

# HP-UX 11i Version 3 September 2010

## Release Notes

### Operating Environments Update Release

HP Part Number: BA927-90033  
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#### Acknowledgements

This product includes software developed by the Apache Software Foundation. This documentation is based on information from the Apache Software Foundation (<http://www.apache.org>). This product includes software developed by the OpenSSL Project for use in the OpenSSL Toolkit (<http://www.openssl.org>). Thunderbird™ is a trademark of the Mozilla Foundation.

#### 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 Documents in this series are also available on the Instant Information media, but may be superseded by new editions on the web.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
<i>HP-UX 11i Version 3 September 2010 Release Notes</i>	BA927-90033	HP-UX 11i v3	Edition 1	September 2010

**Table 2 Previous Documents in This Series**

Document Title and Edition	Document manufacturing part number	Supported operating systems	Edition	Publication date
<i>HP-UX 11i Version 3 March 2010 Release Notes</i>	BA927-90021	HP-UX 11i v3	Edition 2	March 2010
<i>HP-UX 11i Version 3 March 2010 Release Notes</i>	BA927-90009	HP-UX 11i v3	Edition 1 (retired)	March 2010
<i>HP-UX 11i Version 3 September 2009 Release Notes</i>	5900-0578	HP-UX 11i v3	Edition 2	September 2009
<i>HP-UX 11i Version 3 September 2009 Release Notes</i>	5992-6561	HP-UX 11i v3	Edition 1 (retired)	September 2009
<i>HP-UX 11i Version 3 March 2009 Release Notes</i>	5992-5804	HP-UX 11i v3	Edition 1	March 2009
<i>HP-UX 11i Version 3 September 2008 Release Notes</i>	5992-4174	HP-UX 11i v3	Edition 1	September 2008
<i>HP-UX 11i Version 3 March 2008 Release Notes</i>	5992-3373	HP-UX 11i v3	Edition 1	March 2008
<i>HP-UX 11i Version 3 September 2007 Release Notes</i>	5992-3231	HP-UX 11i v3	Edition 3	September 2007
<i>HP-UX 11i Version 3 September 2007 Release Notes</i>	5992-1996	HP-UX 11i v3	Edition 2 (retired)	September 2007
<i>HP-UX 11i Version 3 September 2007 Release Notes</i>	5992-0698	HP-UX 11i v3	Edition 1 (retired)	September 2007
<i>HP-UX 11i v3 Release Notes Errata</i>	5992-5827	HP-UX 11i v3	Edition 3	October 2008

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

<b>Document Title and Edition</b>	<b>Document manufacturing part number</b>	<b>Supported operating systems</b>	<b>Edition</b>	<b>Publication date</b>
<i>HP-UX 11i v3 Release Notes Errata</i>	5992-2881	HP-UX 11i v3	Edition 2 (retired)	September 2007
<i>HP-UX 11i v3 Release Notes Errata</i>	5991-7585	HP-UX 11i v3	Edition 1 (retired)	July 2007
<i>HP-UX 11i Version 3 Release Notes</i>	5991-6469	HP-UX 11i v3	Edition 1	February 2007



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# 1 How to use this document

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

These release notes generally apply only to features that are delivered in the HP-UX 11i v3 Operating Environments (OEs). The most current version of this document can be found 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 “What is new” (page 15) 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.



## 2 Introduction 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, see the HP-UX 11i v3 webpage at <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 12).

Abundant information about the HP-UX 11i v3 release is available. See Chapter 13 “Support and other resources”.

### HP-UX 11i release names and release identifiers

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

Release Name	Release Identifier <sup>1</sup>	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 <sup>2</sup>
HP-UX 11i v3	B.11.31	Intel® Itanium® PA-RISC

<sup>1</sup> The `uname(1)` command with the `-r` option returns the release identifier.

<sup>2</sup> PA-RISC is supported on HP-UX 11i v2 starting with the September 2004 release.

To determine the update release date and the Operating Environment, enter the following:

```
# swlist | grep HPUX11i
```

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

```
HPUX11i-BOE B.11.31.1009 HP-UX Base Operating Environment
```

The above revision string signifies the following:

B.11.31 = HP-UX 11i v3

1009 = September 2010 Update Release

### HP-UX 11i v3 Operating Environment install/update structure

The HP-UX 11i v3 Operating Environment (OE) Install/Update structure 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.

### HP-UX 11i v3 software installation types

Each of the software product categories contain software bundles that are further separated into the following installation types. For more information about installation with the HP-UX 11i v3

OE structure, see the *HP-UX 11i Version 3 Installation and Update Guide* (<http://hp.com/go/hpux-core-docs>).

**Table 2-2 HP-UX 11i v3 software installation types**

Installation Type	Description
<b>Required</b> (always-installed)	Software and administration tools needed to create a minimally bootable and maintainable system. Only the drivers for basic hardware are included in this category. You might need to install additional drivers to use all hardware components. Software in this category <i>cannot</i> be deselected.
<b>Recommended</b> (default-installed)	<p>Software bundles that HP recommends you install because they fulfill software dependencies, if any exist. You can, however, manually deselect the bundles before you install or update your system.</p> <p>To install a minimal operating system configuration (base OS) you can deselect the recommended bundles. Only the minimal core OS will be installed on your system when you deselect the recommended bundles.</p> <p><b>CAUTION:</b> HP recommends that you do <b>not</b> deselect recommended software 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. Software might have unstated dependencies. Deselecting software might prevent products with dependencies on the software you deselected from functioning correctly.</p>
<b>Optional</b> (selectable)	Software bundles that are not installed or updated by default. You must manually select these bundles before you install or update your system.

## HP-UX 11i v3 Operating Environments

### Overview

Operating Environments (OEs) are tested and integrated application bundles designed to work with the operating system and provide the functionality needed for your system's purpose.

The 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.

For more information on transition, mapping, etc. from original OEs to new OEs, see the HP-UX 11i v3 OEs webpage at <http://h20338.www2.hp.com/hpux11i/us/en/products/hpux11iv3-oes-support-costs.html>.

The following table lists the new HP-UX 11i v3 OEs. For lists of software bundled in each OE, see the *HP-UX 11i v3 Installation and Update Guide* at <http://hp.com/go/hpux-core-docs>.

**Table 2-3 HP-UX 11i v3 OE descriptions**

HP-UX 11i v3 Operating Environment	Description
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) and APA. This OE is bundled as HP-UX11i-BOE.
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 HP-UX11i-VSE-OE.
HP-UX 11i v3 High Availability OE (HA-OE)	For customers 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 HP-UX11i-HA-OE.
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 HP-UX11i-DC-OE.

## Electronic Delivery

Starting 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. 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.

## 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 September 2010 release of HP-UX 11i v3, no new SPK products have been added to the Operating Environments.

## 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 109).)

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/hpux11compatibility>.

## HP Insight Remote Support Software

HP strongly recommends that you install HP Insight Remote Support software to complete the installation or upgrade of your product and to enable enhanced delivery of your HP Warranty, HP Care Pack Service or HP contractual support agreement. HP Insight Remote Support supplements your monitoring, 24x7 to ensure maximum system availability by providing intelligent event diagnosis, and automatic, secure submission of hardware event notifications to HP, which will initiate a fast and accurate resolution, based on your product's service level. Notifications may be sent to your authorized HP Channel Partner for on-site service, if configured and available in your country. The software is available in two variants:

- **HP Insight Remote Support Standard:** This software supports server and storage devices and is optimized for environments with 1-50 servers. Ideal for customers who can benefit from proactive notification, but do not need proactive service delivery and integration with a management platform.
- **HP Insight Remote Support Advanced:** This software provides comprehensive remote monitoring and proactive service support for nearly all HP servers, storage, network, and SAN environments, plus selected non-HP servers that have a support obligation with HP. It is integrated with HP Systems Insight Manager. A dedicated server is recommended to host both HP Systems Insight Manager and HP Insight Remote Support Advanced.

Details for both versions are available at

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

To download the software for free, go to Software Depot:

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

Select **Insight Remote Support** from the menu on the right.

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## 3 What is new

This chapter provides a quick overview of what is new, changed, deprecated, or obsoleted in each HP-UX 11i v3 release.

- “What is new in the HP-UX 11i v3 September 2010 release” (page 16)
- “What is new in the HP-UX 11i v3 March 2010 release” (page 23)
- “What is new in the HP-UX 11i v3 September 2009 release” (page 29)
- “What is new in the HP-UX 11i v3 March 2009 release” (page 33)
- “What is new in the HP-UX 11i v3 September 2008 release” (page 39)
- “What is new in the HP-UX 11i v3 March 2008 release” (page 45)
- “What is new in the HP-UX 11i v3 September 2007 release” (page 51)
- “What is new in the initial (February 2007) HP-UX 11i v3 release” (page 56)
  - “What is New for Customers Migrating from HP-UX 11i v1 September 2005” (page 56)
  - “What is New for Customers Migrating from HP-UX 11i v2 June 2006” (page 68)



### NOTE:

**About defect fixes** In general, information about defect fixes is 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 installed with the product or patch and can be viewed using the man command. In addition, starting with the HP-UX September 2010 release, most manpages are available on the BSC in the following location:

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

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

The following summaries provide a general picture of how the September 2010 release of HP-UX 11i v3 differs from the March 2010 release of HP-UX 11i v3. For further information, see the indicated documents or sections in the remainder of this document.

## Hardware-specific information

- **CommonIO:** Packages multiple products which support SAS and Fibre Channel adapters, and is always installed. Updated with quality and performance improvements. See the *HP CommonIO B.11.31.1009 Release Notes* at <http://hp.com/go/hpux-iocards-docs>.
- **Hardware Enablement Patch Bundle for HP-UX 11i v3 (HWEenable11i):** Provides support for new HP Integrity Server Blades, along with HP-UX support for older HP servers using PA8900 processors or Intel Itanium processors. New HP-UX 11i v3 patches for support of the latest HP Integrity systems with new Core I/O and chipsets, as well as for support of the AMD/ATI FireMV 2250 graphics adapter and future I/O adapters. See “Hardware Enablement Bundle for HP-UX 11i v3” (page 81).
- **Mass Storage Stack:** Storage manageability is enhanced with the Storage Enclosure Framework feature. Also included are defect fixes. See “Mass Storage Stack” (page 82).
- Networking and mass storage drivers
  - **FibrChan1-01:** Contains the `fcd` driver. Updated with quality improvements. For further information, see *FibrChan1-01 (fcd) Fibre Channel Mass Storage Driver for HP-UX 11i v3 Release Notes* (p/n 5991-0460). For information on supported cards, see *HP Fibre Channel (fcd and fclp) Host Bus Adapter Support Matrix*. Both documents are at <http://hp.com/go/hpux-iocards-docs>.
  - **FibrChan1-02:** Contains the `fclp` driver. Updated with quality improvements. For further information, see *FibrChan1-02 (fclp) Fibre Channel Mass Storage Driver for HP-UX 11i v3 Release Notes* (p/n 5991-0462). For information on supported cards, see *HP Fibre Channel (fcd and fclp) Host Bus Adapter Support Matrix*. Both documents are at <http://hp.com/go/hpux-iocards-docs>.
  - **10GigEthr-02:** Contains the `iexgbe` driver. Updated with quality and performance improvements. For further information, including the products supported by this bundle, see *10GigEthr-02 (iexgbe) B.11.31.1003 Ethernet Driver Release Notes* at <http://hp.com/go/hpux-iocards-docs>.
  - **GigEther-01:** Contains defect fixes. See *GigEther-01 (igelan) Gigabit Ethernet Driver Release Notes for HP-UX 11i v3* at <http://hp.com/go/hpux-iocards-docs>.
  - **IEther-00:** Contains the `iether` driver. Updated with quality and performance improvements. For further information, including the products supported by this bundle, see *IEther-00 (iether) B.11.31.1009 Ethernet Driver Release Notes* at <http://hp.com/go/hpux-iocards-docs>.
  - **RAID-01:** Contains the `ciss` driver. Updated with quality and performance improvements. For further information, including the products supported by this bundle, see *RAID-01 (ciss) B.11.31.1009 Mass Storage Driver Release Notes* at <http://hp.com/go/hpux-iocards-docs>.
  - **SerialSCSI-00:** Contains the `sasd` driver. Updated with quality and performance improvements. For further information, including the products supported by this bundle, see *SerialSCSI-00 (sasd) B.11.31.1009 Mass Storage Driver Release Notes* at <http://hp.com/go/hpux-iocards-docs>.
- Utility Pricing Solutions
  - **HP Instant Capacity:** Updated to support newer servers and to deliver defect fixes. See *HP Instant Capacity Release Notes for Version 10.x* at <http://hp.com/go/hp-icap-docs>.
  - **iCAP Manager:** Version 6.0.1 contains defect fixes. See *HP Insight Dynamics 6.0.1 Release Notes* at <http://www.hp.com/go/insightdynamics-manuals>. (Click **HP Insight Dynamics Software**.)



## General system administration

- **Dynamic Root Disk (DRD):** Improvements to DRD synchronization, support for LVM 2.2 root volume groups, support in `drd runcmd` for `kcmodule`, `kconfig`, and `mk_kernel`. Plus a new white paper to help with migration to the new HP Integrity server family. See *Dynamic Root Disk A.3.6.\* Release Notes* at <http://www.hp.com/go/drd-docs>.
- **Enterprise Cluster Master Toolkit:** Version B.06.00 includes support for HP Serviceguard A.11.19 and A.11.20, Apache 2.2, HP Virtual Machines 4.1 and 4.2, Oracle 11g R2, IPv6, Dynamic Root Disk (safe and useful) environments, multiple listeners in the Oracle toolkit, and alert notification. See *Enterprise Cluster Master Toolkit B.06.00 Release Notes* at <http://hp.com/go/hpux-serviceguard-docs>.
- **Event Monitoring Services (EMS):** Includes fixes for internally found issues. EMS has been deprecated. Post HP-UX 11i v3 release, EMS will be replaced with Web-based Enterprise Management (WBEM) based solutions. See *Event Monitoring Service Version A.04.20.31.06 Release Notes* at <http://hp.com/go/hpux-ha-monitoring-docs>.
- **Feature Enablement Patch Bundle (Feature11i):** Includes performance improvements in scheduling and boot time, filesystem improvements, Internationalization improvements, and support for HP-UX N\_Port ID Virtualization and storage enclosure identification associated with LUNs, LUN paths, target paths, and target ports. See “Feature Enablement Patch Bundle - Feature11i” (page 85).
- **High Availability Monitors (HA Monitors):** Upgraded to A.04.20.31.06 to support the update of Event Monitoring Service (EMS) A.04.20.31.06. HA Monitors has been deprecated. Post HP-UX 11i v3 release, HA Monitors will be replaced with Web-based Enterprise Management (WBEM) based providers. See *High Availability Monitors Version A.04.20.31.06 Release Notes* at <http://hp.com/go/hpux-ha-monitoring-docs>.
- **HP GlancePlus Pak:** HP Performance Agent version 5.00 includes the RC enhancement feature and supports only http(s) data communication. HP GlancePlus version 5.00 introduces a daemon (`perfd`) and a set of clients (`cpsh`, `padv`, and `mpadv`) to access data locally and remotely. See the *HP GlancePlus 5.00 Release Notes* and *HP Performance Agent 5.00 Release Notes* at <http://h20230.www2.hp.com/selfsolve/manuals>. (These documents are no longer available in `/opt/perf/ReleaseNotes/`.)
- HP Partitioning and Virtual Server Environment
  - **Accelerated Virtual I/O (AVIO):** AVIO LAN and AVIO storage support Suspend/Resume (on HP Integrity Virtual Machines v4.2.5) and deliver defect fixes. AVIO LAN supports VLAN backed vSwitch in the `HostAvioLAN` driver (on HP Integrity Virtual Machines v4.2.5), and AVIO storage supports Mass Storage Critical Resource Analysis in the `HostAvioStor` driver. See *HP Integrity Virtual Machines 4.2.5: Release Notes* at <http://hp.com/go/virtualization-manuals>.
  - **HP Insight Dynamics - VSE for Integrity (A.6.0.1):** Provides defect fixes for the components Application Discovery, Capacity Advisor, HP Integrity VM Manager, and Logical server management. All other components updated only to incorporate packaging changes. See *HP Insight Dynamics 6.0 Release Notes*, February 2010, Edition 2 at <http://www.hp.com/go/insightdynamics-manuals>. (Click **HP Insight Dynamics Software**.) You are encouraged to check for a newer release of this product at HP Software Depot: <https://h20392.www2.hp.com/portal/swdepot/displayProductInfo.do?productNumber=vse>. Note that newer servers require the latest version of Insight Dynamics from the web.
  - **HP Integrity Virtual Machines v4.2.5:** Addition of OpenVMS guest support, HP-UX 11i v3 September 2010 VM Host and guest support, and new suspend and resume functionality. Support for the latest HP Integrity systems based on the Intel® Itanium® 9300 Processor. Also includes a roll-up of patches released after the HP-UX 11i v3 March 2010 release. See *HP Integrity Virtual Machines 4.2.5: Release Notes* at <http://www.hp.com/go/virtualization-manuals>.

- **HP Integrity Virtual Machines OVMM:** Updated to include defect fixes. See *HP Integrity Virtual Machines 4.2.5: Release Notes* at <http://www.hp.com/go/virtualization-manuals>.
- **HP Integrity Virtual Machines VMGuestLib:** Subset of the HP Integrity Virtual Machines API Library used by WBEM Provider. Updated to incorporate defect fixes. See *HP Integrity Virtual Machines 4.2.5: Release Notes* at <http://www.hp.com/go/virtualization-manuals>.
- **HP Integrity Virtual Machines VMGuestSW:** Updated to incorporate defect fixes. See *HP Integrity Virtual Machines 4.2.5: Release Notes* at <http://www.hp.com/go/virtualization-manuals>.
- **HP Integrity Virtual Machines VMProvider:** Updated to include defect fixes. See *HP Integrity Virtual Machines 4.2.5: Release Notes* at <http://www.hp.com/go/virtualization-manuals>.
- **HP-UX nPartition Configuration Commands:** Extends support to newer servers. See *HP Superdome 2 Partitioning Release Notes* at <http://hp.com/go/hpux-npars-docs>. (Click **HP-UX 11i v3** and go to the **Getting Started** category.) To obtain PHCO\_41171 11.31 nPartition Japanese manpages cumulative patch, go to the IT Resource Center at <http://itrc.hp.com>.
- **HP-UX Virtual Partitions:** Extends support to newer servers. Fixes customer-reported problems and internally found defects. See *HP Superdome 2 Partitioning Release Notes* and *HP-UX Virtual Partitions Release Notes A.05.07* at <http://hp.com/go/hpux-vpars-docs>. (Click **HP-UX 11i v3** and go to the **Getting Started** category.)
- **Partition Manager:** Extends support to newer servers. See *HP Superdome 2 Partitioning Release Notes* at <http://hp.com/go/hpux-npars-docs>. (Click **HP-UX 11i v3** and go to the **Getting Started** category.)
- **Utilization Provider:** Updated to version A.01.08.05.02 to support HP Insight Dynamics version 6.0.1. See “Utilization Provider” (page 92).
- **HP Serviceguard:** Updated to version A.11.20. Ease-of-use improvements include the following: easy configuration from the command line or Serviceguard Manager; new cluster verification capabilities; cluster or node maintenance while the applications remain up and running; cluster-wide device special files (requires A.11.20 plus patch). Support for NFS-imported file systems as package storage. See *HP Serviceguard A.11.20 Release Notes* at <http://hp.com/go/hpux-serviceguard-docs>.
- **New: HP Serviceguard Extension for Oracle E-business Suite B.01.00:** Provides high availability to Oracle E-business Suite in a Serviceguard cluster. Newly added to the High Availability and Data Center OEs. Includes support for HP Serviceguard A.11.19 and A.11.20, Oracle 11g R2, and high availability for databases and the application tier. See *HP Serviceguard Extension for Oracle E-business Suite B.01.00 Release Notes* at <http://hp.com/go/hpux-serviceguard-docs>.
- **HP Serviceguard NFS Toolkit:** IPv6 support is enabled. Also includes defect fixes. See *Serviceguard NFS Toolkit A.11.31.07 Release Notes* at <http://hp.com/go/hpux-serviceguard-docs>.
- **New: HP Serviceguard Toolkit for Oracle Data Guard B.01.00:** Ensures high availability for Data Guard processes, provides disaster protection and recovery for Oracle databases and the applications that use these databases. Newly added to the High Availability and Data Center OEs. Includes support for HP Serviceguard A.11.19 and A.11.20, Single instance and Oracle RAC databases, Data Guard in Continentalclusters and Metrocluster environments, and Oracle 11g R2. See *HP Serviceguard Toolkit for Oracle Data Guard B.01.00 Release Notes* at <http://hp.com/go/hpux-serviceguard-docs>.
- **HP System Management Homepage:** Version 3.2.1 works with both Apache 2.0 and Apache 2.2. Includes fixes for customer-reported problems and internally found issues. See *HP System Management Homepage 3.2.1 Release Notes* at <http://hp.com/go/hpux-core-docs>. (Click **HP-UX 11i v3** and go to the **Getting Started** category.)

- **HP Systems Insight Manager:** Version 6.0 introduces a series of exciting enhancements. Scalability which allows manageability up to 10,000 systems (up to 5,000 servers, with additional 5,000 management processors, VMS, and so on) when using Windows 64-bit. Enhanced reporting including tables and graphs for easier access to Systems Insight Manager data; migration tool to transfers settings from a SIM 5.3x CMS to a SIM 6.0 CMS; a firmware update that integrates with HP Smart Update Manager and provides agentless firmware upgrade for management processor and Onboard Administrator. For the complete list of what is new, see the *HP Systems Insight Manager Readme* at the HP SIM 6.x Information library:<http://h18013.www1.hp.com/products/servers/management/hpsim/infolibrary.html>.
- **HP-UX Accounts for Users and Groups (ugweb):** Includes fixes for internally found defects. See “HP-UX Accounts for Users and Groups (ugweb)” (page 85).
- **HP-UX Kernel Configuration (kcweb):** Includes fixes for a customer-reported problem and internally found issues. See “HP-UX Kernel Configuration (kcweb)” (page 86).
- **HP-UX Peripheral Devices Manager tool (pdweb):** Includes fixes for internally found issues. See “HP-UX Peripheral Devices Manager (pdweb)” (page 87).
- **HP-UX Software Assistant:** Version C.02.50 has performance improvements and defect fixes. See *HP-UX Software Assistant Release Notes* at <http://hp.com/go/swa-docs>.
- **Ignite-UX:** Includes pre-enablement for future VxVM versions and support for new HP-UX hardware and drivers. See Ignite-UX documents at <http://www.hp.com/go/ignite-ux-docs>
- **Insight managed system setup wizard:** Version A.6.0.1 supports new hardware and supports upgrading from previous releases of the wizard. See “Insight managed system setup wizard” (page 88).
- **Logical Volume Manager (LVM):** Provides the automatic increase of pre-allocated extents when the threshold value is reached for space-efficient snapshots; enables you to change the size and mirror count of an original logical volume on a snapshot tree; optimizes resynchronization I/Os of snapshot mirrors by resynchronizing only the unshared units of the extents. See *HP-UX Logical Volume Manager and MirrorDisk/UX Release Notes* at <http://hp.com/go/hpux-core-docs> (Click **HP-UX 11i v3**).
- **Network Interfaces Configuration and Network Services Configuration:** Includes fixes for internally found issues. See “Network Interfaces Configuration and Network Services Configuration” (page 88).
- **Online Diagnostics:** Several monitors will be replaced by corresponding native providers, which will be available on newer servers. Starting with HP-UX 11i v3 March 2009 release, OnlineDiag (including STM) is in support mode. OnlineDiag is not supported on newer platforms, and SysFaultMgmt is the default monitoring mode on both older and newer platforms. See *EMS Release Notes for HP-UX 11i v3 September 2010 Release* and *STM Release Notes for HP-UX 11i v3 September 2010 Release* at <http://docs.hp.com/en/diag>.
- **PropPlus (SysMgmtPlus):** Displays HP Systems Insight Manager (HP SIM) compatible overall systems status on HP SMH. Enhanced support for the following new and updated property pages in HP SMH (see *hpsmh(1M)*): Blade; Memory; Cell Blade. See *SysMgmtPlus Release Notes* at <http://docs.hp.com/en/diag>.
- **ProviderSvcsBase:** Health test command line enables `-runtest` and `-runtest -a` commands to support configurable options `-loop`, `-timer`, `-log`, `-error` and `-stress`. Similar functionality offered by `diaglogd` daemon (in the OnlineDiag bundle), will be obsoleted and provided by the `oserrlogd` daemon (in the ProviderSvcsBase bundle). See *HP-UX ProviderSvcsBase Release Notes* at <http://docs.hp.com/en/diag>.
- **Quality Pack Patch Bundles:** Updated for the September 2010 release. See “Quality Pack Patch Bundles” (page 90).
- **Software Distributor (SD):** Includes defect fixes. See <http://www.hp.com/go/sd>.
- **System Fault Management (SFM):** Updated to revision C.07.01.xx.yy with additional support for more robust inventory and error handling on newer platforms. Switching between SFM and EMS modes is not available on newer platforms. Enhanced to support the following

new and updated property pages in HP SMH (see *hpsmh(1M)*): Blade; Memory; Cell Blade. See *SFM Release Notes* at <http://docs.hp.com/en/diag>.

- **New: Tunable for aggressive kernel memory caching:** Provides tunable *kmem\_aggressive\_caching* to give you control over the caching and pre-allocation of kernel memory pages. See “Tunable for aggressive kernel memory caching” (page 91).
- **Update-UX and SW-GETTOOLS:** Delivers defect fixes. See “Update-UX and SW-GETTOOLS” (page 91).
- **WBEM Services and providers**
  - **HP WBEM Services for HP-UX:** Version A.02.09.04 is a minor update to the HP WBEM Services version A.02.09 that was released with HP-UX 11i v2 and 11i v3 in September 2009. Includes defect fixes. Starting with September 2009, HP WBEM Services version A.02.09 is not available on HP-UX 11i v1. Only defects that are critical in nature will be addressed on HP-UX 11i v1 systems. See *HP WBEM Services Version A.02.09 Release Notes* at <http://hp.com/go/hpux-networking-docs>.
  - **HP-UX WBEM Direct Attached Storage Provider:** Not supported on HPVM guest OS. Indication provider supports System GUID and Network address properties. Includes defect fixes. See *HP-UX WBEM Direct Attached Storage Provider Release Notes* at <http://hp.com/go/hpux-networking-docs>.
  - **HP-UX WBEM Fibre Channel Provider:** Not supported on HPVM guest OS. Indication provider supports System GUID and Network address properties. Includes defect fixes. As OnlineDiag is not supported on newer platforms, the `dm_fc_l_p_adapter` and `dm_q_l_adapter` monitors used by Fibre Channel Indication provider will be replaced by `HPUXFCNativeIndicationProviderModule` on newer servers. See *HP-UX WBEM Fibre Channel Provider Release Notes* at <http://hp.com/go/hpux-networking-docs>.
  - **HP-UX WBEM File System Provider:** Allows non-root users to monitor the file system status. See product release notes at <http://hp.com/go/hpux-networking-docs>.
  - **HP-UX WBEM IOtree Indication Provider:** Not supported on HPVM guest OS. Includes defect fixes. See *HP-UX WBEM IOtree Indication Provider Release Notes* at <http://hp.com/go/hpux-networking-docs>.
  - **HP-UX WBEM nPartition Provider:** Delivers defect fixes. See the product release notes at <http://hp.com/go/hpux-networking-docs>.
  - **HP-UX WBEM RAIDSA Provider:** Not supported on HPVM guest OS. Indication provider supports System GUID and Network address properties. Includes defect fixes. See *HP-UX WBEM RAIDSA Provider Release Notes* at <http://hp.com/go/hpux-networking-docs>.
  - **HP-UX WBEM SAS Provider:** Not supported on HPVM guest OS. Indication provider supports System GUID and Network address properties. Includes defect fixes. As OnlineDiag is not supported on newer platforms, the `dm_sas_adapter` monitor used by SAS Indication provider on newer servers will be replaced by `HPUXSASNativeIndicationProviderModule`. See *HP-UX WBEM SAS Provider Release Notes* at <http://hp.com/go/hpux-networking-docs>.
  - **HP-UX WBEM SCSI Provider:** Not supported on HPVM guest OS. Includes defect fixes. See *HP-UX WBEM SCSI Provider Release Notes* at <http://hp.com/go/hpux-networking-docs>.
  - **HP-UX WBEM vPartition Provider:** Delivers defect fixes. See the product release notes at <http://hp.com/go/hpux-networking-docs>.
  - **WBEMP-LAN Provider:** Includes defect fix. See *HP-UX WBEM LAN Provider Release Notes* at <http://hp.com/go/hpux-networking-docs>.

## Disk and file management

- **HP-UX Disks and File Systems (fsweb):** `disklist` command is now fixed to display a disk as “Used” if the volume group configured on it is deactivated. A few internally found issues are fixed. See “HP-UX Disks and File Systems (fsweb)” (page 95).
- **ONCplus:** Includes parallel mount feature for performance improvement and defect fixes. See *ONCplus B.11.31.09.01 Release Notes* at <http://hp.com/go/hpux-networking-docs>.
- **Symantec Products (VxFS and VxVM):** All new HP Integrity systems based on the Intel® Itanium® 9300 Processor are supported with VxFS and VxVM version 5.0 (and later) on HP-UX 11i v3. These systems are not supported with VxFS and VxVM version 4.1.

### Internet and networking

- **BIND:** Version 9.3.2 contains fixes for security vulnerabilities. See *BIND 9.3.2 Release Notes* at <http://hp.com/go/hpux-networking-docs>.
- **HP-UX Auto Port Aggregation (APA):** HP APA supports the use of fixed MAC addresses. See *HP Auto Port Aggregation (APA) Release Notes* at <http://hp.com/go/hpux-networking-docs>.
- **HP-UX Directory Server (HPDS):** HPDS Administration Server updated to add support for HP-UX Apache-based Web Server version 2.2. Includes a defect fix. See *HP-UX Directory Server 8.1.02 Release Notes* at <http://www.hp.com/go/hpux-security-docs>. (Click **HP-UX Directory Server**.)
- **HP-UX NSA HTTP:** Starting with version 11.31.01.03, NSA HTTP is not automatically activated. You must manually activate it using the procedure discussed in *HP-UX NSA HTTP B.11.31.01.03 Release Notes* at <http://hp.com/go/hpux-networking-docs>.
- HP-UX Web Server Suite
  - **New: HP-UX Apache-based Web Server:** `hpuxwsapache` has been replaced by `hpuxws22apache` (Apache 2.2.8.08), which combines Apache with numerous popular modules from other Open Source projects and provides HP value-added features for HP-UX. See *HP-UX Apache-based Web Server v.3.08 Release Notes* at <https://h20392.www2.hp.com/portal/swdepot/displayProductInfo.do?productNumber=HPUXWSATW308>.
  - **New: HP-UX Tomcat-based Servlet Engine:** `hpuxwsTomcat` has been replaced by `hpuxws22Tomcat`, which provides Java-based extensions for dynamic content generation through Servlets and JavaServer Pages (JSPs). See *HP-UX Apache-based Web Server v.3.08 Release Notes* at the preceding website.
  - **New: HP-UX Webmin-based Admin:** `hpuxwsWebmin` has been replaced by `hpuxws22Webmin` (A.1.070.11), which is a Configuration and Administration GUI with extensive enhancements for the HP-UX Apache-based Web Server. See *HP-UX Apache-based Web Server v.3.08 Release Notes* at the preceding website.
- **Service Location Protocol (SLP):** Packaging updated. See “Service Location Protocol (SLP)” (page 97)

### Security

- **HP-UX Auditing and Security Attributes Configuration (secweb):** Includes fixes for internally found defects. See “HP-UX Auditing and Security Attributes Configuration (secweb)” (page 99).
- **HP-UX Bastille:** Provides new lockdown items for the CIS Benchmark 1.5, and more. See *HP-UX Bastille Release Notes* at <http://www.hp.com/go/hpux-security-docs>.
- **HP-UX Security Containment Extensions:** Version B.11.31.01.01 provides fixes for known problems. See *HP-UX Security Containment Extensions B.11.31.01.01 Release Notes* at <http://www.hp.com/go/hpux-security-docs>. (Click **HP-UX 11i Security Containment Software**.)
- **HP-UX Software Assistant:** Version C.02.50 has performance improvements and defect fixes. See *HP-UX Software Assistant Release Notes* at <http://hp.com/go/swa-docs>.

- **OpenSSL:** Versions A.00.09.07m and A.00.09.08n contain defect fixes. See *OpenSSL A.00.09.08n.001, A.00.09.08n.002, and A.00.09.08n.003 Release Notes* at <http://www.hp.com/go/hpux-security-docs>.
- **Kerberos Client:** Version 1.6.2.07 contains defect fixes only. See *Kerberos Client 1.6.2.07 Release Notes* at <http://www.hp.com/go/hpux-security-docs>. (Click **HP-UX Kerberos Data Security Software**.)

### Commands and system calls

- **New: *io\_cdsf\_config(1M)* command and *iocdsfd(1M)* daemon:** Together with HP Serviceguard A.11.20, this set supports the ability to create cluster-wide device-special files across a Serviceguard cluster. See “*iocdsfd(1M)* and *io\_cdsf\_config(1M)*” (page 101).
- **New: Cluster Device Special Files (cDSF):** Included in the FEATURE11i patch bundle, the *intro(7)* manpage patch (PHCO\_41169) describes the cluster DSF feature provided by the new *io\_cdsf\_config(1M)* patch (PHCO\_40899).
- ***ioscan(1M)*:** The -m option has been enhanced to accept new keywords `resourcepath` and `cluster_dsf`. See “*ioscan(1M)*” (page 101).

### Libraries and programming

- **JDK/JRE version 6.0.06:** New version of the HP-UX 11i Java Development Kit (JDK) 6.0.x that has been updated to include the Sun 6.0u17 release's functionality and incorporate defect and security fixes. NUMA Collector enhancements, ThreadDumpPath support, and a fix for the Transport Layer Security renegotiation issue are also provided. See *JDK 6.0.06 Release Notes* at <http://docs.hp.com/en/dev.html>.
- **JDK/JRE version 5.0.19:** New version of the HP-UX 11i Java Development Kit (JDK) 5.0.x that has been updated to include the Sun 5.0u21 and 5.0u22 releases' functionality and incorporate defect and security fixes. ThreadDumpPath support is also provided. See *JDK 5.0.19 Release Notes* at <http://docs.hp.com/en/dev.html>.
- **SDK/RTE version 1.4.2.x:** Not included on the OE media. Available on the AR media and for download from <http://www.hp.com/go/Java>.

### Internationalization

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

### Other functionality

- **HP-UX Parallel Umounts (*UmountallEnh*):** Updated to incorporate a defect fix. See the *UmountallEnh* webpage at <http://h20293.www2.hp.com/portal/swdepot/displayProductInfo.do?productNumber=UmountallEnh>.

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

The following summaries provide 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 chapters in the *HP-UX 11i Version 3 March 2010 Release Notes*, available in its most current version at

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

## **March 2010 Release Notes, Chapter 2: "Introduction to HP-UX 11i version 3"**

- **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.

## **March 2010 Release Notes, Chapter 4: "Hardware-specific information"**

- CommonIO: Updated with quality improvements.
- Hardware Enablement Bundle for HP-UX 11i v3 (HWE`nable11i`): 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.
- **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.
- **New:** Mass Storage Stack: Storage manageability is enhanced with the new hardware path aliasing feature.
- Networking and storage drivers
  - 10GigEthr-00: Updated with quality improvements.
  - 10GigEthr-01: Updated with quality improvements.
  - 10GigEthr-02: Updated with quality improvements.
  - FibrChanl-00: Delivers defect fixes.
  - FibrChanl-01: Updated with quality improvements.
  - FibrChanl-02: Updated with quality improvements.
  - 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.
  - IB4X-00: Delivers defect fixes.
  - IEther-00: Updated with quality improvements.
  - RAID-01: Updated with quality improvements.
  - SerialSCSI-00: Updated with quality improvements.
- HP Instant Capacity: Version B.11.31.09.03.00 delivers defect fixes.
- 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.

## **March 2010 Release Notes, Chapter 5: "General system administration"**

- Boot time improvement (RC`Enhancement`): Supported by new patches in the `FEATURE11i` bundle, as well enhancement of several OE products.
- Dynamic Root Disk: Version B.11.31.A.3.5.x introduces the ability to synchronize the clone with the running system.
- Electronic delivery of HP-UX 11i v3: In March 2010, electronic delivery of HP-UX 11i v3 includes Americas, Europe, Middle East, and Asia.
- EMSWeb: Delivers defect fixes.

- Event Monitoring Services: Delivers defect fixes.
- 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.
- High Availability Monitors: Upgraded to A.04.20.31.05 to support the update of Event Monitoring Service (EMS).
- 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.
- 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.
- 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.
- HP Partitioning and Virtual Server Environment
  - 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.
  - AppDiscAgent: Version A.6.0.0 incorporates defect fixes.
  - 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.
    - 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.
  - 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.
  - HP Integrity Virtual Machines (VMGuestSW): Updated to include in the V4.2 versions of VMProvider and VMGuestLib.
  - HP Integrity Virtual Machines (VMKernelSW): No longer sets the `base_pagesize` on the VM host.



- 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.
  - 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.
  - HP-UX nPartition Configuration Commands: Delivers fixes for internally found defects.
  - 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.
  - **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.
  - Partition Manager: Delivers fixes for internally found defects.
  - Utilization Provider for HP-UX 11i v3: Updated to version A.01.08.04.01 to support HP Insight Dynamics version 6.0.
  - vPar Provider: Provides a defect fix and a new property that obtains the virtual partition ID.
- HP Serviceguard NFS Toolkit: Version A.11.31.05 delivers defect fixes.
  - HP System Management Homepage: Provides information about the actions performed on HP SMH. CLI now available.
  - 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.
  - HP-UX Accounts for Users and Groups (ugweb): Delivers defect fixes.
  - HP-UX Peripheral Devices Manager (pdweb): Delivers defect fixes.
  - HP-UX Software Assistant: HTML report identifies patches included as dependencies. Improved integration with HP SIM.
  - 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.
  - **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.
  - Logical Volume Manager: Updated to version 2.2. Introduces the logical volume snapshot, the `lvmove` command, boot support for new LVM layout, and more.
  - Network Interfaces Configuration and Network Services Configuration: Delivers defect fixes.
  - Numeric User Group Name: Includes further enhancements to support user/group names that begin with numeric characters or that are entirely numeric.
  - Obsolescence Bundle: Now also includes MLIB, MPI, and Mozilla.
  - Online Diagnostics: Will not be supported on newer platforms. SysFaultMgmt will be the default monitoring mode.
  - Printer Management (web-based): Delivers defect fixes.
  - PropPlus (SysMgmtPlus): Supports new and updated property pages in HP SMH.

- ProviderSvcsBase: CIM\_RegisteredProfile class and CIM\_ElementConformsToProfile class moved to HP WBEM Services for HP-UX.
- Quality Pack Patch Bundles: Updated for March 2010.
- Software Distributor (SD): Delivers defect fixes.
- 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.
- System Fault Management: Common Error Repository (CER) database, delivered in SFM, will be available in ProviderSvcsBase. Updated content of HP SMH property pages.
- Update-UX: Updated to support changes to Software Distributor.
- WBEM services and providers
  - HP WBEM Services for HP-UX: The output of `wbemassist` tool available in Japanese locale. Also delivers defect fixes.
  - 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.
  - HP-UX WBEM Fibre Channel Provider: A new provider fetches information regarding error records logged in the `FCPROVDB` database. Also delivers a defect fix.
  - HP-UX WBEM IOTree Indication Provider: Delivers defect fixes. A new configuration file allows tuning of the polling interval.
  - HP-UX WBEM Kernel Providers: Delivers defect fixes.
  - HP-UX WBEM RAIDSAPROVIDER: A new provider fetches information regarding error records logged in the `RAIDSAPROVDB` database.
  - HP-UX WBEM SAS PROVIDER: A new provider fetches information regarding error records logged in the `SASPROVDB` database.

### **March 2010 Release Notes, Chapter 6: “Disk and file management”**

- 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.
- MemFS: Delivers defect fixes.
- 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.
- OnlineJFS: Delivers fixes for internally found defects.
- Veritas File System (VxFS): Delivers fixes for internally found defects.
- Veritas Volume Manager (VxVM): Delivers fixes for internally found defects.

### **March 2010 Release Notes, Chapter 7: “Internet and networking”**

- 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.
- HP CIFS Server: Supports Windows Server 2008 and Windows Vista operating systems. Dynamic DNS update option is available. Defect fixes are made.
- **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.
- HP-UX Mail Server (Sendmail): Delivers defect fixes.
- HP-UX Web Server Suite

- HP-UX Apache-based Web Server: Updated to v.2.0.59.12 as primarily a security/bug fix release.
- 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.
- 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.

### **March 2010 Release Notes, Chapter 8: “Security”**

- HP-UX Auditing and Security Attributes Configuration (*secweb*): Delivers defect fixes.
- HP-UX Bastille and Install-Time Security: Provides improved usability through assessment reporting that evaluates the security status of the system.
- 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.
- **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.
- HP-UX Role-Based Access Control (RBAC): Version B.11.31.05 enhances logging capability with keystroke and alternate logging.
- 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.
- HP-UX Software Assistant: Improved integration with HP SIM.
- OpenSSL: Delivers defect fixes.
- 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.

### **March 2010 Release Notes, Chapter 9: “Commands and system calls”**

- *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.
- **New:** *MountallEnh*: Enables machines with a large number of mounted filesystems to boot-up faster.
- PAX-ENH: Version 11.31.09 delivers defect fixes.
- **New:** SAR-MEMFS-ENH: Enables you to obtain MemFS data with the *sar(1M)* command. Added as *optional* (optionally installed) software in all OEs.
- **New:** *trufgrep(1)* command performs better than *fgrep(1)* command with a more efficient algorithm. *FGREPMULTPAT* bundle is *optional* (optionally installed) software in all OEs.

### **March 2010 Release Notes, Chapter 10: “Libraries and programming”**

- 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.
- 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.
- 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.

- MLIB and MPI are no longer included in the HP-UX 11i v3 Operating Environments.
- **New:** Mostly Private Address Space (MPAS) application model: With this enhancement, performance of MPAS applications is increased dramatically, severalfold in some cases.
- Unwind Library (`libunwind`): Delivers defect fixes, a new API that can be used to improve the performance of self-unwinding, and more.

**March 2010 Release Notes, Chapter 11: "Internationalization"**

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

**March 2010 Release Notes, Chapter 12: "Other functionality"**

- 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 provide 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 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>

## **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.
  - FibrChan1-00: Updated to version B.11.31.0909 to incorporate defect fixes.
  - FibrChan1-01: Updated with quality improvements.
  - FibrChan1-02 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.

- **FEATURE111i:** 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 postgres 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 RAIDSAs 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 provide a general picture of how the March 2009 release of HP-UX 11i v3 differs from the September 2008 release of HP-UX 11i v3. For further information, see the indicated 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 (HWEenable11i): Includes support for new PCI-Express I/O adapters in HP Integrity Servers, and HP-UX support for HP servers with PA8900 processors and the sx2000 chipset. Also includes new HP-UX 11i v3 patches that improve PCIe Error Recovery (ER) and support of new PCIe devices. New patches were also added for CPU and memory On-Line Addition/Deletion (OLAD) for future HP platforms.
- Mass Storage Stack: Enhancements include congestion control, server manageability, ease-of-use, and I/O performance.
- Networking and Mass Storage Drivers
  - FibrChan1-00: Updated to version B.11.31.0903 for a defect fix.
  - FibrChan1-01: Updated with quality improvements.
  - FibrChan1-02: 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 3.0j 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.
  - HP-UX 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 FEATURE111 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 provide a 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 (HWEEnable11i): 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 100FD and fail if there is a fallback in the speed (100FD/100HD or 10FD/10HD). Supports accelerated virtual I/O (AVIO) to significantly improve Integrity VM (HPVM) I/O performance.
  - IB4X-00: Includes defect fixes and enhancements.
  - IEther-00: To see what's changed from one release to the next, see the IEther-00 driver's release history.
  - PCIMUX-00: Diagnostic utility pmux\_diag for AD278A/AD279A now supports several new functionalities. Includes defect fixes.
  - RAID-01: Updated with quality improvements.

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

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

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



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

- Printer Management (web-based): Provides support in the TUI for adding remote printer and for adding printer to a TSM terminal.
- Quality Pack Patch Bundles (QPKAPPS and QPKBASE): Third release for HP-UX 11i v3 with a sizable increase in the number of defect fix patches included.
- Software Distributor: Updated to incorporate defect fixes.
- Software Package Builder: Updated to incorporate defect fixes. Now supports detection of possible installation errors in addition to the packaging errors.
- System Fault Management: Several changes including the introduction of MCA Indication Provider and ComputerSystem Chassis Provider, and support for MCA logs and Agile information.
- **New:** Tunable Base Page Size: Enhancement makes it possible to tune the size of the system base page, which was formerly fixed at 4 KB. Now the additional sizes 8 KB, 16 KB, and 64 KB are available. The larger system base page size reduces the kernel's memory footprint and makes certain memory management operations more efficient.
- **New:** Tune-N-Tools: Delivers the tool *tuneserver(1m)*. When executed, sets kernel tunables to values appropriate for major customer business application workloads.
- Update-UX and SW-GETTOOLS: Updated to incorporate defect fixes.
- Virtual Server Environment Configuration Assistant (VseAssist): Extended with additional checks supporting new features of VSE Management Software version 4.0, including updated licensing checks and a new iCAP status check.
- WBEM Services and Providers
  - HP WBEM Services for HP-UX: Updated to incorporate defect fixes and support for virtual IDs.
  - HP-UX WBEM Fibre Channel Provider: Updated to incorporate defect fixes.
  - HP-UX WBEM IOTree Provider: Supports consolidated status (CSP) feature.
  - HP-UX WBEM Kernel Providers: Support new features.
  - HP-UX WBEM RAIDSA Provider: Updated to incorporate a defect fix.
  - HP-UX WBEM SAS Provider: Updated to incorporate a defect fix.
  - HP-UX WBEM SCSI Provider: Updated to incorporate defect fixes.
  - HP-UX WBEMP-LAN Provider: Supports new 1000fd data transfer speed setting. New operational status for LAN cards are available. LAN Indication Provider is supported with DLPI patch PHNE\_37799.

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

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

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

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

## September 2008 Release Notes, Chapter 8: "Security"

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

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

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

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

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

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

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

### **September 2008 Release Notes, Chapter 11: “Internationalization”**

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

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

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

# What is new in the HP-UX 11i v3 March 2008 release

The following summaries provide a general picture of how the March 2008 release of HP-UX 11i v3 differs from the September 2007 release of HP-UX 11i v3. 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.
  - `FibrChan1-00`: Updated to add support for users to update the EFI driver for the Tachyon XL2 (A6795A) Fibre Channel HBAs using the FC Mass Storage utility `/opt/fcms/bin/fcmsutil`.
  - `FibrChan1-01`: Updated to incorporate defect fixes.
  - **New:** `FibrChan1-02`: First release on HP-UX 11i v3: recommended product on all OEs. Driver for the Fibre Channel HBAs.
  - `GigEther-01`: Change history is located at <http://hp.com/go/hpux-iocards-docs>.
  - `IB4X-00`: Updated to incorporate defect fixes.
  - `IEther-00`: Change history is located at <http://hp.com/go/hpux-iocards-docs>.
  - `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)`.
  - HP-UX Nameserver (BIND): Updated to version 9.3.2 to incorporate defect fixes.
- LDAP-UX Integration: Version B.04.15 provides new LDAP user/group command-line tools.



- Red Hat Directory Server for HP-UX: Version B.07.10.30.01 mainly provides a SD defect fix.
- Thunderbird, ThunderbirdSrc: Updated to version 2.0.0.6. Fixes several security vulnerabilities reported by the Mozilla Foundation.

### **March 2008 Release Notes, Chapter 8: "Security"**

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

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

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

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

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

- **New:** HP MLIB: In TCOE, V9.5 includes a defect fix. HP MLIB is newly delivered as an optional product in VSE-OE, HA-OE, and DC-OE.
- **New:** HP-MPI: Newly delivered as an optional product in BOE, VSE-OE, HA-OE, and DC-OE.
- **New:** HP Wildebeest Debugger: An HP-supported implementation of the Open Source GNU debugger (GDB). Enables you to debug C, C++, and FORTRAN applications (32 bit and 64 bit versions) on Integrity and PA-RISC systems. Newly added as a recommended product to the BOE, HA-OE, VSE-OE, DC-OE.
- **New:** HP-UX Atomic APIs (`libatomic`): Usage of these APIs avoid the use of mutex locks or semaphores in certain scenarios. Delivered as an optional product in all OEs.
- **New:** Improved Support for Multi-threaded Applications: Extends the `mpctl(2)` API and adds several new APIs to improve HP-UX support for multi-threaded applications. Provides the capability to have finer-grain control.
- Java 2 Standard Edition Platform
  - Java JDK/JRE for HP-UX: JDK/JRE version 5.0 and SDK/RTE 1.4.2 have been updated to incorporate defect and security bulletin fixes.
  - Java Out-of-Box: Updated to version 2.05.00 to incorporate defect fixes.
- **New:** Kernel Access Infrastructure: HP-UX Virtual Memory provides a new set of APIs to map user virtual addresses into the kernel. Useful as a copy avoidance solution where user data can be accessed and modified by kernel contexts, avoiding the copying in and out of data when system calls are invoked.
- **New:** `libc` Enhancement: Contains a new API called `memsetU16(3C)`, which can be used for memory operations to set area in memory to contain 2-byte word. Delivered as an optional product in all OEs.
- **New:** `patch_active_text`: Allows `mprotect()` write access to the text of a running process such that the active text can be modified.

### **March 2008 Release Notes, Chapter 11: "Internationalization"**

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

### **March 2008 Release Notes, Chapter 12: "Other Functionality"**

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

# What is new in the HP-UX 11i v3 September 2007 release

The following summaries provide a general picture of how the September 2007 release of HP-UX 11i v3 differs from the initial (February 2007) release of HP-UX 11i v3. 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 (HWE`enable11i`): Provides patches required for new systems and the latest Intel® Itanium® 2 processors, and for add-on hardware supported on HP-UX 11i v3, including I/O adapters and devices.
- **New:** HP Instant Support Enterprise Edition: Updated to version A.03.95.510.42.07 to incorporate defect fixes.
- Mass Storage Stack: New options to manage multi-pathed disks and disk arrays.
- I/O Subsystem: More networking & I/O drivers are DLKM-enabled, which means they can be dynamically loaded and unloaded from the HP-UX kernel without manually rebuilding the kernel or rebooting the system.
- Networking and Mass Storage Drivers
  - Required Networking Drivers
    - `10GigEthr-00`: Updated to support UDP traffic over the destination port-based multi-queues and to display vital product data (vpd) by using the `nwmgr` command. DLKM-enabled.
    - `GigEther-00`: DLKM-enabled and defect fixes.
    - `GigEther01`: DLKM-enabled.
    - `IEther-00` and Gigabit Ethernet: AD337A and AD338A PCI-Express is now supported; `iether` is DLKM-enabled.
    - `100BT (btlan)`: DLKM-enabled.
    - Ultra160 SCSI (`c8xx`): Driver is DLKM-enabled, but not all modules in patch are DLKM compliant.
  - Optional Networking Drivers
    - InfiniBand Clustering System: Supports additional PCIe cards; DLKM-enabled.
  - Required Mass Storage Drivers
    - `CommonIO` bundle: Support for additional FC HBAs; delivers SAS-COMMON, which contains utilities for managing specific SAS HBAs; delivers FC-COMMON, which contains utilities for managing specific FC HBAs.
    - `FibrChan1-00`: DLKM-enabled.
    - `FibrChan1-01`: DLKM-enabled. Defect fixes.
    - `RAID-01`: DLKM-enabled.
    - `scsiU320-00`: DLKM-enabled.
    - `SerialSCSI-00`: DLKM-enabled.
    - `USB-00`: Updated to version C.01.05.02 to incorporate defect fixes.
- Utility Pricing Solutions
  - `iCAP` (Instant Capacity): `GiCAP` disaster recovery, changes to `TiCAP` transfer and consumption; changes to `icapstatus` output; defect fixes.

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

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

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

## September 2007 Release Notes, Chapter 6: "Disk and File Management"

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

## September 2007 Release Notes, Chapter 7: "Internet and Networking"

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

## September 2007 Release Notes, Chapter 8: "Security"

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

## September 2007 Release Notes, Chapter 9: "Commands and System Calls"

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

## September 2007 Release Notes, Chapter 10: "Libraries and Programming"

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

**September 2007 Release Notes, Chapter 11: "Internationalization"**

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

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

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

## What is new in the initial (February 2007) HP-UX 11i v3 release

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

<http://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:

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



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**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>.

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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 “What is New for Customers Migrating from HP-UX 11i v2 June 2006” (page 68) for a general picture of how the initial (February 2007) release of HP-UX 11i v3 differs from the June 2006 release of HP-UX 11i v2.

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

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



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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

- HP-UX Secure Shell: Updated to version A.04.40.005 with many new features including high performance enabled SSH/SCP patch; configuration directives in the server; auth selection patch; increase in the default size of RSA and DSA keys; delayed compression; and many other features, as well as defect fixes.
- HP-UX Security Attributes Configuration tool (*secweb*): Updated to support long user name.
- **New:** HP-UX Standard Mode Security Extensions: Enhances the security of systems running in standard mode by providing security features that were previously available only on systems that had been converted to trusted mode.
- Install-Time Security: Adds a security step to the install/update process that allows you to run the Bastille security lockdown engine during system installation with one of four configurations ranging from default security to “DMZ.”
- Kerberos Client: Updated to version 1.3.5.03 with new features including support for powerful cryptographic algorithms like 3DES, RC4, and AES; support for IPv6; support for TCP; and defect fixes.
- OpenSSL: Updated to version A.00.09.08d.001 with support (in default version) for several hardware ENGINES (see section for specifics); support for elliptic curve cryptography; and EVP, the library of which provides a high-level interface to cryptographic functions. Other provided versions include other features.
- PAM Kerberos: Enhanced to issue a warning if *rc\_host\_0* is owned by anyone other than root when a user tries to *rlogin* into a system; will also issue a warning if the keytable entry is not found for the host service principal on the client but present at the KDC.
- **New:** Security Patch Check: Analyzes the currency of a system with respect to security bulletins. Recommends actions for security vulnerabilities that have not been fixed by patches, updates, or logged manual actions currently applied to the system.

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

- */etc/skel/.profile* shell script: *.* (current path) in *\$PATH* is deprecated
- 32-bit *pstat* System Call (Deprecated): When compiling a 32-bit application that uses the *pstat* () system call, the compiler option *-D\_PSTAT64* must now be specified. This causes *pstat* () to use 64-bit fields rather than 32-bit fields. The application still remains a 32-bit application.
- *at*, *cron*, and *batch* Commands: New features include support for queueing multiple jobs at the same time, support for queueing of more than 100 jobs, and ability to schedule jobs up to the *njob* limit specified for every queue in *queuedefs(4)*.
- *core* Format Implementation Change: The true version string has replaced the *ut\_sname* struct in the *CORE\_KERNEL* segment. A workaround has been provided for applications which reversed-engineered the *core* file format and depend on *ut\_sname* being in it. This new *core* file format is the default format.
- *cs* Command Line Interpreter: The non-interactive invocation of *cs* will not source the *~/ .history* file by default.
- File Systems Backup and Recovery Commands *fbackup*, *frecover*, and *ftio*: Deprecated; will be obsolete in a future HP-UX release. You should prepare by migrating to the favorable replacement *pax*. Support will be continued for archive retrieval.
- **New:** *gcore* Command: creates a core image of each specified process.
- *getgroups* (), *setgroups* (): no longer limited by the *NGROUPS\_MAX*.
- *getty* Command: Enhanced to configure the default setting for special control characters (erase, kill, etc.) by the user.
- HP-UX Kernel Configuration Commands: HP-UX 11i v1 kernel configuration commands has been removed in favor of new commands for HP-UX 11i v3. In addition, there are changes to the location of kernels and related files on disk; to the manner in which a kernel configuration is chosen at boot time; and to the manner in which the system automatically maintains a backup kernel configuration.



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

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

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

- Bundled C Compiler: Updated to version A.06.12 on Itanium®-based servers and B.11.11.16 on PA-RISC. Highly compatible with previous versions; diagnostic messages have changed; more erroneous and suspicious source constructs are diagnosed.
- aC++ Run Time Library: Includes the `-AA -D_HP_NONSTD_FAST_IOSTREAM` performance improvement macro, C++ Standard Library TC1 compliance change, and USA 2007 Daylight Savings Time legislation support.
- Dynamic Loader (`dld.so`): Since patch PHSS\_32864, September 2005, `dld.so` has enabled large kernel page size, support for loading unaligned shared libraries and executables, and other changes.
- FirstBoot: As part of Transition links (a.k.a. Upgrade), HP used to create a symbolic link `/etc/set_parms -> /sbin/set_parms`. Transition links are obsoleted in HP-UX 11i v3 and `set_parms` is available to the user as `/sbin/set_parms`. So HP-UX 11i v3 will not support the symbolic link `/etc/set_parms`.
- HP MLIB: Updated to version 9.5 with the addition of two new libraries, VECLIBSC8 and LAPACKSC8, which are 64-bit address libraries with 64-bit integer values that use calling conventions similar to those found in Cray’s SCILIB math library.
- HP MPI: Updated to version 2.2 with several new features, including C++ bindings, new `mpirun` command line launch options, MPI-2 supported ROMIO, and other new features.
- HP-UX C Library (`libc`)
  - HP-UX C library (`libc`) - UNIX 2003 Standard Compliance: `libc` library enhanced to comply with UNIX 2003 standards. A number of APIs have been added, while some APIs have been modified.
  - HP-UX C library (`libc`) - Other Changes: New features include support for large PID, large `uname` and `hostname`, Tru64 API migration, `malloc(3C)` thread local cache enhancements, long `username` and `groupname`.
  - `libc.1` Library: Deprecated. Is a HP-UX 10.20 compatibility “C” library available in HP-UX 11i. No immediate impact in HP-UX 11i v3. When the `libc.1` library is obsoleted, all programs linking to this library will not work. Hence you are encouraged to start migrating your programs from `libc.1` to `libc.2` library.
  - Networking `libc` APIs: Networking APIs `getnameinfo()` and `getaddrinfo()` now look into the repositories specified with the `hosts` directive of the `/etc/nsswitch.conf` file, as well as those specified in the `inodes` directive, to resolve an IPv4 address. Includes additional changes.
- HP-UX Color-Curses: `libcur_color` Library and Commands: Obsolete. Were declared deprecated in HP-UX 10.30 and are not available in HP-UX 11i v3 PA-RISC.
- Java 2 Platform
  - Java JDK/JRE for HP-UX: HP-UX 11i v3 does not include Java 1.3 and Java 3D (J3D 1.4). SDK/RTE version 5.0 has been updated to incorporate defect fixes.
  - Java Out-of-Box: Updated to incorporate defect fixes.

- **New:** libIO Library: `libIO.so` (for Itanium®-based systems) or `libIO.sl` (for PA-RISC systems) is a shared library, which provides APIs for accessing the HP-UX I/O subsystem information. The library will reduce the dependency on other HP-UX commands for I/O information.
- libpthread Library: Added new API, `pthread_setschedprio()`, to set scheduling priority of target thread.
- Link Editor (`ld`): Additional options and other changes since patch PHSS\_32864, September 2005.
- **New:** Mercury Library (`libhg`): Provides high performance interfaces between the user programs and the kernel making it possible to transfer key pieces of information back and forth at high speeds.
- Software Transition Kit (STK): Designed to help transition HP-UX applications from earlier versions of HP-UX to the latest version of HP-UX. Will not be available for HP-UX 11i v3.
- Threads Renice facility: Two new `pthread` APIs to change *nice* value of a thread in a multi-threaded process.
- UNIX 2003 Standard Profile Conformance: New functions and compiler conformance as defined in Single UNIX Specification version 3. The Precision Architecture (PA) systems will have most of the UNIX 2003 features available for applications. Since the C99 compiler will not be available on PA, full UNIX 2003 branding is not supported. Itanium®-based systems will fully conform and will be branded to UNIX 2003.

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

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

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

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

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

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

In the following summaries, you can obtain a general picture of how the initial (February 2007) release of HP-UX 11i v3 differs from the June 2006 release of HP-UX 11i v2. For further details, see the indicated chapters in the *HP-UX 11i Version 3 Release Notes*, available in its most current version at <http://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 56) for a general picture of how the initial (February 2007) release of HP-UX 11i v3 differs from the September 2005 release of HP-UX 11i v1.

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

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

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

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

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

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

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

- HP Serviceguard Network File System (NFS) Toolkit: Updated to version A.11.31.02 with new control script template and a defect fix. Can work with Serviceguard A.11.17.01, but does not support some Serviceguard A.11.17.01 and NFS HP-UX 11i v3 features. Users who need VERITAS Cluster File System (CFS) should not upgrade to HP-UX 11i v3 until CFS is available on that platform.
- HP System Management Homepage: Updated to version A.2.2.5 to incorporate defect fixes. In addition, is the addition of the new Web-based solutions for Networking and Communications (*ncweb*), and Serviceguard complex management (*sgmgr*) being introduced for HP-UX 11i v3.
- HP Systems Insight Manager: Updated to “HP SIM 5.0 with Update 2 - HP-UX” with support for HP BladeSystem c-Class blade and enclosure, and onboard administrator; HP BladeSystem Integrated Manager 2.1 with updated functionality; minimum system memory configuration to run HP SIM on HP-UX 11i v3 is now 3GB, and defect fixes.
- HP WBEM Services for HP-UX: Updated to version A.02.05 with association providers, internationalization support for CIM operations, CIM schema upgrade, and other major changes.
- HP-UX Accounts for Users and Groups: New TUI in place of the legacy SAM interface; long user names and group names; NIS + Shadow mode can co-exist.
- HP-UX Kernel Configuration: Command preview support in TUI; TUI supports form-based inputs; supports Error Management Technology; includes critical defect fixes.
- **New:** HP-UX Large NPROC: The HP-UX 11i v3 system can support more processes running concurrently than previous releases, changing from 30,000 to 60,000.
- **New:** HP-UX Large PID: The range of Process Identifiers (PID) the kernel can generate in a stand-alone HP-UX system has been expanded from 0 ~ 30,000 to 0 ~ 2<sup>30</sup>-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 large files and large file system.
  - Library RPC: Library routines support several new datatypes, add support for IPv6, and more.
  - Network File System (NFS) Services: Provides numerous enhancements, including `pcnfsd` daemon, which is multithreaded and supports shadow password and Secure RPC; new user mode daemon generates and validates API security tokens, and maps the GSSAPI principal names to the local user and group IDs; additional security mechanisms, such as Secure NFS that supports Kerberos through GSSAPI; NFS access using a firewall; and many other features.
  - Network Information Service (NIS): Provides several new features including support for shadow mode; support for enabling DNS forwarding mode; support for long `uname`, `hostname`, and `username`; and other features.
  - NIS+: Obsoleted.
  - PCNFSD: `pcnfsd` daemon is multithreaded. Support for shadow password and secure RPC; support for printer names up to the PCNFSD protocol limitation of 64 characters.
- **New:** Unified File Cache: Integrates the page cache and buffer cache to provide coherency for file access. Serves as a key enabler for VxFS 4.1 and ONC+2.3. Improves source compatibility with Solaris, Tru64, and Linux applications that depend on coherency of page and buffer cache. Potential performance improvement of applications that depend on coherency of page and buffer cache.
- VERITAS File System (VxFS): Features in version 4.1 include VxFS filesystem as a DLKM; multi-device filesystems; checkpoint enhancements; portable data enhancements; and other features. Cluster File System (CFS) is not supported in the initial release of HP-UX 11i v3.
- VERITAS Volume Manager (VxVM): Features in version 4.1 include support for Volume Sets and VxFS MDS; Cross-Platform Data Sharing; Device Discovery Layer Phase 2; Serial Split Brain; and other features. Cluster Volume Manager (CVM), a part of VxVM that is enabled by a separate license, is not being provided with the current 4.1 HP-UX 11i v3 release.

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

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

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

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

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

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

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

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

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

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

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

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

- *libc(1)* Library: Deprecated. Is a HP-UX 10.20 compatibility “C” library available in HP-UX 11i. No immediate impact in HP-UX 11i v3. When the *libc(1)* library is obsoleted, all programs linking to this library will not work. Hence you are encouraged to start migrating your programs from *libc(1)* to *libc(2)* library.
- Networking *libc* APIs: The return value of the *gai\_strerror(3N)* API has changed from `char` to `const char`. Includes other changes as well.
- HP-UX Color-Curses: *libcur\_colr* Library and Commands: Obsolete. Were declared deprecated in HP-UX 10.30 and are not available in HP-UX 11i v3 PA-RISC.
- Java 2 Platform
  - Java JDK/JRE for HP-UX: HP-UX 11i v3 does not include Java 1.3 and Java 3D (J3D 1.4). SDK/RTE version 5.0 has been updated to incorporate defect fixes.
  - Java Out-of-Box: Updated to incorporate defect fixes.
- **New:** *libIO* Library: *libIO.so* (for Itanium®-based systems) or *libIO.sl* (for PA-RISC systems) is a shared library, which provides APIs for accessing the HP-UX I/O subsystem information. The library will reduce the dependency on other HP-UX commands for I/O information.
- *libpthread* Library: Added new API, *pthread\_setschedprio()*, to set scheduling priority of target thread.
- Link Editor (*ld*): Additional linker options introduced since patch PHSS\_34440, June 2006, and other changes.
- Mercury Library (*libhg*): Provides high performance interfaces between the user programs and the kernel making it possible to transfer key pieces of information back and forth at high speeds.
- Software Transition Kit (STK): Designed to help transition HP-UX applications from earlier versions of HP-UX to the latest version of HP-UX. Will not be available for HP-UX 11i v3.
- Threads Renice facility: Two new *pthread* APIs to change *nice* value of a thread in a multi-threaded process.
- UNIX 2003 Standard Profile Conformance: New functions and compiler conformance as defined in Single UNIX Specification version 3. The Precision Architecture (PA) systems have most of the UNIX 2003 features available for applications. Since the C99 compiler will not be available on PA, full UNIX 2003 branding is not supported. Itanium®-based systems fully conform and are branded to UNIX 2003.
- Unwind Library (*libunwind*): Updated to version 1.48. Performance of the unwind express APIs has been improved substantially; *U\_STACK\_TRACE(3X)* and *\_UNW\_STACK\_TRACE(3X)* APIs have been enhanced; new APIs have been added to the unwind express portion of the library.

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

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

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

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

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



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

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## 4 Hardware-specific information

This chapter provides information regarding supported systems, as well as other information about software that is hardware related.

### Hardware Enablement Bundle for HP-UX 11i v3

The Hardware Enablement Patch Bundle for HP-UX 11i v3 (`HWEenable11i`) provides patches required for new systems and for add-on hardware supported on HP-UX 11i v3, including I/O adapters and devices.

#### Summary of Change

For the September 2010 OE Update release, the `HWEenable11i` bundle provides support for new HP Integrity Server Blades, along with HP-UX support for older HP servers using PA8900 processors or Intel Itanium processors. Minimal HP-UX support requires other HWE components from this OE Update release that include the diagnostic products, WBEM Providers, 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 `HWEenable11i` bundle includes new HP-UX 11i v3 patches for support of the latest HP Integrity systems with new Core I/O and chipsets. New patches have also been added for support of the AMD/ATI FireMV 2250 graphics adapter and future I/O adapters.

#### 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 `HWEenable11i` patch bundle is available from the IT Resource Center (ITRC) website: <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 ITRC website: <http://itrc.hp.com>.

For further information, see <http://itrc.hp.com>. Click **maintenance and support for hp products**. Then, click **standard patch bundles**.

Also see the latest editions of the following documents 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 11i v3 Release Notes*

#### Obsolescence

Not applicable.

# Mass Storage Stack

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

## Summary of Change

Storage manageability is enhanced with the Storage Enclosure Framework feature. Defect fixes are also included in this release.

## Impact

HP-UX systems are often deployed in environments where mass storage devices (for example, disks) are contained in separate hardware platforms known as storage enclosures. An HP-UX system can be connected to multiple enclosures, each containing many storage devices. The Storage Enclosure Framework enables HP-UX to identify enclosures attached to the system and to identify the LUNs, lunpaths, target paths, and target ports associated with an enclosure. For more information, see *scsimgr*(1M).

## 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, see “The Next Generation Mass Storage Stack” white paper at <http://hp.com/go/hpux-core-docs> (click **HP-UX 11i v3**).

For information on new or modified commands, see their associated manpages. In particular, the *scsimgr*(1M) manpage describes the changes to *scsimgr*.

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

- PHKL\_40922 11.31 esctl cumulative patch
- PHKL\_41006 11.31 esdisk cumulative patch
- PHCO\_40921 11.31 scsimgr cumulative patch
- PHKL\_41093 11.31 io cumulative patch

## 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, see the HP-UX Server Support Matrix at the following website:

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



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**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/workstationsupport>

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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>

## Finding firmware

Make sure your system meets the minimum firmware requirements for the latest HP-UX 11i v3 (B.11.31) release. HP recommends that you update to the latest firmware available before installing or updating to HP-UX 11i v3.

## Verifying and downloading firmware

1. Go to <http://www.hp.com>.
2. Select the **Support & Drivers** tab, then **Download drivers and software**.
3. Enter your product name or number and click **Go**.
4. If necessary, select your specific product from the search results.
5. Choose the OS or **Cross operating system (BIOS, Firmware, Diagnostics, etc.)**
6. Click the bundle to see release notes and other information.
7. See the release notes or installation instructions to verify you have the latest firmware version.
8. If necessary, click **Download** to download the firmware bundle.

## Receiving firmware alerts

To automatically receive email notices for the latest firmware updates, sign up for Driver, Patch, Security and Support alerts:

1. Go to <http://www.hp.com/go/myhpalerts>.
2. Follow the instructions to register each of your products.



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# 5 General system administration

This chapter presents information of particular interest to system administrators.

## Feature Enablement Patch Bundle - Feature 11i

The FEATURE11i bundle consists of patches that enhance core features or are required to 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 September 2010 release, the FEATURE11i bundle is updated for HP-UX 11i v3 with patches that enhance or provide new or improved core features. The improvements include performance improvements in scheduling and boot time, filesystem improvements, Internationalization improvements, and support for HP-UX N\_Port ID Virtualization and storage enclosure identification associated with LUNs, LUN paths, target paths, and target ports.

### Impact

The patches in this bundle have undergone extensive testing and have received greater exposure than most patches downloaded individually from the HP Patch Hub. All dependencies for patches in this bundle have been resolved.

### Compatibility

There are no known compatibility issues.

### Performance

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 ITRC website: <http://itrc.hp.com>.

For further information, see <http://itrc.hp.com>. Click **maintenance and support for hp products**. Then, click **standard patch bundles**.

Also see the latest editions of the following documents 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 11i v3 Release Notes*

### Obsolescence

Not applicable.

## 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 (*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

For the Accounts for Users and Groups product, 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 previously by the HP SAM application to list users and directories that were to be excluded from removal.
- UID and *passwd*s 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 Kernel Configuration (*kcweb*)

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

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

## Summary of Change

This release of Kernel Configuration includes fixes for a customer-reported problem and internally found issues.

## Impact

This release of Kernel Configuration has no known customer impact.

## Compatibility

There are no known compatibility issues.

## Performance

There are no known performance issues.

## Documentation

- Kernel Configuration Help
- *kcweb*(1M) manpage
- *sam*(1M) and *smh*(1M) manpages
- Also see the *kcalarm*(1M), *kcmond*(1M), *kconfig*(5), *kconfig*(1M), *kcmodule*(1M), *kctune*(1M), *kclg*(1M), *kcpath*(1M), *kcusage*(1M), and *system*(4) 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 *olrad* command and peripheral devices reported by *ioscan* command.

Peripheral Devices Manager can be used to add/replace/delete an OLRAD capable card online, view the devices reported by *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 the product includes fixes for internally found issues.

## 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) manpage

## Obsolescence

Not applicable.

## Insight managed system setup wizard

HP Insight managed system setup wizard A.6.0.1 configures systems to enable them to be managed by HP Systems Insight Manager software (HP SIM) and its plug-in applications.

The managed system setup wizard eases configuration of systems for many HP Insight software products and features, including Insight Dynamics, Insight Control, and HP SIM.

## Summary of Change

HP Insight managed system setup wizard A.6.0.1 supports new hardware and supports upgrading from previous releases of the wizard.

## Impact

Before running the wizard after installing or upgrading it, you must also configure HP SIM and configure Insight managed system setup wizard using the `msswinitconfig -a` command. For details see the *msswinitconfig*(1M) manpage.

## Compatibility

There are no known compatibility issues.

## Performance

There are no known performance issues.

## Documentation

- *msswinitconfig*(1M) manpage
- *Insight Managed System Setup Wizard 6.0 Getting Started Guide* at <http://www.hp.com/go/insightsoftware/docs>

## Obsolescence

Not applicable.

## 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 issues.

## 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.

## 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.



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

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



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

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- 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

## 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 by customers for the proactive update and maintenance of their HP-UX systems. Customers 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 bundle "readme" document can be found on the OE media under the /DOCS/PATCH directory, or on the ITRC website: <http://itrc.hp.com>.

For further information, see <http://itrc.hp.com>. Click **maintenance and support for hp products**. Then, click **standard patch bundles**.

Also see the latest editions of the following documents 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 11i v3 Release Notes*

## Obsolescence

Not applicable.

## Tunable for aggressive kernel memory caching

For certain type of kernel-intensive workloads, choosing larger memory pages for kernel allocations exhibits good performance characteristics. Kernel needs to aggressively cache and pre-allocate the pages to be able to reduce Translation Lookaside Buffer (TLB) misses and improve the performance of such workloads.

## Summary of Change

The tunable *kmem\_aggressive\_caching* is provided to give you control over the caching and pre-allocation of kernel memory pages. The *kmem\_aggressive\_caching(5)* manpage has detailed information on the usage.

## Impact

For a kernel-intensive workload, setting the tunable to its maximum would reduce the number of TLB entries to a great degree, thereby enhancing the performance of the workload.



**CAUTION:** Do not use this tunable in an HP Virtual Machines environment. The tunable's default value *off* ensures full compatibility in all environments.

---

## Compatibility

When the tunable is set to its default value *off*, it is compatible in all environments. Do not use this tunable in an HP Virtual Machines environment.

## Performance

Certain types of kernel workloads that consume a large amount of kernel memory may notice improvements due to reduced TLB misses. On systems where the amount of kernel memory consumption is low, the kernel may consume a larger amount of memory than before, leaving user applications with less memory.

## Documentation

For further information, see the manpage *kmem\_aggressive\_caching(5)*.

## 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 reflect defect fixes. There are no new features or functionality in update-ux.

## Impact

There is no impact.

## Compatibility

There are no known compatibility issues.

## Performance

There are no known performance issues.

## Documentation

For further information see the following:

- The *update-ux*(1M) manpage.
- The latest *HP-UX 11i v3 Installation and Update Guide* at <http://hp.com/go/hpux-core-docs>.

## Obsolescence

Not applicable.

## Utilization Provider

The Utilization Provider version A.01.08.05.01 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.

## Summary of Change

The Utilization Provider for HP-UX 11i v3 has been updated to version A.01.08.05.01 to support HP Insight Dynamics version 6.0.1.

## 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, see <http://www.hp.com/go/insightdynamics-manuals>.

## Obsolescence

Not applicable.



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# 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 & 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 & File Systems can be started from the HP SMH and HP Systems Insight Manager (HP SIM).

The Disks & 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 `disklist` command is now fixed to display a disk as “Used” if the volume group configured on it is deactivated. A few internally found issues are fixed.

### Impact

This release of Disks & File Systems has 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:

- Disks and File Systems help
- `fsweb(1M)`, `sam(1M)` and `smh(1M)` manpages

### Obsolescence

Not applicable.





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# 7 Internet and networking

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

## Service Location Protocol (SLP)

The Service Location Protocol (SLP) is an Internet standard network protocol that provides a framework to allow networking applications to discover the existence, location, and configuration of networked services in enterprise networks. SLP implementation on HP-UX is based on OpenSLP version 0.8.0 developed by Caldera Systems, Inc.

SLP facilitates the following:

- Client application requests for network service location information
- Advertisement of services
- Segregation of services and users into logical or functional groups
- Managed recovery from primary server failures

The following lists the salient features of SLP:

- Dynamic Service Tracking
- Ease of Administration
- Ease of Development

## Summary of Change

SLP version B.11.31.1009 has been packaged with updated attributes that avoid certain products from being skipped during an OS update.

## Impact

There is no impact.

## Compatibility

There are no known compatibility issues.

## Performance

There are no known performance issues.

## Documentation

See *HP-UX IP Address and Client Management Administrator's Guide* at <http://hp.com/go/hpux-networking-docs>.

The main manpages associated with this product are as follows:

- *slpd*(1M)
- *slpdc*(1M)
- *libslp*(3N)
- *SLPError*(3N)
- *slp.conf*(4)
- *slp.reg*(4)
- *slp\_syntax*(7)

## Obsolescence

Not applicable.



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# 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, as well as the auditing subsystem, without having to convert the system to Trusted mode.

The software provides both web-based graphical user interface (GUI) and text user interface (TUI). You can start the tool from HP System Management Homepage (HP SMH) or HP Systems Insight Manager (HP SIM), or by using the `secweb` command.

### Summary of Change

This 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:

- Auditing and Security Attributes Configuration help
- `secweb(1M)` manpage
- `audit(5)` manpage
- `sam(1M)` and `smh(1M)` manpages

### Obsolescence

Not applicable.



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## 9 Commands and system calls

This chapter provides information about new and changed commands and system calls.

### `iocdsfd(1M)` and `io_cdsf_config(1M)`

The `io_cdsf_config(1M)` command and the `iocdsfd(1M)` daemon are newly delivered with the HP-UX 11i v3 September 2010 Update Release or through PHCO\_40899.

#### Summary of Change

Cluster-wide device special files reference the same name for all shared devices across a cluster. The `io_cdsf_config(1M)` command and `iocdsfd(1M)` daemon, along with the HP Serviceguard A.11.20 product, are required to support the cluster-wide device file feature. For further information, see the *HP Serviceguard A.11.20 Release Notes* at <http://hp.com/go/hpux-serviceguard-docs>.

This feature is enabled through patches in the `FEATURE11i` bundle. If you wish to install the feature separately from the OE, see the *Patch Management User Guide for HP-UX 11.x Systems* at <http://hp.com/go/hpux-core-docs> for further information.

#### Impact

Manageability of shared devices is easier, as those shared devices will have a same device-special names across the cluster nodes.

#### Compatibility

There are no known compatibility issues.

#### Performance

There are no known performance issues.

#### Documentation

See the manpage for `io_cdsf_config(1M)` installed with HP-UX 11i v3 September 2010. Also see the `intro(7)` manpage and *HP Serviceguard A.11.20 Release Notes* at <http://hp.com/go/hpux-serviceguard-docs>.

#### Obsolescence

Not applicable.

### `ioscan(1M)`

The `ioscan` command scans system hardware, usable I/O system devices, or kernel I/O system data structures as appropriate, and lists the device information.

- The `-m` option of `ioscan(1M)` displays mapping information. This option, when used along with keywords such as `lun`, `dsf`, or `hwpath`, displays mapping information according to the keyword specified.

#### Summary of Change

The `-m` option of the `ioscan(1M)` command has been enhanced to accept new keywords `resourcepath` and `cluster_dsf`:

- The `resourcepath` keyword can be used to obtain mappings between hardware path, physical location, and resource path. Along with `-m`, the existing option `-H` can be used to

restrict listings. With the `-F` option, `-m` generates a compact listing of information separated by colons (:). Fields separated are Hardware path, Physical location, and Resource path. The `-m` option generates output only on upcoming new platforms of HP.

- The `cluster_dsf` keyword can be used to list mappings between cluster-wide, legacy, and persistent special files. This keyword accepts a cluster-wide, a legacy, or a persistent special file as the argument. This keyword will provide information only if there are cluster-wide special files present on the system; otherwise, no information is provided.

This feature is enabled through patches in the `FEATURE11i` bundle. If you wish to install the feature separately from the OE, see the *Patch Management User Guide for HP-UX 11.x Systems* at <http://hp.com/go/hpux-core-docs> for further information.

## Impact

See the preceding “Summary of Change.”

## Compatibility

There are no known compatibility issues.

## Performance

There are no known performance issues.

## Documentation

See the manpage of `ioscan(1M)` installed with HP-UX 11i v3 September 2010. To obtain PHCO\_41170 11.31 `ioscan(1M)` Japanese manpage cumulative patch, go to the IT Resource Center at <http://itrc.hp.com>.

## Obsolescence

Not applicable.

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# 10 Libraries and programming

This chapter covers a variety of changes of particular interest to programmers, such as changes to compilers, editors, and libraries. For changes to products and features related to this chapter, see “What is new in the HP-UX 11i v3 September 2010 release” (page 16).





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# 11 Internationalization

This chapter describes changes internationalization functionality, including text fonts and converters relating to various international languages. There are no changes in September 2010 for the products or features that are normally documented in this chapter.



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## 12 Other functionality

This chapter covers additional applications or functionality in the Operating Environments. For changes to products and features related to this chapter, see “What is new in the HP-UX 11i v3 September 2010 release” (page 16).



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# 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](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](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, complete the form at <http://hp.com/bizsupport/feedback/ww/webfeedback.html>.

Include the document title and manufacturing part number. All submissions become the property of HP.

## Related information

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**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.

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### 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](http://h18004.www1.hp.com/products/quickspecs/12079_div/12079_div.PDF)
- HP-UX Server Support Matrix  
<http://www.hp.com/go/hpuxservermatrix>
- HP\_UX\_Docs Twitter account  
[http://www.twitter.com/HP\\_UX\\_Docs](http://www.twitter.com/HP_UX_Docs)

### 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>).



**NOTE:** The most current HP-UX manpages are installed with the product or patch and can be viewed using the man command.

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- 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](http://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/software/releases/releases-media2/index.html>
- Developer & Solution Partner Program (DSPP)  
<http://www.hp.com/dspp>

## Typographic conventions

The following conventions are used in this document:

<code>audit(5)</code>	An HP-UX manpage. <i>audit</i> is the name and 5 is the section in the <i>HP-UX Reference</i> . From the HP-UX command line, enter “man audit” or “man 5 audit” to view the manpage. See <i>man(1)</i> .
<i>Book Title</i>	The title of a book.
<i>Emphasis</i>	Text that is emphasized.
<b>Emphasis</b>	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.
<b>UserInput</b>	Commands and other text that you type.
<i>Variable</i>	The name of a variable that you may replace in a command or function or information in a display that represents several possible values.
[ ]	The contents are optional in formats and command descriptions.
{ }	The contents are required in formats and command descriptions. If the contents are a list separated by  , you must choose one of the items
...	The preceding element may be repeated an arbitrary number of times.
	Separates items in a list of choices.
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.