiple workloads—each with their unique OS configuration requirements—on the same server at the same time. Using vPars, you can carve hard partitions (nPartitions) or servers into multiple virtual servers at a finer granularity than hard partitions.

vPars on HP-UX 11i v3 enables multiple instances of the HP-UX 11i v3 Operating Environment (OE) to run simultaneously on one server or within one nPartition, with each OE instance hosting its own set of applications in an isolated environment. vPars also supports a mixed HP-UX 11i v1, 11i v2, and 11i v3 vPars environment.

> ⚠ **IMPORTANT:** HP-UX Virtual Partitions (vPars) is not compatible with HP Integrity Virtual Machines (Integrity VM). The vPars and Integrity VM products cannot be installed on the same nPartition or the same virtual partition.
>
> Integrity VM cannot be installed on a system that has vPars software installed. There is a check during Integrity VM installation preventing it.

Summary of Change

This release of vPars (version A.05.06) on HP-UX 11i v3 includes the following:

- An enhancement in `mon_bootpath` command at Monitor prompt to put the monitor boot path at the beginning in the EFI boot manager menu, as well as to view the default bootpath.

- Product bundling changes: Starting with this release, HP-UX Virtual Partitions will not be delivered as part of the bundle `T1335CC`. Henceforth, only the bundle `T1335DC`, which was introduced in the HP-UX March 2009 release, will include vPars.

- Fixes to some of the customer-encountered defects.

> **NOTE:** This release of vPars does not support rp5400, rp5405, rp7400.

For more information, see the latest *HP-UX Virtual Partitions Release Notes* at http://hp.com/go/virtualization-manuals.

Impact

You can now put the monitor bootpath at the beginning of the EFI Boot Manager menu so that, on the next boot, you will be able to do an unattended boot from the changed bootpath. You will also be able to see from the monitor prompt the default boot path from which the monitor has booted.

Starting March 2010, you cannot download HP-UX Virtual Partitions from the bundle `T1335CC`. Instead, you must use the bundle `T1335DC`.

Compatibility

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

Performance

There are no known performance issues.

Documentation

vPars documents are available at http://hp.com/go/virtualization-manuals.

The vPars product is available on the Software Depot website at http://software.hp.com/portal/swdepot/displayProductsList.do?category=ISS.

Obsolescence

Not applicable.

Integrity VM Online Migration Software (OVMM)

Integrity VM Online Migration Software (OVMM) provides support for online migration of Integrity Virtual Machines from one VM Host to another VM Host without service interruption.

Summary of Change

OVMM is newly added in March 2010 as *optional* (optionally installed) software in the VSE-OE and DC-OE.

Impact

You will be able to migrate an Integrity Virtual Machine from a source VM Host to a target VM Host without service interruption.

Compatibility

There are no known compatibility issues.

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://hp.com/go/virtualization-manuals:

- *HP Integrity Virtual Machines V4.2 Installation, Configuration, and Administration*
- *HP Integrity Virtual Machines V4.2 Release Notes*

Obsolescence

Not applicable.

Partition Manager (parmgr)

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

Summary of Change

This release of Partition Manager includes fixes for internally found defects.

Impact

There is no known customer impact.

Compatibility

There is no known compatibility issue.

Performance

There is no known performance issue.

Documentation

Partition Manager documentation includes the following. Other documents can be found at http://hp.com/go/virtualization-manuals.

- Partition Manager help
- *parmgr*(1M) manpage
- *smh*(1M) manpage

Obsolescence

Not applicable.

Utilization Provider

The Utilization Provider version A.01.08.04.01 is a lightweight daemon (`utild`) that records system-utilization data on a 5-minute interval. System-utilization data includes CPU, memory, disk, and network data. This product also includes a WBEM provider for access to the utilization data.

Utilization Provider is supported on all HP Integrity and HP 9000 servers.

Summary of Change

The Utilization Provider for HP-UX 11i v3 has been updated to version A.01.08.04.01 to support HP Insight Dynamics version 6.0.

Impact

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

The data collected by Utilization Provider is used by the HP Insight Dynamics suites for Integrity, ProLiant, and non-HP servers. HP Insight Virtualization Manager, HP Insight Global Workload Manager for Integrity, and HP Insight Capacity Advisor rely on the Utilization Provider to collect data from HP-UX managed systems.

Compatibility

This version of the Utilization Provider depends on HP WBEM Services for HP-UX version A.02.07.04 or later.

Performance

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

Documentation

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

`/opt/util/mof`

For additional documentation about HP Insight Dynamics, visit http://www.hp.com/go/insightdynamics/docs.

Obsolescence

Not applicable.

vPar Provider

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

The vPar Provider always gets the data from the default virtual partition database located at `/stand/vpdb` or from the database where virtual partitions are booted from. The vPar Provider talks to the nPar Provider to get information of I/O assigned to virtual partitions and to determine

whether or not it is running on an nPar. If the nPar Provider is down, then it will not provide this information.

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

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

Summary of Change

The following changes are implemented in the current release:

- A defect is fixed.
- A new property, *VParID*, is added in *HPUX_VParPartition* class of the product. The new property obtains the virtual partition ID.

For more information about the defect fix, see *HP-UX WBEM vPartition Release Notes* (http://docs.hp.com/en/netsys.html).

Impact

There is no impact.

Compatibility

There are no known compatibility issues.

Performance

There are no known performance issues.

Documentation

The `/opt/vparprovider/doc` directory contains the product data sheet.

Product release notes are at http://docs.hp.com/en/netsys.html.

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

Serviceguard NFS Toolkit A.11.31.05 contains a set of defect fixes. For further information, see the *Serviceguard NFS Toolkit Release Notes* at http://docs.hp.com/en/ha.html.

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://docs.hp.com/en/ha.html:

- *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, Windows, and OpenVMS operating systems.

Summary of Change

This release of HP-UX SMH (version 3.1.0) supports the following:

- Automated log collection via `smhassist`
- Command Line Interface (CLI)
- `smhconfig` - provides users with administrator rights access to set values through the command line
- Facility to disable port 2301
- Logging of the activities performed on HP SMH into `syslog`
- Help page and help icon for custom menu

This release also includes fixes for internally found defects.

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

Impact

You can now use the CLI to modify configuration options, including the required security checks that allow the configuration options to be changed.

You can now obtain information about the actions performed on HP SMH. This will help in tracking the changes, and viewing information such as the user who executed the command (privilege level), as well as the date and time the command was run.

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 the product:

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

HP System Management Homepage help is included with product.

The following documents are available at http://docs.hp.com/en/netsys.html:

- *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 the HP unified server-storage management strategy. Systems Insight Manager is a hardware-level management product that supports multiple operating systems on 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 11i v1, HP-UX 11i v2, HP-UX 11i v3, and Red Hat, and SuSE Linux, Systems Insight Manager provides the basic management features of:

- System discovery and identification
- Single-event view
- Inventory data collection
- Reporting

The core Systems Insight Manager software uses WBEM to deliver the essential capabilities required to manage all HP server platforms.

Systems Insight Manager can provide systems management with plug-ins for HP clients, storage, power, and printer products. Using HP Integrity Essentials you can choose plug-in applications that deliver complete lifecycle management for your hardware assets:

- Workload management
- Capacity management
- Virtual machine management
- Partition management

Newer version will be available for download:

A newer version of HP Systems Insight Manager for HP-UX will be available for download from HP. Before installing version A.06.00.00.00.03, check for the latest version available at the following location:

http://h18013.www1.hp.com/products/servers/management/hpsim/dl_hpux.html

HP recommends installing the latest version of the software.

Summary of Change

HP SIM 6.0 introduces a series of exciting enhancements in all functionality areas:

- Scalability

  Support monitoring of 5,000 servers. This includes OS instances such as physical servers and virtual machines, but other devices such as iLO and OA are in addition to this. (For this enhancement you will need to run Systems Insight Manager in x64 native mode and supply additional memory)

- Reporting

  Standard reporting that includes tables and graphs for easier access and view of the SIM data

- Firmware Updates

  Integration with HP SUM, for agentless firmware update distribution for Onboard Administrator and Virtual Connect

- License Manager

  Many updates to License Manager for better scalability, performance and usability. Example: user can retrieve license keys from the supply chain via an XML file that can be imported into License Manager

- Heterogeneous support

  IPMI support for the ProLiant 100 series and non-HP devices Power-cycle, power-on, and power-off commands are supported

- Other changes

  System page has been enhanced to provide easier access to status information

Impact

No impact other then those previously listed.

Compatibility

For information about operating systems, hardware, swap space, and software that is supported for HP SIM 6.0 see the *HP SIM Installation and Configuration Guide for HP-UX* 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 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://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 Accounts for Users and Groups (ugweb)

The Accounts for Users and Groups (`ugweb`) tool allows you to manage user and group accounts. HP-UX Accounts for Users and Groups tool enables you to:

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

-

The Accounts for Users and Groups tool (`ugweb`) tool can be launched from the HP System Management Homepage (HP SMH), or from the HP Systems Insight Manager (HP SIM). The tool can also be launched using the `ugweb` command. The tool provides both a web-based Graphical User Interface (GUI) and Text User Interface (TUI).

Summary of Change

This release of Accounts for Users and Groups includes fixes for internally found defects.

Impact

There is no known customer impact.

Compatibility

The known compatibility issues in the 11i v3 release are as follows:

- The `/etc/sam/rmuser.excl` and `/etc/sam/rmfiles.excl` files are not supported. These files were used earlier to add users and directories that must be excluded from removal using the HP SAM application.
- UID and passwds are passed as empty strings to task customization scripts.

- Currently, users cannot use the Accounts for Users and Groups (`ugweb`) tool to add/modify passwords of NIS users when the system is configured for alternate password files in NIS + Shadow mode. Users can use appropriate commands to manipulate the passwords of NIS users.
- Templates created using the legacy SAM application will not work with the Accounts for Users and Groups tool.

Performance

There are no known performance issues.

Documentation

For additional information, see the following:

- Accounts for Users and Groups help
- *ugweb*(1M) manpage
- *smh*(1M) and *sam*(1M) manpages

Obsolescence

Not applicable.

HP-UX Peripheral Devices Manager (pdweb)

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

Peripheral Devices Manager can be used to 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.

The Peripheral Devices Manager tool provides web-based Graphical User Interface (GUI) and Text User Interface (TUI). You can start the HP-UX Peripheral Devices Manager (`pdweb`) tool from the HP System Management Homepage (HP SMH) and the HP Systems Insight Manager (HP SIM). You can also use the `pdweb` command to start Peripheral Devices Manager.

Summary of Change

This release of Peripheral Devices Manager includes fixes for internally found defects.

Impact

There is no known customer impact.

Compatibility

There are no known compatibility issues.

Performance

There are no known performance issues.

Documentation

For additional information, see the following:

- Peripheral Devices Manager help
- *pdweb*(1M) manpage
- *smh*(1M) and *sam*(1M) manpages

Obsolescence

Not applicable.

HP-UX Software Assistant

HP-UX Software Assistant C.02.30 is a tool that simplifies patch and security bulletin management on HP-UX systems. The SWA tool supersedes the now obsolete Security Patch Check (SPC), and is the HP-recommended utility for maintaining currency with HP-published security bulletins and recommended patch levels for HP-UX software.

Summary of Change

In the HTML report, patches that are included because they are dependencies are flagged as such.

The following improvements have been made in the integration of SWA with HP Systems Insight Manager (HP SIM):

- New toolbox options are available that give privileges to non-root users.
- You can now download reports to your local system.

Impact

HTML reporting, and the integration of SWA and HP SIM, have been improved.

Compatibility

There are no known compatibility issues.

Performance

There are no known performance issues.

Documentation

Manpages:

- *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 following documents are available on the Business Support Center at http://hp.com/go/swa-docs:

- *HP-UX Software Assistant Release Notes*
- *HP-UX Software Assistant System Administration Guide*

- *HP-UX Software Assistant Reference*
- *HP-UX Software Assistant Frequently Asked Questions*

Obsolescence

Not applicable.

Ignite-UX

Ignite-UX version C.7.10 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

- Cold install and recovery support for LVM 2.2 data and boot disks
- Ability to deploy HP-UX clients from HP Insight Orchestrator
- `Copy_boot_tape` has been implemented for Itanium-based systems
- Improved instance number remapping for IO devices

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.hp.com/go/ignite-ux, contains information, links to download the product, and links to documentation.

The following documents are available on the Business Support Center at http://www.hp.com/go/ignite-ux-docs:

- *Ignite-UX Administration Guide*
- *Ignite-UX Quick Start Guide*
- *Ignite-UX Custom Configuration Files*
- *Ignite-UX Reference*
- *Ignite-UX Release Notes*
- *Ignite-UX Frequently Asked Questions*
- *Ignite-UX Supported Versions*

White papers are also available at the above site.

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.

Insight managed system setup wizard

Insight managed system setup wizard configures systems to enable them to be managed by HP Systems Insight Manager software (HP SIM) and its plug-in applications.

You can start Insight managed system setup wizard using any of these methods in HP SIM:

- Select **Configure** → **Manage Systems Setup Wizard...** from the HP SIM top menu.
- Use the **Quick Launch...** menu in HP SIM.
- Click a link to managed system setup wizard on an HP SIM page. Various HP SIM pages such as the Home page and Discovery page may include a link to the wizard.

Before running managed system setup wizard, you must have discovered the target systems in HP SIM and have licenses available for the management features.

Summary of Change

With the March 2010 release of HP-UX 11i v3, Insight managed system setup wizard (the `MgdSysSetupWzrd` bundle) has been added to the following operating environments: BOE, VSE-OE, HA-OE, and DC-OE.

The `MgdSysSetupWzrd` bundle is *required* (always-installed) for VSE-OE, HA-OE, and DC-OE and is *optional* (optionally installed) for the BOE.

Impact

After you successfully complete managed system setup wizard, the target systems are configured with the management features you specify.

Compatibility

Insight managed system setup wizard is supported only on Itanium-based architectures.

Performance

There are no known performance issues.

Documentation

msswinitconfig(1M) – Configure or unconfigure the Insight managed system setup wizard, during installation or removal of the `MgdSysSetupWzrd` bundle.

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 a *required* (always-installed) Independent Software Unit (ISU) bundled with the core HP-UX product.

Summary of Change

For the March 2010 release, LVM has been updated to version 2.2. The following features are included:

- Logical volume snapshot

  A snapshot is an image of a logical volume at a specified point in time. LVM provides the snapshot feature for Version 2.2 and higher volume groups. You can create multiple snapshots for a single LVM logical volume; the maximum limit is 255 snapshots per logical volume. LVM supports the following types of snapshots:

  ◦ Fully allocated snapshot

    When a fully allocated snapshot is created, the number of extents required for the snapshot is allocated immediately, just like a normal logical volume. The data contained in the original logical volume is not copied over to these extents initially when the snapshot is created. The copying of data happens through the data unsharing process.

  ◦ Space efficient snapshot

    When a space efficient snapshot is created, you specify the number of extents that LVM needs to set aside to be used for unsharing in the future. These extents are referred to as pre-allocated extents. After the snapshot is created, you can increment the number of pre-allocated extents.

- `lvmove`

  The new `lvmove` command migrates a logical volume within a volume group, balancing a logical volume either within the existing set of physical volumes or within a new set of physical volumes in the volume group. The `lvmove` command is supported only on 2.0 and higher volume groups.

- Boot support for new LVM layout

  The March 2008 Operating Environment Update Release (OEUR) of HP-UX 11i v3 introduced a new LVM layout, Version 2.0. In the March 2010 OEUR, boot, root, swap, and dump support are added for LVM Versions 2.2 or higher.

  You can create LVM Version 2.2 bootable volume groups and you can use the `setboot` command to configure the system to boot from one of the volume group's bootable disks.

- *LVMP_CONF_PATH_NON_BOOT* configuration variable

  For Version 2.0 and higher volume groups, because of potentially large configuration backup files, the `/etc/lvmrc` file supports a new configuration variable, *LVMP_CONF_PATH_NON_BOOT*, to enable you to configure the default location for backing up the volume group configuration.

Impact

LVM snapshot support enables you to do the following:

- Use snapshots to back up the data on the logical volume without splitting the logical volume. This reduces the space requirement.
- Create snapshots faster than manually copying over multiple point in time copies of the logical volume.
- Create multiple snapshots of a logical volume. This enables you to have images of the logical volume for multiple points in time without allocating space equivalent to the entire size of the logical volume per copy.

With the new `lvmove` command, you can migrate logical volumes to higher capacity disks in a balanced manner.

Boot support for Version 2.2 and higher volume groups enables you to take advantage of LVM features and increased LVM limits only available with 2.0 and higher versions.

The Ignite-UX product in the March 2010 OEUR enables you to choose between a Version 1.0 and a Version 2.2 LVM bootable volume group. If you choose Version 2.2, you create a Version 2.2 LVM bootable volume group.

By default, a 2.2 LVM bootable volume group includes a root logical volume, containing the root filesystem for HP-UX, and a boot logical volume, containing the `/stand` boot filesystem.

You can also define a primary swap logical volume on the Version 2.2 boot volume group and one or more dump logical volumes.

The `lvlnboot` command displays the boot, root, swap, and dump logical volumes for a Version 2.2 boot volume group.

Compatibility

There are no known compatibility issues.

Performance

If a logical volume has snapshots associated with it, there might be an increase in the latencies associated with reads and writes on the original logical volume or the snapshot. The increased latency is not incurred after the data is unshared.

Documentation

For details of these enhancements and defect fixes, see the *HP-UX Logical Volume Manager and MirrorDisk/UX Release Notes*, at http://hp.com/go/hpux-core-docs

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 *lvchange*(1M), *lvcreate*(1M), *lvdisplay*(1M), *lvextend*(1M), *lvlnboot*(1M), *lvmadm*(1M), *lvmove*(1M), *lvremove*(1M), *lvrmboot*(1M), *pvcreate*(1M), *pvdisplay*(1M), *vgchange*(1M), *vgcreate*(1M), *vgdisplay*(1M), *vgimport*(1M), *vgmodify*(1M), and *vgversion*(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 Text User Interface (TUI). The two HP SMH tools that are available on installing this product are as follows:

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

Summary of Change

This release of the product includes fixes for internally found defects.

Impact

There is no known customer impact.

Compatibility

There are no known compatibility issues.

Performance

There are no known performance issues.

Documentation

For additional information, see the following:

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

Obsolescence

Not applicable.

Numeric User Group Name

Previous HP-UX releases supported user/group names with alpha-numeric characters, but they required the first character to be an alpha character.

Starting with the HP-UX 11i v3 September 2008 OEUR, the Numeric User Group Name feature removes this limitation. With this feature, it is possible to create user/group names that begin with a numeric character or that are entirely numeric.

Summary of Change

The following sub-systems have been enhanced to support numeric user/group names :

- Commands
  - *acctcom*(1M)
  - *chgrp*(1)
  - *chown*(1)
  - *getconf*(1)
  - *groupadd*(1M)
  - *groupdel*(1M)
  - *groupmod*(1M)
  - *ps*(1)
  - *useradd*(1M)

- ◦ *userdel*(1M)
  - ◦ *usermod*(1M)
- Libc *sysconf*(2)

  Applications can use *sysconf*(2) or *getconf*(1) to query if numeric user/group name is enabled.
  - ◦ The API `sysconf (_SC_EXTENDED_LOGIN_NAME)` returns:
    - – 1 - Numeric user/group name is enabled.
    - – 0 - Numeric user/group name is disabled.
  - ◦ The command `getconf EXTENDED_LOGIN_NAME` displays:
    - – 1 - Numeric user/group name is enabled.
    - – 0 - Numeric user/group name is disabled.
- File system commands
  - ◦ *edquota*(1M)
  - ◦ *mkfs_hfs*(1M)
  - ◦ *quota*(1M)
- SecureOS
  - ◦ *pwck*(1M)
  - ◦ *tsconvert*(1M)
- `libsec` library

  The following APIs have been modified to allow numeric usernames in the `/var/adm/userdb` database:
  - ◦ `userdb_read`
  - ◦ `userdb_write`
  - ◦ `userdb_delete`

Impact

The above listed products are enhanced to work with user/group names that begin with numeric characters or that are entirely numeric.

NOTE: Once the Numeric User Group Name feature is installed, removal of this feature is not recommended. This is due to the impracticality of automatically finding and removing all numeric users/groups in the system.

However, if removal of the feature is required, you must execute a manual script (provided by the product) without fail. If the product is removed without following all the recommended steps in this script, then the behavior of the system cannot be predicted.

This product is not supported on Trusted OS.

Compatibility

The changes are compatible with previous releases.

Performance

Without the Numeric User Group Name feature, a few commands assume a numeric input is a user/group ID. As a result, the ID database is searched to find the corresponding entry.

However, with this feature, the user or group name database is first searched to determine whether the numeric input is a valid user or group name. If not, the user or group ID database is searched.

This is expected behavior.

Documentation

Manpages:

- *acctcom*(1M)
- *chgrp*(1)
- *chown*(1)
- *edquota*(1M)
- *getconf*(1)
- *groupadd*(1M)
- *groupdel*(1M)
- *groupmod*(1M)
- *mkfs_hfs*(1M)
- *ps*(1)
- *pwck*(1M)
- *quota*(1)
- *sysconf*(2)
- *tsconvert*(1M)
- *useradd*(1M)
- *userdel*(1M)
- *usergroupname*(5)
- *usermod*(1M)

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

If you update from an earlier HP-UX 11i v3 OE to the HP-UX 11i v3 March 2010 OE or later, the following products will remain on the system. If you update from HP-UX 11i v2 to HP-UX 11i v3 March 2010 OE or later, these products will be removed from your system.

- MLIB Math Software library
- MPI
- Mozilla

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

Starting from September 2009 release, OnlineDiag will not be supported on newer platforms. If invoked, STM and Hardware Monitoring Request Manager (`monconfig`) utility will exit and no monitoring requests will be created.

September 2009 release onwards, System Fault Management (SysFaultMgmt) will be the default monitoring mode on both older and newer platforms. Switching between modes will not be available on newer machines.

Impact

OnlineDiag monitors will not run on newer platforms. This implies that switching to EMS mode will not be supported and STM will not be launched either. SysFaultMgmt is the only monitoring solution available on these platforms. However, on older platforms, there is no change in behavior.

Compatibility

March 2010 OnlineDiag release has placed a pre-requisite on the ProviderSvcsBase (PSB) product.

Performance

There are no known performance issues.

Documentation

- Website: Software Depot Webpage for HP-UX Diagnostics Products Collection mega bundle
  http://h20392.www2.hp.com/portal/swdepot/
  displayProductInfo.do?productNumber=DiagProdCollection

- Documents (available 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 the 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 documents at http://docs.hp.com/en/diag

- *EMS Release Notes for HP-UX 11i v3 March 2010 Release*
- *STM Release Notes for HP-UX 11i v3 March 2010 Release*

Printer Management (web-based)

The Printer Management (web-based) tool enables you to configure and manage printers on HP-UX systems. The tool 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).

The Printer Management tool 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 fixes for internally found defects.

Impact

This release of Printer Management has no known customer impact.

Compatibility

There are no known compatibility issues.

Performance

There are no known performance issues.

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`, also known as "HP-UX SMH Supplemental Functionality") 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

This release supports new and updated property pages in HP SMH (see *hpsmh*(1M)).

Support has been added for the following pages:

- Enclosure Information
- Complex-wide Info
- Partition Information
- Memory
- Processors

Impact

With this release, you can view new property pages and invoke a health test.

> **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 HP SMH connections are present for a period of time [the default is 30 minutes]).
>
> To stop HP SMH, enter the following commands at the HP-UX prompt:
>
> `#/opt/hpsmh/lbin/hpsmh stop`
>
> To start HP SMH, enter the following commands at the HP-UX prompt:
>
> `#/opt/hpsmh/lbin/hpsmh autostart` (or just access HP SMH from browser and it will automatically restart.)

Compatibility

Install HP-UX System Management Homepage 3.0 to view new property pages.

Performance

There are no known performance issues.

Documentation

- Websites: `SysMgmtPlus` product is available at the following locations:
  - For `SysMgmtPlus` product only

    https://h20392.www2.hp.com/portal/swdepot/
    displayProductInfo.do?productNumber=SysMgmtPlus

  - For HP-UX Diagnostics Products Collection mega bundle

    http://h20392.www2.hp.com/portal/swdepot/
    displayProductInfo.do?productNumber=DiagProdCollection

- Documents (available at http://docs.hp.com/en/diag):
  - *SysMgmtPlus Release Notes*
  - *ProviderSvcsBase Administrator Guide*

- Other documents: *SysMgmtPlus Readme* (`/opt/hpsmh/data/htdocs/propplus/`
  `REL-NOTES.PROPPLUS`)

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 daemon `oserrlogd` supports the following two features:

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

The ProviderSvcsBase product provides an infrastructure for running health tests as a functionality support for WBEM Providers.

The product has a database called the Common Error Repository (CER). This database contains event description for all events that can occur on an Itanium-based server. The Common Error Repository contain the following field descriptions:

- Summary
- Description
- Cause
- Actions and severity of all the errors/events that can be generated on a system.

Users can access this repository using the Error Management Technology (EMT) user interface. The EMT user interface is supported only on Itanium-based systems. For more information about the EMT user interface, see *SFM Release Notes* (http://docs.hp.com/en/diag).

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

The following change is implemented in the current release:

The CIM_RegisteredProfile class and CIM_ElementConformsToProfile class have been moved from ProviderSvcsBase to HP WBEM Services for HP-UX.

Impact

In the previous release, CER database was part of the SysFaultMgmt product. In the current release, the database is moved to ProviderSvcsBase product bundle. However, there is no change in the functionality/method to access CER.

Compatibility

This product is supported only on all HP Integrity systems. On legacy Integrity systems running HP-UX 11i v3, both `dialogd` and `oserrlogd` co-exist from March 2009.

Performance

There are no known performance issues.

Documentation

Datasheet, Release Notes, and Admin Guide are available at http://docs.hp.com/en/netsys.html.

Obsolescence

Similar functionality that has been offered by the `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

The Quality Pack patch bundles are used for the proactive update and maintenance of HP-UX systems. You should review the readme file that comes with each release of the Quality Pack prior to installation.

Compatibility

There are no known compatibility issues.

Performance

The Quality Pack has the potential to improve system performance, depending on the new and updated patches contained in each release.

Documentation

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

Also refer to the latest editions of the following documents, available at http://hp.com/go/hpux-core-docs:

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

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

This release incorporates defect fixes. For details of defect fixes, go to http://www.hp.com/go/sd.

Impact

You can continue to reliably perform software deployment operations.

Compatibility

SD remains compatible across all supported releases.

Performance

Same as previous releases.

Documentation

SD website: http://www.hp.com/go/sd

For more information on Software Distributor features and usage, see the *Software Distributor Administration Guide for HP-UX 11i v1, 11i v2, and 11i v3*, available at http://www.hp.com/go/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

The following changes are implemented in the current release:

- New policy rules are enforced for attributes while validating software package.
- SPB now requires Java 1.5 or higher version to be installed on HP-UX system.

Impact

See preceding "Summary of Change."

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.hp.com/go/spb
- The *Software Package Builder User's Guide* at http://www.hp.com/go/spb-docs

Obsolescence

Not applicable.

System Fault Management

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

Summary of Change

Starting from the March 2010 release, the Common Error Repository (CER) database, delivered in SFM, will be available in ProviderSvcsBase. For more information, see the *ProviderSvcsBase Release Notes* at http://docs.hp.com/en/diag.

The content of the following HP SMH property pages are updated:

- Enclosure Information
- Complex-wide Info
- Partition Information
- Memory
- Processors

Impact

New component information from HP SMH can be viewed.

Compatibility

March 2010 SFM release has placed a pre-requisite on the following:

ProviderSvcsCore,r>=C.03.00.xx.yy WBEMServices.WBEM-CORE,r>=A.02.09.02.xx

Performance

- Startup time of SFM is improved.
- Indication delivery time is improved

Documentation

- Software Depot Web Page for HP-UX Diagnostics Products Collection mega bundle: http://h20392.www2.hp.com/portal/swdepot/displayProductInfo.do?productNumber=DiagProdCollection

- Documents (available at http://docs.hp.com/en/diag):
  - *System Fault Management Administrator's Guide*
  - *SFM Release Notes*
  - *SFM Frequently Asked Questions (FAQs)*
  - *SFM Provider Data Sheets*
  - *SFM Patch Descriptions*
  - *SFM Tables of Versions*
  - *SFM Event Descriptions*

Obsolescence

Not applicable.

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 support changes to Software Distributor (SD). There are no new features or functionality in update-ux. For more information about SD, see "Software Distributor (SD)" (page 148).

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://hp.com/go/hpux-core-docs.

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 Distributed Management Task Force (DMTF) standard that defines both a common model (i.e., description) and protocol (i.e., interface) for monitoring and controlling a diverse set of resources.

The HP WBEM Services for HP-UX product is the HP-UX implementation of the DMTF WBEM standard.

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

Summary of Change

HP WBEM Services for HP-UX version A.02.09.02 is a minor update to the HP WBEM Services A.02.09 that was released with HP-UX 11i v2 and 11i v3 in the September 2009 OEUR. This version is based on Open Pegasus 2.9. source base and CIM Schema 2.17.1.

In this version, the output of the wbemassist tool, which is a command-based troubleshooting utility, is available in Japanese locale. Additionally, this version includes a few defect fixes.

For more information about these product changes and defect fixes in this release, see the *HP WBEM Services Version A.02.09 Release Notes*, available at http://docs.hp.com/en/netsys.html.

Impact

HP WBEM Services for HP-UX allows you to manage your HP-UX systems, providing integrated solutions that optimize a your 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)
  - *cimreparchive*(8)
  - *cimsub*(1)
- The following documents are available at http://docs.hp.com/en/netsys.html:
  - *HP WBEM Services for HP-UX Release Notes*
  - *HP WBEM Services Software Developer's Kit Release Notes*

Obsolescence

The HP WBEM Services version A.02.07.06 is the last version that is available on HP-UX 11i v1. This A.02.07.06 version was released in the September 2009 OEUR.

HP-UX WBEM Direct Attached Storage Provider (DASProvider)

The DAS Provider contains Indication and Instance providers which deliver information about the direct attached storage devices on an HP-UX 11i v3 server.

The instance provider wraps up the information provided by the STM tools (part of OnlineDiag) 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 OnlineDiag 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 the following software to be installed on the system:

- WBEM Services version A.02.09
- Prop Plus (`SysMgmtPlus`) version A.02.00.04.02
- OnlineDiag version B.11.31.06.05
- SysFaultMgmt version C.06.00.07.01

Summary of Change

The following changes are implemented in the current release:

- Indication provider is supported on both legacy and newer HP Integrity systems.
- A new provider, RecordLog Instance provider, is supported on newer HP Integrity systems. RecordLog Instance Provider is a WBEM instance provider that fetches information regarding error records logged in the `DISKPROVDB` database.
- A new health test functionality is supported for diagnosing the health of hard disks available on newer HP Integrity systems.

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's Release Notes and Datasheet is at the following location:

http://docs.hp.com/en/netsys.html

Obsolescence

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://docs.hp.com/en/diag

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

The DAS Provider will replace EMS monitors and support WEBES (WBEM support).

HP-UX WBEM Fibre Channel Provider

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

The following features are supported by the FC Provider:

- Consolidated Status Provider (CSP) feature

  This feature reports the overall health status of the FC-HBA subsystem in the managed node.

- Indication Provider (FC-IP) feature

  This feature generates indications whenever the events of interest occur in the Fibre Channel subsystems.

Summary of Change

The following changes are implemented in the current release:

- A defect is fixed and the provider version is changed from 11.31.0909 to 11.31.1003.
- Indication provider is supported on both legacy and newer HP Integrity systems.
- A new provider, RecordLog Instance provider, is supported on newer HP Integrity systems. RecordLog Instance Provider is a WBEM instance provider that fetches information regarding error records logged in the `FCPROVDB` database.

For more information about the defect fix and new features, see *HP-UX WBEM Fibre Channel Release Notes* (http://docs.hp.com/en/netsys.html).

Impact

See the preceding "Summary of Change."

Compatibility

There are no known compatibility issues.

Performance

There are no known performance issues.

Documentation

Complete information is in the Fibre Channel provider product data sheet, available at http://docs.hp.com/en/netsys.html

For more information about the SMH application, see the following documents, also available at http://docs.hp.com/en/netsys.html

HP System Management Homepage Release Notes

HP System Management Homepage Installation Guide

Obsolescence

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 documents at http://docs.hp.com/en/diag:

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

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 following indications:

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

The IOTree Indication Provider 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 (SIM), HP System Management Homepage (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 SMH webpage under the IO subsystem.

This product requires:

- WBEM services, version number A.02.07 or later, to be installed on HP-UX 11i v1, HP-UX 11i v2, and HP-UX 11i v3.
- Prop Plus (`SysMgmtPlus`), version number A.02.00.04.02, to be installed on HP-UX 11i v3 system.

Summary of Change

The following change is implemented in the current release:

The product's version number is changed from B.11.31.0903 to B.11.31.1003 to reflect defect fixes. For more information about defect fixes, see *HP-UX WBEM IOTree Indication Provider Release Notes* (http://docs.hp.com/en/netsys.html).

A new configuration file, `/var/opt/iotreeip/config/iotreeip.cfg`, is implemented to allow tuning of the polling interval.

Impact

See the preceding "Summary of Change."

Compatibility

There are no known compatibility issues.

Performance

There are no known performance issues.

Documentation

A product data sheet and Release Notes are available for IOTreeIndication provider at http://docs.hp.com/en/netsys.html.

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

Defects are fixed in the current release.

For more information about the defect fixes, see the *Kernel Providers Release Notes* available at the following location:

http://docs.hp.com/en/netsys.html

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://docs.hp.com/en/netsys.html:

- *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 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 contain indication provider (RAIDSA-IP) and consolidated status provider (RAIDSA CSP).

The product requires Prop Plus (`SysMgmtPlus`), version number A.01.00.05.01, to be installed on HP-UX 11i v3.

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:

- The product version is changed from B.11.31.0909 to B.11.31.1003.

- Indication provider is supported on both legacy and newer HP Integrity systems.

- A new provider, RecordLog Instance provider, is supported on newer HP Integrity systems. RecordLog Instance Provider is a WBEM instance provider that fetches information regarding error records logged in the `RAIDSAPROVDB` database.

Impact

See the preceding "Summary of Change."

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 the following location:

http://docs.hp.com/en/netsys.html

Obsolescence

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 documents at http://docs.hp.com/en/diag:

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

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

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 contain Indication provider (SAS-IP) and Consolidated Status provider (SAS-CSP).

This product requires:

- WBEM Services, version number A.02.07 or later to be installed on HP-UX 11i v1, HP-UX 11i v2, and HP-UX 11i v3 OS.
- Prop Plus (`SysMgmtPlus`), version number 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:

- The product version is changed from 11.31.0909 to 11.31.1003.
- Indication provider is supported on both legacy and newer HP Integrity systems.
- A new provider, RecordLog Instance provider, is supported on newer HP Integrity systems. RecordLog Instance Provider is a WBEM instance provider that fetches information regarding error records logged in the `SASPROVDB` database.

Impact

See the preceding "Summary of Change."

Compatibility

There are no known compatibility issues.

Performance

There are no known performance issues.

Documentation

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

Obsolescence

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 documents at http://docs.hp.com/en/diag:

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

6 Disk and file management

This chapter provides information on directory, file system, and disk management.

HP-UX Disks and File Systems (fsweb)

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

The Disks and File Systems tool 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 (CDFS), 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 are in the area of volume groups and physical volumes. The new features include:

- Support for higher version 2.2 of disk layout (L2)
- PV move auto-rebalance

This release also includes fixes for internally found defects.

Impact

You can now create a root VG of disk layout version 2.2. You can also rebalance allocated extents for free space.

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 help
- *fsweb*(1M), *sam*(1M), and *smh*(1M) manpages

Obsolescence

Not applicable.

MemFS

MemFS is a memory-based filesystem that provides fast access to temporary files by storing them in main memory.

Summary of Change

Version number 4.0 fixes some critical and serious defects. For further information, see QXCR1000963441 and QXCR1000941941 at the IT Resource Center (http://itrc.hp.com). Click

Search knowledge base, then select **Search by document ID** for your search mode. Enter "ttr_na-SSB_1000963441" or "ttr_na-SSB_1000941941" in the box.

Impact

This update has better quality than MemFS 2.0.

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

- `mount_memfs` manpage
- "MemFS 1.0 - A Memory-based File System on HP-UX" white paper: http://hp.com/go/hpux-core-docs
- *Memory File System (MemFS) 1.0 for HP-UX 11i v3 Administrator's Guide*: http://hp.com/go/hpux-core-docs

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.

Delivered with the March 2010 OEUR, ONCplus B.11.31.08 includes both defect fixes and new features. This version of ONCplus supports all features included in previous ONCplus versions.

New NFS Features in ONCplus B.11.31.08:

- The NFS mount structure `nfs_args` is made public.

  For more information on the usage of the structure, see the *mount_nfs*(1M) manpage.

- Asynchronous NFS Direct I/O performance improvement.

  This feature can be enabled using the following three tunables.

  ◦ *nfs3_enable_async_directio_read*

  ◦ *nfs3_enable_async_directio_write*

  ◦ *nfs3_max_async_directio_requests*

For more information on these tunables, see the "Managing NFS and KRPC Kernel Configurations in HP-UX 11i v3" white paper at http://docs.hp.com/en/netcom.html.

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://hp.com/go/softwaredepot.

Compatibility

There are no new compatibility issues with ONCplus B.11.31.08 compared with the previous version of ONCplus (B.11.31.07.01).

Performance

ONCplus B.11.31.08 supports a new feature, called "Asynchronous NFS Direct I/O performance improvement," which improves the performance.

This feature can be enabled using the following three tunables.

- *nfs3_enable_async_directio_read*
- *nfs3_enable_async_directio_write*
- *nfs3_max_async_directio_requests*

Documentation

Manpages: *mount_nfs*(1M)

Websites: 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):

- "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 Services Administrator's Guide*
- *Network Information Service (NIS) Administrator's Guide*
- *ONCplus B.11.31.08 Release Notes*

Obsolescence

Not applicable.

OnlineJFS

The `B3929FB` bundle contains the OnlineJFS product for the Veritas File System 5.0 bundle.

Summary of Change

This release of the `B3929FB` bundle includes fixes for internally found defects.

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://hp.com/go/hpux-core-docs:

- *Veritas Volume Manager 5.0 Release Notes*
- *Veritas File System 5.0 Release Notes*
- *HP Storage Management for Oracle 5.0 Release Notes*
- *Veritas 5.0 Installation Guide*

Obsolescence

Not applicable.

Veritas File System (VxFS)

The `Base-VxFS-50` bundle contains the Veritas File System 5.0 Bundle for the HP-UX operating system.

The `Base-VxTools-50` bundle contains the Veritas 5.0 Infrastructure bundle for the HP-UX operating system.

Summary of Change

This release of the `Base-VxFS-50` and the `Base-VxTools-50` bundles includes fixes for internally found defects.

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://hp.com/go/hpux-core-docs:

- *Veritas Volume Manager 5.0 Release Notes*
- *Veritas File System 5.0 Release Notes*
- *HP Storage Management for Oracle 5.0 Release Notes*
- *Veritas 5.0 Installation Guide*

Obsolescence

Not applicable.

Veritas Volume Manager (VxVM)

The `Base-VxVM-50` bundle contains the Base Veritas Volume Manager 5.0 bundle 5.0 for the HP-UX operating system.

Summary of Change

This release of the `Base-VxVM-50` bundle includes fixes for internally found defects.

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://hp.com/go/hpux-core-docs:

- *Veritas Volume Manager 5.0 Release Notes*
- *Veritas File System 5.0 Release Notes*
- *HP Storage Management for Oracle 5.0 Release Notes*
- *Veritas 5.0 Installation Guide*

Obsolescence

Not applicable.

7 Internet and networking

This chapter describes new and changed Internet and networking functionality supported by the HP-UX 11i v3 release.

Firefox and Thunderbird

The Firefox 2.0.0.19.02 browser sets a new standard for Internet browsing by providing an easier and more personal way to use the Internet.

The Thunderbird 2.0.0.19.02 e-mail application provides convenient, customizable, rich-featured e-mail access.

Product bundles are:

- FIREFOX 2.0.0.19.02
- TBIRD, TBIRDSrc 2.0.0.19.02

Summary of Change

Firefox is unchanged for the March 2010 OEUR. Version 2.0.0.19.02, originally delivered in September 2009, remains in the OEs. The Firefox 2.0.0.19.02 bundle, `FIREFOXsrc`, has been removed from the OE and is available for download at http://www.hp.com/go/firefox.

The Thunderbird version has been updated to 2.0.0.19.02; this version includes Thunderbird 2.0.0.19 changes from the Mozilla Foundation.

Impact

Thunderbird version 2.0.0.19.02 is a full-featured e-mail application that supports IMAP and POP mail protocols as well as HTML mail formatting. This version fixes several security vulnerabilities reported by the Mozilla Foundation.

For details of fixes for security vulnerabilities in Firefox and Thunderbird, see the "Known Vulnerabilities in Mozilla Products" page at http://www.mozilla.org/security/known-vulnerabilities/.

Compatibility

The open-source windowing toolkit Gnome 2.6 GTK+ libraries for HP-UX is used by Firefox and Thunderbird on both PA-RISC and Itanium-based platforms. The windowing toolkit is required for Firefox/Thunderbird.

The GTK+ 2.6 release is intended to provide support only for Firefox and Thunderbird on HP-UX 11i. This product is not supported outside Firefox and Thunderbird, and therefore it is not recommended for mission-critical or production environments.

Performance

There are no known performance issues.

Documentation

The HP-UX 11i Java website, 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

`ObsMozilla` - Obsolescence for the Mozilla browser

Mozilla is no longer supported by HP-UX 11i v3.

If you update your system from HP-UX 11i v2 to HP-UX 11i v3 March 2010, Mozilla installed at `/opt` will be removed. If you update your system from an earlier version of HP-UX 11i v3 to HP-UX 11i v3 March 2010, the version of Mozilla currently on your system will remain.

Note that Mozilla is available for (free) download from http://www.hp.com/go/Mozilla.

HP CIFS Server

The HP CIFS Server provides file sharing, printer access and authentication services to CIFS clients. The HP CIFS Server 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, Windows XP, Windows 2000, Windows 2003, Windows 2008, and Windows Vista operating systems and HP-UX systems running HP CIFS Client software.

Summary of Change

- Starting with the HP CIFS Server A.02.04 release, HP CIFS Server supports Windows Server 2008 and Windows Vista operating systems. HP CIFS server A.02.04 and above can join as a member server in the Active Directory Services (ADS) security mode to a Windows 2008 domain. Also, Windows Vista clients can now access resources (shares) of the HP CIFS Server.

- The Dynamic DNS update option is available in HP CIFS Server A.02.04.01 and above.

- Defect fixes are made.

Impact

See preceding "Summary of Change."

Compatibility

There are no known compatibility issues.

Performance

There are no known performance issues.

Documentation

For more information about CIFS, see 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:
  - *HP CIFS Server Administrator's Guide*
  - *HP CIFS Server Release Notes*
  - HP CIFS Server White Papers

Obsolescence

Not applicable.

HP-UX Directory Server

HP-UX Directory Server (HPDS) B.08.10.01 replaces the Red Hat Directory Server for HP-UX (RHDS) product line. It is based on the same open source software as RHDS and includes a straightforward migration process from RHDS.

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

Summary of Change

HP-UX Directory Server B.08.10.01 is included in the HP-UX 11i v3 March 2010 release.

This release includes the following enhancements:

- Support for LDAP via UNIX sockets
- DNA plug-in provides automatic numeric attribute assignment
- memberOf plug-in provides a list of group memberships held by each user
- Additional options for secure communication between servers
- More flexibility in schema management
- Improved Get Effective Rights operation
- More tuning for Windows synchronization
- Option to disallow unauthenticated bind operations
- Account policy plug-in provides control over inactive accounts
- Replication agreements can be prioritized

This release also contains multiple non-critical defect fixes. For a complete list, refer to the product release notes.

Impact

You can use the new features for improved manageability of users.

You can use the new features for improved ease of administration of Directory Server.

Compatibility

There are no major compatibility differences between HP-UX Directory Server B.08.10.01 and the previous release.

You can use swinstall to automatically upgrade from Red Hat Directory Server for HP-UX B.08.00, or migration scripts (/opt/dirsrv/sbin/migrate-ds-admin.pl or migrate-ds.pl) to migrate from the Red Hat Directory Server for HP-UX B.07.10 or Netscape Directory Server for HP-UX B.06.11 and B.06.21.

Performance

There are no known performance issues.

Documentation

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

HP-UX Directory Server 8.1 administrator guide

HP-UX Directory Server 8.1 installation guide

HP-UX Directory Server 8.1 release notes

HP-UX Directory Server 8.1 administration server guide

HP-UX Directory Server 8.1 configuration, command, and file reference

HP-UX Directory Server 8.1 console guide

HP-UX Directory Server 8.1 deployment guide

HP-UX Directory Server 8.1 plug-in reference

HP-UX Directory Server 8.1 schema reference

Obsolescence

Not applicable.

HP-UX Mail Server (Sendmail)

Sendmail 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 details, see the *Sendmail 8.13.3 Release Notes* (http://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://docs.hp.com:

- *Sendmail 8.13.3 Release Notes*
- *HP-UX Mailing Services Administrator's Guide*

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 168)
- "HP-UX Tomcat-based Servlet Engine" (page 169)

- HP-UX Webmin-based Admin (not updated for March 2010)
- HP-UX XML Web Server Tools (not updated for March 2010)

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.2.0.59.12 is primarily a security/bug fix release. For more information regarding the fixes, see https://h20392.www2.hp.com/portal/swdepot/displayProductInfo.do?productNumber=HPUXWSATW227.

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 168).

Obsolescence

Not applicable.

HP-UX Tomcat-based Servlet Engine

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

Summary of Change

Tomcat version upgraded to 5.5.27.03:

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 (5.0) and later versions. For more details refer the *HP-UX Web Server Release Notes*. See "Documentation" (page 168).

Impact

There is no impact.

Compatibility

There are no known compatibility issues.

Performance

There are no known performance issues.

Documentation

See "Documentation" (page 168).

Obsolescence

Not applicable.

IPv6 Upgrade for HP-UX 11i v3

Internet Protocol version 6 (IPv6) is a new generation of the Internet Protocol that is beginning to be adopted by the Internet community. IPv6 is also referred to as "IPng" (IP next generation). It provides the infrastructure for the next wave of Internet devices, such as PDAs, mobile phones, and appliances. It also provides increased connectivity for existing devices such as laptop computers.

Summary of Change

The IPv6 functionality is available as part of the core HP-UX 11i v3 operating system. Enhancements to the IPv6 functionality in the HP-UX 11i v3 operating system are available through the "IPv6Upgrade" enhancement bundle.

This release of HP-UX 11i v3 provides the following features in the IPv6Upgrade bundle (B.11.31.0907):

- RFC 3542 (Advanced Sockets API for IPv6)
- Configurable Policy Table support (as mentioned in RFC 3484)
- Anycast Address support (as mentioned in RFC 4291)

Impact

See the preceding "Summary of Change."

Compatibility

There are no known compatibility issues.

Performance

There are no known performance issues.

Documentation

The web page for IPv6 is available at http://hp.com/go/softwaredepot.

The *IPv6 Release Notes* document is available at http://docs.hp.com/en/netcom.html.

Obsolescence

Not applicable.

8 Security

This chapter covers changes and enhancements to security services.

HP-UX Auditing and Security Attributes Configuration (secweb)

The HP-UX Auditing and Security Attributes Configuration is a tool for configuring and managing security attributes, and the auditing subsystem, without having to convert the system to Trusted mode.

The software provides both a web-based graphical user interface (GUI) and a 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 release of Auditing and Security Attributes Configuration includes fixes for internally found defects.

Impact

There is no known customer impact.

Compatibility

There are no known compatibility issues.

Performance

There are no known performance issues.

Documentation

For additional information, see the following:

- Auditing and Security Attributes Configuration help
- *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/lock down tool which can be used to enhance the security of the HP-UX operating system. It provides customized lock down on a system-by-system basis by encoding functionality similar to the Bastion Host and other hardening/lock down checklists.

Bastille was originally developed by the open source community for use on Linux systems. HP has 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) version 1.0.4 adds a security step to the install/update process that allows you to run the Bastille security lock-down 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

Reporting enhancements:

To report on the overall security configuration state of a system, HP-UX Bastille offers an assessment-only mode that evaluates the security status for each hardening question, and generates a summary report for all questions. Scored assessment reports provide a concise summary of compliance against a desired standard. For example, a weights file that selects the lock-down items used with a particular industry standard can be used for comparison against the system status.

Impact

This update provides improved usability through assessment reporting that evaluates the security status of the system.

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 Bastille B.3.2.01 User Guide* (http://docs.hp.com/en/internet.html) discusses which particular Bastille settings are applied at each security level.

While general configuration and operation are unchanged from previous versions, the scope of settings/items in several modules has been expanded. In addition, the default Bastille configuration files have been updated.

For March 2010, no compatibility issues are expected.

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:

- *bastille*(1M) manpage (add `/opt/sec_mgmt/share/man/` to `MANPATH`)

- *HP-UX Bastille B.3.2.01 User Guide* at http://docs.hp.com/en/internet.html

- HP-UX Bastille website at http://www.hp.com/go/bastille

Obsolescence

Security-Patch Check is being deprecated in favor of SWA.

HP-UX IPFilter

HP-UX IPFilter version 17 is a TCP/IP packet filter suitable for use as a system firewall to protect application servers.

Summary of Change

HP-UX IPFilter v17 contains the following new features:

- Rate Based Filtering
- Address Pooling
- State Aging
- Rule Tags
- Sticky NAT Sessions
- Checking Connection Health with l4check
- Analyzing IPFilter Log Events
- Rule Groups
- Defect fixes (see the release notes for details)

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

There are no known performance issues.

Documentation

The following documents are available at http://docs.hp.com/en/internet.html:

- *HP-UX IPFilter Version 17 Release Notes*
- *HP-UX IPFilter Version 17 Administrator Guide*

Obsolescence

Not applicable.

HP-UX LongPassword for HP-UX 11i v3

HP-UX LongPassword11i3 increases the maximum password length to 255 characters.

Summary of Change

Previously released on the web, HP-UX LongPassword11i3 is newly added in March 2010 to all HP-UX 11i v3 Operating Environments as optional software.

HP-UX LongPassword11i3 increases the maximum password length from 8 to 255 characters. HP-UX LongPassword11i3 is only available on HP-UX 11i v3 systems with shadowed passwords.

Impact

The customer can now use HP-UX LongPassword11i3 together with HP-UX PHI11i3 to increase the maximum password length from 8 to 255 characters on systems with shadowed passwords.

Compatibility

- Requires HP-UX 11i version 3

- Requires also the HP-UX PHI11i3 bundle, available in the March 2009 OEUR and later releases.

- 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 the HP-UX Accounts and Management tool with HP-UX LongPassword11i3, you must install the product `UserAndGroups` B.11.31.0909, available in the September 2009 OEUR and later releases.

- The `uucpd` daemon does not work with LongPassword11i3. Do not install LongPassword11i3 if you plan to use the `uucpd` daemon.

- Some third-party applications may assume that passwords are limited to 8 characters. These applications will not function correctly with HP-UX LongPassword11i3.

Performance

There are no known performance issues.

Documentation

For further information, see the manpage *security*(4). The new version of this manpage is available in patch `PHCO_39713`, included with the HP-UX 11i v3 March 2010 OEUR.

Also see the following websites:

- Overview:

  https://h20392.www2.hp.com/portal/swdepot/
  displayProductInfo.do?productNumber=LongPassword11i3

- Installation:

  https://h20392.www2.hp.com/portal/swdepot/
  displayInstallInfo.do?productNumber=LongPassword11i3

Obsolescence

Not applicable.

HP-UX Role-Based Access Control (RBAC)

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

Summary of Change

Keystroke logging: HP-UX RBAC B.11.31.05 enhances the logging capability with keystroke logging. It provides a PAM module that you can configure to log a user's entire terminal session, or relevant parts of a session based on keyword "triggers." You can customize this keystroke logging policy to capture session logs for particular users, roles, and groups.

Alternate logging: In addition to the keystroke logging enhancements, HP-UX RBAC B.11.31.05 provides support for the logging of access control events and RBAC-invoked commands. This functionality builds on the support provided in previous versions of RBAC, with the primary difference being that it is no longer necessary to enable HP-UX auditing to generate RBAC logs. With this release, an administrator can enable RBAC logging and specify the location of the alternate logging files simply by editing the `/etc/rbac/rbac.conf` file.

Impact

HP-UX RBAC B.11.31.05 enhances logging capability with keystroke and alternate logging.

Compatibility

Installing HP-UX RBAC B.11.31.05 with the `PHCO_38583` RBAC cumulative patch will overwrite the existing HP-UX RBAC database files only if the database files have not been modified.

Performance

There are no known performance issues.

Documentation

The following documents are available at http://hp.com/go/hpux-core-docs:

- *HP-UX RBAC B.11.31.05 Release Notes*
- *HP-UX System Administrator's Guide: Security Management*

Obsolescence

Not applicable.

HP-UX Secure Shell

HP-UX Secure Shell A.05.30, based on OpenSSH 5.2p1, offers transparent encrypted security for HP-UX 11i v2 and HP-UX 11i v3. The client/server architecture supports the SSH-1 and SSH-2 protocols and provides secured remote login, file transfer, and remote command execution.

HP-UX Secure Shell uses hashing to ensure data integrity and provides secure tunneling features, port forwarding, and an SSH agent to maintain private keys on the client. HP-UX Secure Shell supports several authentication methods and schemes, including the following:

- Kerberos5/GSSAPI
- Public Key
- Host-based
- Keyboard-interactive
- password

The following lists the versions of HP-UX Secure Shell on HP-UX 11i v2 and HP-UX 11i v3:

- A.05.30.008 - HP-UX 11i v2
- A.05.30.009 - HP-UX 11i v3

Summary of Change

The following new features are introduced in OpenSSH5.2p1. HP-UX Secure Shell version A.05.30 is based on OpenSSH5.2p1 and include the following new features:

- Secure Shell 5.3 is linked with OpenSSL A.00.09.8k instead of OpenSSL A.00.09.8j.

- A new option is added to ensure logs are directed to `syslog` instead of `stderr`.

- The *sshd_config*(5) `ForceCommand` directive accepts command-line arguments for the internal-sftp server.

- The *ssh*(1) ~C escape command-line supports runtime creation of the dynamic (-D) port forwards.

- Secure Shell 5.3 supports the SOCKS4A protocol in *ssh*(1) dynamic (-D) forwards.

- Secure Shell 5.3 supports remote port forwarding with a listen port 0, thereby ensuring the server dynamically allocates a listen port and reports it to the client.

- *sshd*(8) supports setting `PermitEmptyPasswords` and `AllowAgentForwarding` in match blocks.

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/internet.html:

- *HP-UX Secure Shell Getting Started Guide*
- *HP-UX Secure Shell A.05.30.008 and A.05.30.009 Release Notes*

Manpages:

- *sshd_config*(5)
- *ssh_config*(5)
- *ssh*(1)

Obsolescence

Not applicable.

HP-UX Software Assistant

HP-UX Software Assistant C.02.30 is a tool that simplifies patch and security bulletin management on HP-UX systems. The SWA tool supersedes the now obsolete Security Patch Check (SPC), and is the HP-recommended utility for maintaining currency with HP-published security bulletins and recommended patch levels for HP-UX software.

Summary of Change

The following improvements have been made in the integration of SWA with HP Systems Insight Manager (HP SIM):

- You can now review past SWA reports.
- You can schedule recurring SWA analyses.
- Increased performance from prior release.
- Added support for indirect access to the Internet.

Impact

The integration of SWA and HP SIM has been improved.

Compatibility

There are no known compatibility issues.

Performance

There are no known performance issues.

Documentation

Manpages:

- *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 following documents are available on the Business Support Center at http://hp.com/go/swa-docs:

- *HP-UX Software Assistant Release Notes*
- *HP-UX Software Assistant System Administration Guide*
- *HP-UX Software Assistant Reference*
- *HP-UX Software Assistant Frequently Asked Questions*

Obsolescence

Not applicable.

OpenSSL

OpenSSL A.00.09.07m and A.00.09.08k for HP-UX is based on the Open source product OpenSSL (version 0.9.7m & 0.9.8k) which offers a general purpose cryptography library and implementation of the Secure Sockets Layer (SSL v2/v3) and Transport Layer Security (TLS v1) protocols. It is fully tested and supported on the HP-UX operating system.

OpenSSL A.00.09.08k contains the following:

- OpenSSL A.00.09.08k under `/opt/openssl/0.9.8`
- OpenSSL A.00.09.07m under `/opt/openssl/0.9.7`

Summary of Change

This release of OpenSSL is a defect-fix release and does not have any new features.

Impact

There is no impact.

Compatibility

There are no known compatibility issues.

Performance

There are no known performance issues.

Documentation

For more information, see *OpenSSL A.00.09.08k.013, A.00.09.08k.014, and A.00.09.08k.015 Release Notes* at http://docs.hp.com/en/internet.html.

Obsolescence

Not applicable.

Kerberos Client

Kerberos Client version E.1.6.2.05 helps to provide Kerberos authentication and strong cryptography for secure communication over the network.

Summary of Change

Kerberos Client version E.1.6.2.05 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: `kdeltkt`
- 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

The Kerberos Client version E.1.6.2.05 includes defect fixes. For information, see the product release notes.

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 at http://docs.hp.com/en/internet.html:

- *Kerberos Client Version E.1.6.2 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 and later:

- *kerberos*(9)
- *libkrb5*(3)
- *krb5.conf*(4)
- *kdestroy*(1)
- *kinit*(1)
- *klist*(1)
- *kpasswd*(1)
- *kvno*(1)
- *ktutil*(1)
- *kcpytkt*(1)
- *kdeltkt*(1)

Obsolescence

Not applicable.

9 Commands and system calls

This chapter provides information about new and changed commands and system calls.

machinfo(1) command

The *machinfo*(1) command in HP-UX 11i v3 prints detailed platform information. The output includes information about processors, firmware revisions, and memory.

Summary of Change

Adds new option (-m) to the *machinfo*(1) command that will print more information about the memory configuration on the system. With the -m option, machinfo will print the percentage of interleaved memory below the line that indicates system memory.

Impact

This new option in *machinfo*(1) will provide an easy way to verify the operating system's view of the amount of interleaved memory configured.

Compatibility

There are no known compatibility issues because new information is printed using a new command line option.

Performance

There are no known performance issues.

Documentation

The manpage *machinfo*(1) was updated to describe the new command line option -m.

Obsolescence

Not applicable.

MountallEnh

MountallEnh provides a parallel mount feature to reduce system boot-up time.

Summary of Change

Newly added for March 2009, the MountallEnh feature enables faster system boot-up.

Impact

MountallEnh enables machines with a large number of mounted filesystems to boot-up faster.

Compatibility

There are no known compatibility issues.

Performance

MountallEnh reduces system boot-up time.

Documentation

There is no documentation other than these *Release Notes*.

Obsolescence

Not applicable.

PAX-ENH

The PAX-ENH product enables the following options for the *pax*(1) command for HP-UX 11i v3:

- Backup of ACLs
- Usage of graph files

Summary of Change

This version of PAX-ENH (11.31.09) is updated to include defect fixes.

Impact

There is no impact.

Compatibility

There are no known compatibility issues.

Performance

There are no known performance issues.

Documentation

See the *pax*(1) manpage.

Obsolescence

Not applicable.

SAR-MEMFS-ENH

The SAR-MEMFS-ENH product provides a new option, -z, that enables the *sar*(1M) command to report MemFS data.

The -z option reports the following parameters:

- *blkcnt*

  Specifies the number of MemFS blocks in the memory.

- *swpcnt*

  Specifies the number of MemFS blocks in the swap. The number of MemFS blocks is expressed in units of 4 KB.

Summary of Change

With the March 2010 release of HP-UX 11i v3, SAR-MEMFS-ENH has been added to all OEs as an *optional* (optionally installed) product.

Impact

You can now obtain MemFS data with the *sar*(1M) command.

Compatibility

There are no known compatibility issues.

Performance

There are no known performance issues.

Documentation

For the most recent information on the SAR-MEMFS product, see the HP IT Resource Center (http://itrc.hp.com/).

Obsolescence

Not applicable.

trufgrep(1) command

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

Summary of Change

The command *trufgrep*(1) has been newly added to the HP-UX 11i March 2010 OEs as an optional (selectable) product.

Impact

With a more efficient algorithm, the *trufgrep*(1) command performs better then *fgrep*(1) command by greatly reducing the search time under certain scenarios.

Compatibility

There are no known compatibility issues.

Performance

The *trufgrep*(1) command performs better then *fgrep*(1) command with a more efficient algorithm.

Documentation

See the *trufgrep*(1) manpage.

Obsolescence

The *trufgrep*(1) command may be obsoleted in a future release.

10 Libraries and programming

This chapter covers a variety of changes of particular interest to programmers, such as changes to compilers, editors, and libraries.

HP WildeBeest Debugger

The HP Wildebeest Debugger (HP WDB) 6.1 is an HP-supported implementation of the Open Source GNU debugger (GDB). It enables you to debug C, C++, and FORTRAN applications (32-bit and 64-bit versions) on Itanium-based and PA-RISC systems.

Summary of Change

HP WDB 6.1 provides the following capabilities:

- A new command for searching a pattern in the memory address space (HP 9000 and HP Integrity systems).
- A new command to unwind beyond 10000 frames (HP 9000 and HP Integrity systems).
- An updated procedure to process the initialization file (HP 9000 and HP Integrity systems).
- Support for automatic debugging of shared libraries (HP-UX 11i v3 Integrity systems).
- Support for core file debugging of HP MITR application (HP Integrity systems).
- Support for memory debugging feature on applications using `libmallocng` library for heap allocation management (HP Integrity systems).
- Enhanced info shared command (HP 9000 and HP Integrity systems).
- Enhanced info target command (HP Integrity systems).
- Enhanced feature to attach a PA-RISC debugger to a PA-RISC process (HP Integrity systems).
- Improved performance of memory debugging for the string option (HP Integrity systems).
- Improved GDB Help to provide syntax and relevant description of all WDB commands (HP 9000 and HP Integrity systems).
- Improved disassembly output to print explicit register names (HP Integrity systems).
- Improved floating point register display to print correct names and values of floating point status and exception registers for PA-RISC 64-bit applications (HP 9000 systems).
- Improved batch mode and `+check=malloc` mode of memory debugging to collect and report the data without invoking `gdb` (HP Integrity systems).

Impact

See the preceding "Summary of Change."

Compatibility

HP WDB is compatible with PA-RISC and Itanium-based platforms.

Performance

There are no known performance issues.

Documentation

For additional information, see the following:

- Product Website:

  http://www.hp.com/go/wdb

- The following updated white papers are available in the Documentation section of the product website:

  ◦ "Debugging Core files using HP WDB"

  ◦ "Debugging Dynamic Memory usage errors using HP WDB"

  ◦ "Debugging threads with HP WildeBeest debugger"

- Frequently Asked Questions (FAQs) and Answers are also available in the Documentation section of the website.

- For further information on HP WDB, refer to http://docs.hp.com/en/dev.html . (You may be redirected to a new location in the Business Support Center.)

Obsolescence

Not applicable.

HP-UX Linker and HP Dynamic Loader

The HP-UX Linker (version B.11.69 for PA32 and PA64 systems and version B.12.54 for Itanium-based systems) provides support for linking executables and shared libraries for either the PA-RISC or Itanium-based architectures. The HP Dynamic Loader performs initial program startup activities and provides runtime support for dynamically loading shared libraries.

Summary of Change

HP-UX Linker, HP Dynamic Loader, and the Linker tool chain provide the following enhancements:

- Improved usability and performance of HP-UX Linker and HP Dynamic Loader.

- Improved usability in *footprints*(1) tool.

- Improved usability in *pstack*(1) tool on Itanium-based platforms as follows:

  ◦ Added support for a special argument `-1` to trace the calling process.

  ◦ Introduced a new option `-level n` to print *n* levels of procedure calls.

- On Itanium-based platforms, the `ltrace` tool now supports 64-bit executables.

- Introduced *chatr*(1) option `+rtc` to replace the existing `+mem_check` option.

  NOTE: The `+mem_check` option may not be available in future releases.

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 following documents, available at http://www.hp.com/go/linker:

- *HP-UX Linker and Libraries Release Notes*
- *HP-UX Linker and Libraries User's Guide*

Obsolescence

The +mem_check option may not be available in future releases.

Java JDK/JRE for HP-UX 11i

Java JDK/JRE 6.0

The HP-UX 11i Java Development Kit (JDK) for the Java 2 Platform Standard Edition 6 (Java™ SE 6) provides the programming tools and runtime environment that enable 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 11i Java Development Kit (JDK) for the Java 2 Platform Standard Edition (J2SE) provides the programming tools and runtime environment that enable you to deploy version 5.0 Java technology with the best performance on systems running HP-UX 11i.

Products are as follows:

- `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
- `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 6.0.05 is a new version of the HP-UX 11i Java Development Kit (JDK) 6.0.x that has been updated to include the Sun 6.0u14, 6.0u15, and 6.0u16 releases' functionality and incorporate defect and security bulletin fixes. Additionally, GC log-rotation support is provided. See the *JDK 6.0.05 Release Notes* at http://docs.hp.com/en/dev.html for details.
- JDK/JRE version 5.0.18 is a new version of the HP-UX 11i Java Development Kit (JDK) 5.0.x that includes the Sun 5.0u19 and 5.0u20 releases' functionality and incorporates defect fixes. See the *JDK 5.0.18 Release Notes* at http://docs.hp.com/en/dev.html for details.

Impact

Besides the defect and security bulletin fixes in JDK/JRE 6.0.05, GC log-rotation support is provided. JDK/JRE 5.0.18 contains defect fixes.

The SDK/RTE 1.4.2.x version is not included on the OE media. This is available on the AR media and for download from http://www.hp.com/go/Java.

Compatibility

There are no known compatibility issues.

Performance

On HP Integrity servers, if the Aries option is set to `-pa_os_cpu` globally, HP-UX 11i Java incorrectly runs PA-RISC binaries instead of Itanium-based binaries. This happens silently without any messages. The performance degrades by 2-3 times. The problem is fixed for JDK releases beginning with 6.0.01 and 5.0.14, but it is seen across previously released JDKs.

Documentation

The HP-UX 11i Java website, including free software downloads, is located at http://www.hp.com/go/Java.

The HP-UX 11i Java technical documentation website is located at http://docs.hp.com/en/dev.html .

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)

MLIB and MPI

As of the March 2010 release, MLIB and MPI are no longer included in the HP-UX 11i v3 Operating Environments. Cold-installations of the HP-UX 11i v3 March 2010 OE or later will not contain these products.

If you update from an earlier HP-UX 11i v3 OE to the HP-UX 11i v3 March 2010 OE or later, these products will remain on the system. You are free to use them although they will no longer be updated on the OE.

If you update from HP-UX 11i v2 to HP-UX 11i v3 March 2010 OE or later, these products will be removed from your system.

Mostly Private Address Space (MPAS) application model

The default address space layout on HP-UX is called MGAS (Mostly Global Address Space). In this layout, a 32-bit process can access up to 4 GB of address space, organized as 1 GB text, 1 GB data, and 2 GB shared address space, which is shared across all the processes in the system. 64-bit processes have a slightly different layout and provide much larger address space, but it is again largely split into private and shared.

For certain types of 32-bit applications, this imposes serious limits on both private and shared address space. For instance, applications won't be able to use more than 1 GB of data even if the text doesn't use up the entire 1 GB. Additionally, if one process in the system maps 1 GB of shared address space using the `mmap()` or `shmat()` calls, only the remaining 1 GB is available for all other processes in the system.

To overcome these limitations, different types of address space layouts have been implemented in HP-UX: SHMEM_MAGIC, `+q3p`, `+q4p`, memory windows, and Mostly Private Address Space (MPAS). Among these, MPAS provides the maximum possible flexibility as the entire 4 GB is available to a 32-bit process.

MPAS is supported on HP-UX starting from the HP-UX 11i v3 release on the Itanium-based platform.

With MPAS, a 32-bit process can use all of its 4 GB address space (architecturally possible maximum limit) in whatever manner it chooses to. Both private (such as data, stack) and shared objects (such as text, shared library, shared memory segment) are mapped into the process-private address space.

Summary of Change

Prior to this HP-UX 11i v3 March 2010 enhancement, mapping text and shared libraries into private address space caused severe performance bottlenecks with MPAS applications. This increased the number of minor faults and alias translations; that is, with MPAS, the kernel page table VHPT could have more than one translation for a given physical page. For shared libraries like `libc.so.1`, which is mapped by almost all executables, that meant there would be many more alias translations for a given page. These translation faults, along with accessing the alias translation chains, had serious performance implications.

These performance inhibitors for the increasingly popular MPAS have been addressed in this enhancement. The enhancement is delivered by the set of patches `PHKL_40130`, `PHKL_40132`, and `PHKL_40136`, which are delivered in the `FEATURE11i` bundle. (For more information about this bundle, see "Feature Enablement Patch Bundle (FEATURE11i)" (page 110).)

Note that you can also install these patches separately (and view their patch notes) from the IT Resource Center (http://itrc.hp.com):

- `PHKL_40130` —http://itrc.hp.com/service/patch/patchDetail.do?patchid=PHKL_40130
- `PHKL_40132` — http://itrc.hp.com/service/patch/patchDetail.do?patchid=PHKL_40132
- `PHKL_40136` — http://itrc.hp.com/service/patch/patchDetail.do?patchid=PHKL_40136

Impact

With this enhancement, performance of MPAS applications is increased dramatically, severalfold in some cases.

Compatibility

There are no known compatibility issues and no tunable changes.

Performance

Performance of MPAS applications is increased dramatically, severalfold in some cases.

Documentation

For further information about MPAS, see the *chatr* (1) manpage.

Obsolescence

Not applicable.

Unwind Library (libunwind)

The unwind library, `libunwind`, provides basic stack unwind functionality for HP-UX applications on Integrity servers, including APIs for printing a stack trace, APIs for unwinding the stack programmatically, and APIs to support the C++ exception handling mechanism. The current version of `libunwind` is 1.65.

There are two sets of APIs for unwinding the stack programmatically: the original "classic" APIs *_UNW_createContext*(3X), *_UNW_step*(3X), and so on, and the new "unwind express" APIs *uwx_init*(3X), *uwx_step*(3X), and so on.

Summary of Change

The newly added API `uwx_self_init_state_cache()` can be used to improve the performance of self-unwinding.

For C++ clients of the unwind library, the typedefs *alloc_cb* and *free_cb* in the `<uwx.h>` header file are now defined to be pointer to function with C linkage rather than pointer to function with C++ linkage. Note that the API `uwx_register_alloc_cb()` takes parameters of these types.

For details of defect fixes for the unwind library, see the patch note for `PHSS_40542` in the `FEATURE11i` bundle or at the IT Resource Center at http://itrc.hp.com/service/patch/patchDetail.do?patchid=PHSS_40542.

Impact

C++ clients of the unwind library that compile against the `<uwx.h>` header file with the `+strict` option—and that use either the typedefs *alloc_cb* or *free_cb*, or the API `uwx_register_alloc_cb()`—may see type compatibility errors at compile time if the C linkage and C++ linkage function pointers are incorrectly mixed. The workaround is to introduce appropriate typecasts or to remove the `+strict` option.

Compatibility

C++ clients of the unwind library that compile against the `<uwx.h>` header file with the `+strict` option—and that use either the typedefs *alloc_cb* or *free_cb*, or the API `uwx_register_alloc_cb()`—may see type compatibility errors at compile time if the C linkage and C++ linkage function pointers are incorrectly mixed. If source code changes are made to address the problem, type compatibility errors may appear if the source code is compiled against previous versions of the `<uwx.h>` header file.

Performance

A new API `uwx_self_init_state_cache()` has been added that can be used to improve the performance of self-unwinding.

Documentation

See the *U_STACK_TRACE*(3X), *uwx*(3X), and *unwind*(5) manpages, which point to the other manpages in their SEE ALSO sections.

Also see the patch note for patch `PHSS_40542` in the `FEATURE11i` bundle or at the IT Resource Center at http://itrc.hp.com/service/patch/patchDetail.do?patchid=PHSS_40542

Obsolescence

Not applicable.

11 Internationalization

This chapter describes changes internationalization functionality, including text fonts and converters relating to various international languages. There are no changes in March 2010 for the products or features that are normally documented in this chapter.

12 Other functionality

This chapter covers additional applications or functionality in the Operating Environments. There are no changes in March 2010 for the products or features that are normally documented in this chapter.

13 Support and other resources

Contacting HP

Before you contact HP

Be sure to have the following information available before you call contact HP:

- Technical support registration number (if applicable)
- Product serial number
- Product model name and number
- Product identification number
- Applicable error message
- Add-on boards or hardware
- Third-party hardware or software
- Operating system type and revision level

HP contact information

For the name of the nearest HP authorized reseller:

- See the Contact HP worldwide (in English) webpage (http://www.hp.com/country/us/en/wwcontact.html).

For HP technical support:

- In the United States, for contact options see the Contact HP United States webpage (http://welcome.hp.com/country/us/en/contact_us.html). To contact HP by phone:
  - Call 1-800-HP-INVENT (1-800-474-6836). This service is available 24 hours a day, 7 days a week. For continuous quality improvement, calls may be recorded or monitored.
  - If you have purchased a Care Pack (service upgrade), call 1-800-633-3600. For more information about Care Packs, refer to the HP website (http://www.hp.com/hps).
- In other locations, see the Contact HP worldwide (in English) webpage (http://www.hp.com/country/us/en/wwcontact.html).

Subscription service

HP recommends that you register your product at the Subscriber's Choice for Business website (http://www.hp.com/country/us/en/contact_us.html).

After registering, you will receive email notification of product enhancements, new driver versions, firmware updates, and other product resources.

Documentation feedback

HP welcomes your feedback. To make comments and suggestions about product documentation, send a message to docsfeedback@hp.com .

Include the document title and manufacturing part number. All submissions become the property of HP.

Related information

> **NOTE:** Documents at http://docs.hp.com are being migrated to the HP Business Support Center (BSC) website (http://hp.com/bizsupport), which houses both technical documentation and additional product support information. When the migration is complete, under the HP-UX section of the http://docs.hp.com homepage, you will find a link to redirect you to the new BSC location. For more information, see "More info on document moves to BSC" at the bottom of the http://docs.hp.com/ homepage.

Websites for HP-UX 11i v3 information

- HP-UX 11i v3 Core Documentation
  http://hp.com/go/hpux-core-docs

- HP-UX Software Deployment Documentation
  http://hp.com/go/sw-deployment-docs

- QuickSpecs: HP-UX 11i v3
  http://h18004.www1.hp.com/products/quickspecs/12079_div/12079_div.PDF

- HP-UX Server Support Matrix
  http://www.hp.com/go/hpuxservermatrix

Other sources for HP-UX 11i v3 information

- HP-UX 11i v3 Instant Information DVD

  The documentation on the Instant Information DVD enables you to view various HP-UX documents 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 (http://hp.com/go/hpux-core-docs).

- Getting Started Documents: README, Read Before Installing, Read This First

  The *Read Before Installing or Updating* media booklet (included with your media kit) contains information about the installation/update process that may not appear in the *HP-UX 11i Version 3 Installation and Update Guide*. Additionally, any product contained in the release may have a Getting Started document, so several of them may be included in your kit or may be available online.

- White Papers

  You can locate white papers on various HP-UX 11i v3 topics at http://hp.com/go/hpux-core-docs. Other white papers, including an HP-UX 11i v3 overview, can be found at the HP-UX Information Library (www.hp.com/go/hpux11iv3resources).

Other HP web resources

- HP Servers
  - HP BladeSystem: http://www.hp.com/go/blades
  - HP Integrity Server Family: http://www.hp.com/go/integrity
  - HP 9000 Server Family: http://www.hp.com/go/hp9000
- HP Workstations
  http://hp.com/go/workstations
- HP Software Depot
  http://hp.com/go/softwaredepot
- IT Resource Center (ITRC)
  http://itrc.hp.com.
- HP Software Releases and Media
  http://www.hp.com/softwarereleases/releases-media2/index.html
- Developer & Solution Partner Program (DSPP)
  http://www.hp.com/dspp

Typographic conventions

The following conventions are used in this document:

audit(5)	An HP-UX manpage. *audit* is the name and *5* is the section in the *HP-UX Reference*. From the HP-UX command line, enter "`man audit`" or "`man 5 audit`" to view the manpage. See *man*(1).
Book Title	The title of a book.
Emphasis	Text that is emphasized.
Emphasis	Text that is strongly emphasized.
`ComputerOut`	Text displayed by the computer.
`Command`	A command name or qualified command phrase.
`Filename`	Text that shows a filename and/or filepath.
`UserInput`	Commands and other text that you type.
`Variable`	The name of a variable that you may replace in a command or function or information in a display that represents several possible values.
[ ]	The contents are optional in formats and command descriptions.
{ }	The contents are required in formats and command descriptions. If the contents are a list separated by |, you must choose one of the items
. . .	The preceding element may be repeated an arbitrary number of times.
|	Separates items in a list of choices.
WARNING	An alert that calls attention to important information that if not understood or followed can result in personal injury.
CAUTION	An alert that calls attention to important information that if not understood or followed can result in data loss, data corruption, or damage to hardware or software.
IMPORTANT	An alert that calls attention to essential information.
NOTE	An alert that contains additional or supplementary information.