HP-UX 11i Version 2 March 2004 Release Notes

HP Integrity Servers and HP Workstations

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Acknowledgements

Publication History

The manual's publication date and part number indicate its current edition. The publication date changes when a new edition is released. The manual part number changes when extensive changes are made.

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

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

    March 2004, Edition 1, 5990-6739

    Instant Information DVD and Web at **http://www.docs.hp.com**

New editions of this manual incorporate all material updated since the previous edition. For the latest version, see the HP-UX 11i Version 2 documentation on the Web at:

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

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Or, use this Web form to send us feedback:

http://www.docs.hp.com/assistance/feedback.html

Typographic Conventions

We use the following typographical conventions.

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

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Contents

1 Overview of the Release Notes

What's in This Chapter?

The purpose of this chapter is to help you use these release notes along with related HP-UX documentation effectively. The following topics are covered in this overview:

- What's the Purpose of the HP-UX Release Notes? (see page 10)
- Where Should I Begin? (see page 11)
- Locating Release Notes for Previous Versions of HP-UX (see page 12)
- Other Sources of Information about This Release (see page 13)
- What's in the Remaining Chapters? (see page 15)

What's the Purpose of the HP-UX Release Notes?

The *HP-UX 11i Version 2 Release Notes* document describes what is new, has changed, or has been deprecated or obsoleted in the current release as compared to the previous HP-UX 11i v2 release. In the case of the initial *HP-UX 11i Version 2 Release Notes* (October 2003), changes are described in relation to the HP-UX 11i v1.6 release.

As with other HP-UX release notes, the *HP-UX 11i Version 2 Release Notes* does not completely document all the features of this release. Instead, it contains high-level information and pointers to more detailed operating system and product-specific documentation. Where appropriate, it also notes changes in the support of products. These release notes apply only to features that are part of the HP-UX 11i v2 Operating Environments.

Additional product-specific release notes files are often located in the `/opt` directory, in sub-directories named *[name]*`/newconfig/RelNotes` (where *name* represents the name of the product). For example, Distributed Computing Environment (DCE) release notes are loaded in the `/opt/dce/newconfig/RelNotes` directory.

Where Should I Begin?

This book is organized in such a way that you need only read Chapter 3, "What's New at a Glance," on page 29 for a quick overview of what is new, has changed, and has been deprecated or obsoleted in the current and previous releases of HP-UX 11i v2.

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

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

- The HP-UX Instant Information media. See "HP-UX 11i v2 Instant Information Media" on page 14 for more information.

- At the Web site `http://www.docs.hp.com/hpux/os/11iV2/`.

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

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

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

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

Information about the HP-UX 11i v1.6 release is available on the Web at

`http://www.docs.hp.com/hpux/os/11iV1.6/`

Additionally, you may want to familiarize yourself with the HP-UX 11i v1 release. This information is available on the Web at

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

Locating Release Notes for Previous Versions of HP-UX

Release notes are found in the following locations:

- HP-UX Instant Information DVD. See "HP-UX 11i v2 Instant Information Media" on page 14 for more information.

- The `/usr/share/doc/` directory of your HP-UX 11i v2 system. Please note, however, that the latest editions may not be contained in this directory and are instead located at `http://www.docs.hp.com/`.

- The HP Documentation Site at `http://www.docs.hp.com/`. Here you will find the release notes pertinent to all previous releases of HP-UX, as well as release notes for various individual products.

  See "The HP Documentation Web Site" on page 13 for more information.

Other Sources of Information about This Release

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

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

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

Read Before Installing or Updating to HP-UX 11i Version 2, MPN **5990-6741**

HP-UX 11i Version 2 Installation and Update Guide, MPN **5990-6728**

HP-UX 11i Version 2 Reference, MPN **B2355-60103**

*Managing Systems and Workgroup*s, Edition 6, MPN **5187-2216**

Ignite-UX Administrator's Guide, Edition 11 MPN **B2355-90788**

Software Distributor Administrator's Guide, MPN **B2355-90789**

Software Package Builder 1.0 User's Guide, MPN **5187-4494**

HP-UX System Partitions Guide, MPN **5971-4742**

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

Of additional interest is the following document, which can be found in the "Networking and Communications" section of `http://docs.hp.com`:

HP-UX Networking Ports Reference Guide, MPN **5187-4242**

Additionally, the following Web sites may be of interest in obtaining a variety of information regarding the HP-UX 11i v2 release:

HP Integrity Servers: `http://www.hp.com/products1/servers/integrity/`

Intel® Itanium®-based Workstations:
`http://www.hp.com/workstations/itanium/index.html`

Product Manuals:
`http://h20000.www2.hp.com/bizsupport/TechSupport/ProductRoot.jsp?locale=en_US&contentType=SupportManual&docIndexId=179166`

HP Software Depot: `http://software.hp.com`

HP Software Releases and Media:
`http://www.software.hp.com/RELEASES-MEDIA/`

Software Availability Matrix: `http://software.hp.com/MATRIX/`

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

Developer & Solution Partner Program (DSPP): `http://h21007.www2.hp.com/dev/`

The HP Documentation Web Site

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

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

HP-UX 11i v2 Instant Information Media

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

HP-UX Welcome Page

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

Manual Pages

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

`http://www.docs.hp.com/hpux/os/11iV2/index.html#HP-UX%20Reference%20%28M anpages%29`

README Documents

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

White Papers on HP-UX

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

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

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

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

What's in the Remaining Chapters?

The remaining chapters of these release notes are as follows:

- Chapter 2, "Introduction to HP-UX 11i Version 2," on page 17, provides an overview of the five Operating Environments, along with a description of the Software Transition Kit.

- Chapter 3, "What's New at a Glance," on page 29, furnishes a quick overview of what is new, has changed, or has been deprecated or obsoleted in this and previous releases of HP-UX 11i v2.

- Chapter 4, "Workstation- and Server-Specific Information," on page 45, presents information regarding supported systems, networking and mass storage cards and drivers, and information that is server or workstation specific.

- Chapter 5, "General System Administration," on page 59, includes information of particular interest to system administrators.

- Chapter 6, "Disk and File Management," on page 81, presents information regarding directory, file system, and disk management.

- Chapter 7, "Internet and Networking," on page 85, covers changes to networking functionality and internet services.

- Chapter 8, "Security," on page 95, covers changes and enhancements to security services.

- Chapter 9, "Commands and System Calls," on page 99, includes information about new and changed commands and system calls.

- Chapter 10, "Libraries and Programming," on page 101, covers a wide variety of changes of particular interest to programmers, including changes to compilers, editors, and libraries.

- Chapter 11, "Internationalization," on page 107, presents information about text fonts and converters relating to various international languages.

- Chapter 12, "Other Functionality," on page 109, includes additional applications or functionality in the Operating Environments.

2 Introduction to HP-UX 11i Version 2

What's in This Chapter?

This chapter provides an introduction to HP-UX 11i v2, along with an overview of the five Operating Environments' features. Also described is the Software Transition Kit, which supports source code transition from HP-UX 11i v1.6 to HP-UX 11i v2.

- Welcome to HP-UX 11i Version 2 (see page 18)
- HP-UX 11i Release Names and Release Identifiers (see page 19)
- HP-UX 11i v2 Software and Driver Bundle Types (see page 20)
- HP-UX 11i v2 Operating Environments (see page 21)
  - Overview (see page 21)
  - HP-UX 11i v2 Foundation OE (FOE) (see page 22)
  - HP-UX 11i v2 Enterprise OE (EOE) (see page 23)
  - HP-UX 11i v2 Mission Critical OE (MCOE) (see page 24)
  - HP-UX 11i v2 Minimal Technical OE (MTOE) (see page 24)
  - HP-UX 11i v2 Technical Computing OE (TCOE) (see page 25)
- Software Transition Kit (see page 27)

Welcome to HP-UX 11i Version 2

HP-UX 11i version 2 is the newest release of HP-UX 11i for the Intel®Itanium® architecture. This enterprise release offers a full range of HP-UX Operating Environments, including systems management and high-availability software products. Itanium®-based systems offer significantly better price/performance and performance scalability than systems based on current architectures, and HP-UX 11i v2 provides the best way to preserve your investment through the transition from Precision Architecture Reduced Instruction Set Computing (PA-RISC) systems to Itanium-based systems.

Hewlett-Packard's enterprise computing business has carefully planned the transition to Itanium-based systems, placing a premium on customer and partner investment protection. HP-UX 11i v2 maintains compatibility with HP-UX 11i on PA-RISC through:

- Common "look and feel"

- Application Build Environment compatibility (source code compatibility)

- Data compatibility

- Binary compatibility

HP-UX 11i v2 offers these industry firsts for Itanium-based systems:

- Support for HP-UX 11i, Linux, and Windows running in separate hardware-based partitions on the same computer

- 64-way performance scaling

- iCOD (Instant Capacity on Demand) and Pay-Per-Use

HP-UX 11i v2 brings to Itanium-based systems the full power of HP-UX 11i, the #1 rated UNIX operating system in the world (DH Brown 2002 UNIX OS Review; see `http://www.hp.com/hpinfo/newsroom/press/2002/020530b.html`). HP-UX 11i version 2 on Itanium takes its place alongside HP-UX 11i version 1 on PA-RISC as an industry mainstay for mission critical enterprise applications.

HP-UX 11i Release Names and Release Identifiers

Each HP-UX 11i release has an associated release name and release identifier. The *uname* (1) command with the -r option returns the release identifier. The following table shows the releases available for HP-UX 11i.

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

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

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

```
# swlist | grep HPUX11i
```

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

```
HPUX11i-TCOE           B.11.23.0403 HP-UX Technical Computing Operating
Environment Component
```

In the above, the revision string shows:

B.11.23 = HP-UX 11i v2

0403 = March 2004 Update Release

HP-UX 11i v2 Software and Driver Bundle Types

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

- **Always-Installed**: Software and network driver bundles required by HP-UX 11i v2. Other always-installed bundles are also included as part of your operating environment. Examples include the core OS bundles, some software bundles, and some network and mass-storage drivers.

- **Default-Installed**: Software bundles that are installed by default. You can manually de-select the bundles before you install or update system. Examples include Mozilla Application Suite and the HP-UX Web Server Suite bundles.

- **Selectable**: Software bundles that are *not* installed or updated by default. You must manually select these bundles before you install or update your system. Examples include Ignite-UX and security.

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

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

HP-UX 11i v2 Operating Environments

Overview

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

*   **HP-UX 11i v2 Foundation OE (FOE)** — Designed for the demands of Web servers, content servers and front-end servers, this OE includes applications such as HP-UX Web Server Suite, Java, and Mozilla Application Suite. This OE is bundled as `HPUX11i-OE`. For more details, see "HP-UX 11i v2 Foundation OE (FOE)" on page 22.

*   **HP-UX 11i v2 Enterprise OE (EOE)** — Designed for database application servers and logic servers, this OE contains the HP-UX 11i v2 Foundation OE bundles and additional applications such as GlancePlus Pak to enable an enterprise-level server. This OE is bundled as `HPUX11i-OE-ENT`. For more details, see "HP-UX 11i v2 Enterprise OE (EOE)" on page 23.

*   **HP-UX 11i v2 Mission Critical OE (MCOE)** — Designed for the large, powerful back-end application servers and database servers that access customer files and handle transaction processing, this OE contains the Enterprise OE bundles, plus applications such as MC/ServiceGuard and Workload Manager to enable a mission-critical server. This OE is bundled as `HPUX11i-OE-MC`. For more details, see "HP-UX 11i v2 Mission Critical OE (MCOE)" on page 24.

*   **HP-UX 11i v2 Minimal Technical OE (MTOE)** — Designed for workstations running HP-UX 11i v2, this OE includes the Mozilla Application Suite, Perl, VxVM, and Judy applications, plus the OpenGL Graphics Developer's Kit. This OE is bundled as `HPUX11i-MTOE`. For more details, see "HP-UX 11i v2 Minimal Technical OE (MTOE)" on page 24.

*   **HP-UX 11i v2 Technical Computing OE (TCOE)** — Designed for both compute-intensive workstation and server applications, this OE contains the MTOE bundles plus extensive graphics applications and Math Libraries. This OE is bundled as `HPUX11i-TCOE`. For more details, see "HP-UX 11i v2 Technical Computing OE (TCOE)" on page 25.

The following table details the supported Operating Environments for HP Servers and Workstations:

Table 2-2   Supported Operating Environments for Servers & Workstations

	FOE	EOE	MCOE	MTOE	TCOE[a]
HP Commercial Servers	X	X	X		X
HP Workstations				X	X

a. Can be purposed as either a workstation or compute-intensive technical server.

HP-UX 11i v2 Foundation OE (FOE)

The HP-UX 11i v2 Foundation Operating Environment is the standard OE from which the Enterprise OE and Mission Critical OE have been derived by adding appropriate applications. The HP-UX 11i v2 Foundation OE includes the base 64-bit HP-UX operating system, plus the following features. (For an overview of the features that are new or have changed in this release, see Chapter 3, "What's New at a Glance," on page 29.)

Always-Installed Features

- Event Monitoring Service
- FDDI (PCI)
- FibreChannel (PCI)
- Gigabit Ethernet (PCI)
- Gigabit Ethernet Next Generation (PCI)
- Hardware Enablement
- HP CIFS Client
- HP CIFS Server
- HP WBEM Services for HP-UX
- HP-UX Kernel Configuration
- iEther (PCI)
- instant Capacity on Demand
- Logical Volume Manager
- nPartition Provider
- ONC+
- Online Diagnostics
- PAM Kerberos
- Peripheral Device Tool
- Runtime Plug-in (JPI) for Netscape/Mozilla for the Java™ 2 Platform v1.3 and v1.4
- scsiU320-00
- Software Distributor
- SWGETTOOLS
- Update-UX
- VERITAS File System (base VxFS/JFS)
- VERITAS Volume Manager (base)

Default-Installed Features

- GTK+ Libraries
- HP-UX Bastille
- HP-UX IPFilter
- HP-UX Secure Shell
- HP-UX Web Server Suite (including HP-UX Apache-based Web Server, HP-UX Tomcat-based Servlet Engine, HP-UX Webmin-based Admin, and HP-UX XML Web Server Tools)
- Install-Time Security
- Java SDK v1.3 and v1.4
- Judy Libraries
- Mozilla Application Suite
- Mozilla Source
- MySQL
- Partition Manager
- Perl

- Runtime Environment (RTE) for the Java™ 2 Platform v1.3 and v1.4
- Security Patch Check
- Servicecontrol Manager

Selectable Features

- ATM-00
- HP-UX Host Intrusion Detection System (HIDS) (servers only)
- HP-UX Install Utilities
- HyperFabric
- Ignite-UX
- Java (Out of Box) Tunable
- Pay Per Use
- PCI MUX
- RAID-01
- Security Level 10
- Security Level 20
- Security Level 30
- Software Package Builder
- Token Ring

HP-UX 11i v2 Enterprise OE (EOE)

The HP-UX 11i v2 Enterprise Operating Environment (EOE) is targeted especially for database application servers and logic servers. In addition to the features found in the HP-UX 11i v2 Foundation Operating Environment (described in "HP-UX 11i v2 Foundation OE (FOE)" on page 22), the Enterprise OE includes the following additional features. (For an overview of the features that are new or have changed in this release, see Chapter 3, "What's New at a Glance," on page 29.)

Always-Installed Features

- Event Monitoring Service
- MirrorDisk/UX
- VERITAS File System (full VxFS/OnlineJFS v3.5)
- GlancePlus Pak
- HP Process Resource Manager

Default-Installed Features

- See "HP-UX 11i v2 Foundation OE (FOE)" on page 22

Selectable Features

- See "HP-UX 11i v2 Foundation OE (FOE)" on page 22

HP-UX 11i v2 Mission Critical OE (MCOE)

The HP-UX 11i v2 Mission Critical Operating Environment (MCOE) is a high-availability Operating Environment for HP servers. In addition to the features found in the Foundation and Enterprise operating environments, the Mission Critical OE includes the following features. (For an overview of the features that are new or have changed in this release, see Chapter 3, "What's New at a Glance," on page 29.)

Always-Installed Features

- Enterprise Cluster Master Toolkit
- MC/ServiceGuard
- MC/ServiceGuard NFS Toolkit
- Cluster Object Manager
- Workload Manager
- Workload Manager Toolkits

Default-Installed Features

- See "HP-UX 11i v2 Foundation OE (FOE)" on page 22

Selectable Features

- See "HP-UX 11i v2 Foundation OE (FOE)" on page 22

HP-UX 11i v2 Minimal Technical OE (MTOE)

The Minimal Technical Operating Environment (MTOE) is the smallest and most fundamental OE that is defined specifically for HP workstations. It exists to offer an HP-UX 11i v2 solution to the customer who is interested in a low-cost HP Workstation and a correspondingly basic Operating Environment. The Minimal Technical Operating Environment is directed to the Workstation OEM market and to those customers for whom the Technical Computing Operating Environment (TCOE) is not a suitable solution.

The MTOE contains all the base functionality that is common to the other four OEs, including the base 64-bit HP-UX operating system, network drivers, and some of the other always-installed features. However, compared to the Technical Computing Operating Environment, the set of additional features is greatly reduced.

The HP-UX 11i v2 Minimal Technical Operating Environment includes the following features. (For an overview of the features that are new or have changed in this release, see Chapter 3, "What's New at a Glance," on page 29.)

Always-Installed Features

- Event Monitoring Service
- FDDI (PCI)
- FibreChannel (PCI)
- Gigabit Ethernet (PCI)
- Gigabit Ethernet Next Generation (PCI)
- Hardware Enablement
- HP WBEM Services for HP-UX
- HP-UX Kernel Configuration

- iEther (PCI)
- instant Capacity on Demand
- nPartition Provider
- ONC+
- Online Diagnostics
- OpenGL
- Peripheral Device Tool
- scsiU320-00
- Software Distributor
- Technical System Configuration (TechSysConf)
- SWGETTOOLS
- Update-UX
- USB
- VERITAS File System (base VxVS/JFS)
- VERITAS Volume Manager (base)

Default-Installed Features

- See "HP-UX 11i v2 Foundation OE (FOE)" on page 22

Selectable Features

- See "HP-UX 11i v2 Foundation OE (FOE)" on page 22

HP-UX 11i v2 Technical Computing OE (TCOE)

Like the Minimal Technical Operating Environment, the Technical Computing Operating Environment (TCOE) contains all the base functionality that is common to the other four OEs, including the base 64-bit HP-UX operating system, network drivers, and other always-installed functionality. While it is *not* a superset of the Foundation 11i v2 OE, it *is* a superset of the Minimal Technical OE. Unlike the Minimal Technical OE, however, the Technical Computing OE is available on both technical servers and workstations.

In addition to the features found in the Minimal Technical OE, the HP-UX 11i v2 Technical Computing Operating Environment includes the following features. (For an overview of the features that are new or have changed in this release, see Chapter 3, "What's New at a Glance," on page 29.)

Always-Installed Features

- HP CIFS Client
- HP CIFS Server
- PAM Kerberos
- Runtime Plug-in (JPI) for Netscape/Mozilla for the Java™ 2 Platform v1.3 and v1.4
- HP 3D Technology for the Java™ 2 Platform
- HP MLIB
- HP Message Passing Interface (MPI)

Default-Installed Features

- See "HP-UX 11i v2 Foundation OE (FOE)" on page 22

Selectable Features

- See "HP-UX 11i v2 Foundation OE (FOE)" on page 22

Software Transition Kit

Software Transition Kit (STK) version 1.9 has been updated to support source code transition from HP-UX 11i v1.6 to HP-UX 11i v2. The changes include a set of new impact pages, updated file scanning tools, updated documentation, and new HP-UX 11i v2 HTML manpages.

There have been thirty additional impacts added to the STK impact database to support the API transition from HP-UX 11i v1.6 to HP-UX 11i v2. Updated documentation can be found in the "Partner" and "Reference" sections, as well as in the new manpages.

The following documents have been added or updated:

- "Libm Library and Floating-Point Arithmetic for HP-UX on Itanium," available at `http://devresource.hp.com/STK/partner/fp_whitepaper.pdf`

- "Compiler Technical Overview" document, available at `http://devresource.hp.com/STK/partner/CompilersTechOverview.pdf`

- Updated Web site content at `http://devrsrc1.external.hp.com/STK/`

The STK product can be installed either from the Application Release CD (Product # **B4580AA**) or from the STK Web site:

Application Release CD Installation

To install your software, run the SD `swinstall` command. It will invoke a user interface that will lead you through the installation. For more information about installation procedures and related issues, refer to "Managing HP-UX Software with SD-UX" and related README, installation, and upgrade documentation provided or described in your HP-UX 11i operating system package.

Installation of STK from the STK Web Site

Please check out `http://devrsrc1.external.hp.com/STK/download.html` for instructions as how to download and install the STK product from the STK Web site.

3 What's New at a Glance

What's in This Chapter?

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

- What's New in the March 2004 Release? (see page 30)
- What's New in the Initial HP-UX 11i v2 Release? (see page 33)

What's New in the March 2004 Release?

The following changes pertain to the March 2004 HP-UX 11i v2 release. For further information, see the indicated pages in the remainder of this document.

Chapter 4: "Workstation- and Server-Specific Information" (see page 45)

- Hardware Enablement Program added to support new systems, processors, and I/O adapters. Support for optical devices updated. (See "Hardware Enablement Program" on page 46.)

- Networking and Mass Storage Drivers:

  — `FibrChanl-00` driver bundle updated to incorporate defect fixes.. (See "FibrChanl-00" on page 51.)

  — `FibrChanl-01` driver bundle now supports the A6826A card. (See "FibrChanl-01" on page 52.)

  — `FibrChanl-01` and `GigEther-01` driver bundles now support the A9782A and A9784A cards. (See "FibrChanl-01" on page 52 and "GigEther-01" on page 49.)

  — `GigEther-01` driver bundle now supports the A7109A card. (See "GigEther-01" on page 49.)

  — `IEther-00` driver bundle now supports the A7011A and A7012A cards. (See "IEther-01" on page 50.)

  — `RAID-01` driver bundle now supports the A9890A card. (See "RAID-01" on page 52.)

  — The `scsiU320-00` driver bundle added to pre-enable cards to be released in the future. (See "scsiU320-00" on page 52.)

- On Demand Solutions:

  — Instant Capacity on Demand (iCOD) updated to version 6.01 to incorporate defect fixes. (See "Instant Capacity on Demand" on page 53.)

  — Pay Per Use (PPU) updated to version 6.04 to incorporate defect fixes. (See "Pay Per Use" on page 54.)

- Xserver updated to version B.11.23.01 with support for multiple graphics cards. (See "Xserver" on page 56.)

Chapter 5: "General System Administration" (see page 59)

- Diagnostics (Online):

  — EMS Hardware Monitor added to monitor the operation of the iSCSI Software Initiator. IPMI Event Viewer Web Interface Tool added. (See "Diagnostics" on page 60.)

- HP Partitioning:

  — HP Process Resource Manager updated to version C.02.02 with support of a version option, support of SSL encryption of login/password data, more consistent `syslog` messaging, and other changes. (See "HP Process Resource Manager" on page 62.)

— HP-UX Workload Manager updated to version A.02.02 with a new GUI that allows local and remote management of WLM systems; automatic resizing of node partitions (nPars) that use iCOD software; support for more WLM configuration options by the Configuration Wizard; and other changes. (See "HP-UX Workload Manager" on page 63.)

— HP-UX Workload Manager Toolkits updated to version A.01.05. Utilities now use /opt/perl/bin/perl; ApacheTK begins supporting Apache 2.*x*; the cntl_smooth configuration file keyword now offered; utilitydc modified; and other changes. (See "HP-UX Workload Manager Toolkits (WLMTK)" on page 65.)

— The nPartition Provider updated to version B.01.02.00.02 to incorporate several minor defect fixes to improve the overall quality of the product. (See "nPartition Provider" on page 66.)

— Partition Manager updated to version B.11.23.02.00.02 to incorporate several minor defect fixes, as well as changes to functionality, including checking of the complex for configuration problems, and validation of SSL certificates sent from the CIM server. (See "Partition Manager" on page 67.)

• HP WBEM Services for HP-UX updated version A.01.05.08 to use OpenSSL 0.9.6k. (See "HP WBEM Services for HP-UX" on page 71.)

• Ignite-UX updated to version B.5.2 with several enhancements, including updating the make_*_recovery tools. (See "Ignite-UX" on page 72.)

• MC/ServiceGuard NFS Toolkit updated to version A.11.23.02 to deliver the File Lock Migration enhancement. (See "MC/ServiceGuard NFS Toolkit" on page 73.)

• The Quality Pack Patch Bundle now delivered on the Core OE media as well as the Web. (See "Quality Pack Patch Bundle" on page 74.)

• Servicecontrol Manager updated to version 3.05 to incorporate defect fixes. (See "Servicecontrol Manager" on page 75.)

• Software Distributor updated to incorporate defect fixes. (See "Software Distributor" on page 77.)

• Software Package Builder updated to version A.01.04 to allow the setting of corequisites and prerequisites attributes using the OR relationship. SPB also now able to detect ambiguous objects. (See "Software Package Builder (SPB)" on page 77.)

• Update-UX updated to provide the flexibility to "deselect" bundles through an alternate to the default selections file. Update-UX will also create two backup kernel configurations from the update process. (See "Update-UX" on page 79.)

Chapter 6: "Disk and File Management" (see page 81)

• HP CIFS Client updated to version A.01.09.01 to incorporate a defect fix. (See "HP CIFS Client" on page 82.)

• HP CIFS Server 2.2g updated to version A.01.10 to incorporate fixes and minor enhancements developed since Samba version 2.2.5. (See "HP CIFS Server" on page 82.)

• VERITAS File System 3.5 (HP OnlineJFS 3.5) now enables creation of file systems of up to 8 TB. (See "VERITAS File System (VxFS) 3.5" on page 83.)

Chapter 7: "Internet and Networking" (see page 85)

- HP-UX Apache-based Web Server updated to version v.1.0.10.03 as primarily a security and bug fix release which addresses vulnerabilities and problems. (See "HP-UX Web Server Suite" on page 86.)

- HP-UX Tomcat-based Servlet Engine updated to version 1.0.10.01 to correspond with the HP-UX Apache-based Web Server v.1.0.10.03 with Apache 2.0.48. Upgraded `mod_jk` to v1.2.5. (See "HP-UX Web Server Suite" on page 86.)

- LAN Commands:

  — The `lanadmin` command's hard link, `/usr/bin/landiag`, deprecated. (See "The lanadmin Command" on page 91.)

  — The file `/etc/lanscan` deprecated. (See "The lanscan Command" on page 91.)

  — The file `/etc/linkloop` deprecated. (See "The linkloop Command" on page 92.)

- Mozilla updated to version 1.4.00.01 with full Japanese localization as well as other defect fixes and enhancements. Netscape is no longer included, but can be downloaded at **http://www.hp.com/go/netscape**. (See "Mozilla Application Suite" on page 93.)

Chapter 8: "Security" (see page 95)

- HP-UX Host Intrusion Detection System v2.2 updated to include a defect fix for the detection of logins. (See "HP-UX Host Intrusion Detection System" on page 96.)

Chapter 9: "Commands and System Calls" (see page 99)

- Topics in this chapter are unchanged for March 2004.

Chapter 10: "Libraries and Programming" (see page 101)

- GTK+ Libraries updated to version 1.4.gm.46.4 to support changes to the Operating Environments. No new functionality added. (See "GTK+ Libraries" on page 102.)

- HP Message Passing Interface (MPI) updated to version 2.0 with full MPI-2 Standard functionality and other enhancements. (See "HP Message Passing Interface (MPI)" on page 102.)

- Perl updated to version 5.8.0 build 806 with several bug fixes and other improvements. (See "Perl" on page 104.)

Chapter 11: "Internationalization" (see page 107)

- ATOK 8 Japanese input method now deprectated. (See "Deprecated Functionality" on page 108.)

Chapter 12: "Other Functionality" (see page 109)

- HP-UX OpenGL Run Time Environment and Developer's Kit updated to version B.11.23.02.01 to incorporate defect fixes. (See "HP-UX OpenGL Run Time Environment and Developer's Kit" on page 110.)

What's New in the Initial HP-UX 11i v2 Release?

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

Chapter 3: "Workstation/Server Specific Information"[1]

- Always-installed Network Drivers:

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

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

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

- Mass Storage Drivers:

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

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

- Selectable Network Drivers:

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

  — HyperFabric: `/opt/clic/bin/clic_ping` utility not available in HP-UX 11i v2.

  — INTL100: Required for HP Integrity rx5670 and rx2600 servers, as well as HP zx6000 workstation. A6792A add-on card not supported on HP-UX 11i v2.

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

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

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

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

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

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1. The following summaries refer to the initial (October 2003) *HP-UX 11i Version 2 Release Notes*.

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

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

Chapter 4: "General System Administration"[1]

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

- Diagnostics:

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

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

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

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

- File Systems Tunable Parameters: New dynamic tunable parameters available.

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

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

- HP Partitioning:

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

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

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

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

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

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1. The following summaries refer to the initial (October 2003) *HP-UX 11i Version 2 Release Notes*.

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

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

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

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

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

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

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

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

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

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

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

- SAM - Nodal Network Communication: Supports DHCPv6.

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

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

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

- ServiceGuard Manager version A.03.00: Provides new features, including availability in 5 languages, support for clusters on different subnets, ability to display several sessions, and Alerts icon to show the most critical problem.

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

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

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

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

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

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

Chapter 5: "Disk and File Management"[1]

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

- Automounter: Obsoleted. AutoFS is the recommended replacement.

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

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

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

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

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

Chapter 6: " Internet and Networking"[1]

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

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1. The following summaries refer to the initial (October 2003) *HP-UX 11i Version 2 Release Notes*.

- HP WBEM Services for HP-UX version A.01.05.01: Supports strong SSL encryption; simultaneous support of both SSL and non-SSL connections; local connections enhanced to use UNIX Domain Sockets; four additional providers added.

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

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

- Internet Services:

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

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

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

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

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

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

  — The `named-xfer` ancillary program: Obsolete; replaced by the `dig` utility.

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

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

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

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

  — Sendmail 8.11.1: New options added.

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

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

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

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

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

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

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

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

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

- LAN Commands

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

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

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

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

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

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

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

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

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

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

- Web Browsing:

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

  — Netscape 7: Replaces Netscape Communicator 4.79.

Chapter 7: "Security"[1]

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

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

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

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

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

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

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

- Install-Time Security 1.0: Adds a security step to the install/update process that allows you to configure the Bastille security lockdown engine during system installation.

- Kerberos Client (KRB5-Client): Now delivered as part of HP-US 11i v2. Changes include support for appdefaults section in the `/etc/krb5.conf`; multidomain support; IPv6 support.

- PAM Kerberos: Supports both Itanium and PA-RISC applications in 32-bit mode. Now prevents a user from changing another user's password.

- Security Patch Check 1.3: Now included in HP-UX 11i v2 OEs. Simplifies the process of determining whether you have all the relevant security patches on your system. This version does better corner-case handling; incorporates a number of defect fixes and clearer wording.

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

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1. The following summaries refer to the initial (October 2003) *HP-UX 11i Version 2 Release Notes*.

- Strong Random Number Generator: New feature provides a secure, non-reproducible source of binary sequences for applications that generate encryption keys and other cryptographic quantities.

Chapter 8: "Commands and System Calls"[1]

- The `envd` Environment Daemon: Now supported.

- The `groupadd`, `groupdel`, `groupmod`, `useradd`, `userdel`, `usermod` commands: In trusted mode, the commands now write audit records into the audit subsystem's audit trail. New option added to set or unset `useradd` behavior of changing ownership of an existing home directory.

- The `psrset` Command: Enhanced with new options to manage the RTE processor set.

- The `setboot` Command: Support for setting the HA Alternate boot path now added. SpeedyBoot option for next reboot now available.

- I/O Commands:

  — The `insf`, `lssf`, and `mksf` Commands: Now support IHV drivers, provided the IHV provides a shared library.

  — The `ioscan` command: New options added to allow display of the date and time at which the system hardware was last scanned and to allow display of the EFI device paths for certain devices.

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

- The `pstat_getfile()` Interface: Obsolete. The interface `pstat_getfile2()` should be used in its place.

- Transition Links Commands: Deprecated. The `tlinstall`, `tllist`, and `tlremove` commands will become obsolete in post-HP-UX 11i v2 releases.

- Usage of Capacity-related `ioctls DIOC_CAPACITY`, `DIOC_DESCRIBE`, and `SIOC_CAPACITY`: Applications that use the `DIOC_CAPACITY` or `DIOC_DESCRIBE ioctl` calls should be rebuilt because `capacity_type` and `disk_describe_type` now better represent the size of newer, larger devices. Applications that use the `SIOC_CAPACITY ioctl` for devices that may become large at some point should now use the new `SIOC_STORAGE_CAPACITY ioctl`.

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

Chapter 9: "Libraries and Programming"[1]

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

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1. The following summaries refer to the initial (October 2003) *HP-UX 11i Version 2 Release Notes*.

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

- Aries Binary Translator: Changes include support for MxN threads, support for Itanium 2 processor, and an optional, experimental implementation of a new dynamic translator with improved performance.

- C99 Support for HP-UX System C Library (`libc`): A set of 8 new APIs introduced, making it easier to convert strings to the "long long" data type.

- Debugging:

  — Absolute Debugger (Adb): New features include support for Lazyfp, Dual pdir, debugging MxN threads in a process/core, debugging INIT and MCA crash dumps, and debugging a shared library for an attached process.

  — HP Kernel Debugger (KWDB): Included in HP-UX 11i v2, but not supported.

  — HP Wildebeest Debugger (WDB) 4.0: Features include performance improvements and support for Runtime Memory Checking, for enabling/disabling threads for better DDE compatibility, for unwinding through corrupted PC, for stack traces in Java/C/C++ programs, and enhanced support for C++ templates. New command: `dumpcore`. Info threads command output has changed.

- Dynamic Loader (`dld.so`) B.12.20: Changes include support for applications built with `+[no]lazyload` and `-B [direct|lazydirect|nodirect]`, lazy loading of shared library, and direct binding.

- File Descriptor Allocation: The behavior of the file descriptor allocation changed to prevent security problems such as unauthorized modification of root-owned files.

- GTK+ Libraries 1.2.10.2: Added; required for Netscape 7 and Mozilla. Consists of the component libraries GLib, GDK, and GTK.

- HP aC++ Compiler: The functionality of Tools.h++ now available with the Standard C++ runtime (`-AA`). Transition Links product deprecated.

- HP C Compiler: The `legacy_hpc/` subdirectory no longer provided. C-Analysis-Tools product obsoleted. The tools `cb`, `cflow`, `cxref`, `endif`, `lint`, `protogen` no longer shipped. Transition Links product deprecated.

- HP Fortran v2.7: A new feature is binary I/O conversion. New or revised directives/options include *optimize openmp [on|off]*, *+Oautopar* (revised), *+Ofast* (changed implied options), *+DOosname*, *+O[no]rotating_fpregs*, *+O[no]preserved_fpregs*, and *+O[no]no_return*.

- HP Math Library (`libm`): Changes to `libm`, `math.h`, `complex.h`, `tgmath.h`, `fenv.h`, `cmath`, and `complex` components, including new and changed functions. Major performance upgrade for power functions: `pow[fwlq]`, `pown[fwlq]`, and `powlln[fwlq]`. Switch introduced into `math.h()` to support a strict C99 namespace.

- HP Message Passing Interface (MPI) 1.8.3: New features include additional launch utility `mpirun.all`, HyperFabric/HyperMessaging Protocol (HMP) functionality, `stdio` not processed by default, argument error checking turned off by default.

- HP MLIB 8.4: Major enhancement is performance tuning. Incorporates algorithmic improvements. Several tunable parameters adjusted for improved execution performance.

- Itanium Unwind Library (`libunwind.so`): Changes include a new set of "Unwind Express" APIs that perform stack unwinding considerably faster, and new header files `<uwx.h>` and `<uwx_self.h>`.

- Java 2 Platform:

   — HP 3D Technology for the Java 2 Platform 1.3: Two new, identical Java 3D products now install: one into Java RTE 1.3 and the other into Java RTE 1.4.

   — Runtime Environment (RTE) for the Java 2 Platform 1.4: New features include nonblocking I/O APIs, IPv6 support, new garbage collectors (parallel, and concurrent mark and sweep), Java Web Start 1.2 application deployment technology now bundled with the RTE. RTE for Java 1.3 still included as well.

   — Runtime Plug-in (JPI) for Netscape/Mozilla for the Java 2 Platform 1.4: Now added, providing the latest Java technology. JPI 1.3 still included as well.

- Link Editor (`ld`): New functionality includes lazy loading of shared libraries (`+[no] lazyload`) and direct binding support.

- Micro Focus OO COBOL 4.2 Run-Time Libraries: Deprecated. Will not be included in future HP-UX 11i releases for Itanium®-based platforms.

- Object File Tools (`elfdump`): Option introduced to print out the version string of the symbol when printing the symbol table.

- Perl: Corresponds to Perl 5.8.0 source code release. Changes include better Unicode support, new IO implementation, new thread implementation, better numeric accuracy, safe signals, and many new modules.

- Source Code Transition from HP-UX 11i v1.6 to HP-UX 11i v2: Software Transition Kit 1.9 updated to support source code transition from HP-UX 11i v1.6 to v2.

- Thread Context: Changes include: Protection Key Registers saved/restored on context switch; lazy FP implementation; new scratch registers supported; save_state, pcb, and label structures changed.

Chapter 10: "Internationalization"[1]

- Simplified Chinese Input Methods: Intelligent ABC now available to support characters defined by the GB18030 standard. T-C and T-C Rapid input methods obsoleted and removed.

- Mainframe `iconv` Converters for Japanese Characters: Changes include numerous fixes for mapping errors for JIS standard characters, as well as a fix to handle an incomplete shift sequence at the end of an input buffer.

- Printing Using Asian TrueType Fonts for HP PCL5 Printers: Larger set of Asian characters available for printing using Asian UTF-8 locales.

- System Support for Latin and South American Locales: Total of 51 new locales provided to enable system-level support for Latin/South American geographies. Includes support for the input, storage, retrieval, display, and printing of characters encoded in ISO-88591, ISO-885915, or UTF-8 character sets.

- Unicode 3.0 Support: Now included.

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1. The following summaries refer to the initial (October 2003) *HP-UX 11i Version 2 Release Notes*.

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

Chapter 11: "Other Functionality"[1]

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

- Common Desktop Environment (CDE): Changes include: IPv6 support; greater accessibility for physically challenged users; `dtlogin` does not start X server when the mouse is not connected; large file (greater than 2GB) support provided by `dtfile`; and other changes. Configuring a machine with Bastille can have several impacts on CDE.

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1. The following summaries refer to the initial (October 2003) *HP-UX 11i Version 2 Release Notes*.

4 Workstation- and Server-Specific Information

What's in This Chapter?

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

- Hardware Enablement Program (see page 46)
- Networking and Mass Storage Drivers (see page 48)
    - Always-Installed Networking Drivers (see page 48)
    - Selectable Networking Drivers (see page 50)
    - Always-Installed Mass Storage Drivers (see page 51)
    - Selectable Mass Storage Drivers (see page 52)
- On Demand Solutions (see page 53)
    - Instant Capacity on Demand (see page 53)
    - Pay Per Use (see page 54)
- Supported Servers and Workstations (see page 55)
- Unsupported Servers and Workstations (see page 56)
- Xserver (see page 56)

Hardware Enablement Program

The Hardware Enablement (HWE) Program updates the content in the HWEnable11i Patch Bundle, the HP-UX Support Tools (Online Diagnostics), and other HP-UX software to support hardware on HP systems with an HP-UX 11i v2 Operating Environment (OE). The HWEnable11i bundle and the HP-UX Support Tools provide support for new and future systems, I/O adapters, and mass-storage products. This HP-UX software is labeled as required, ignited on new systems in HP manufacturing, and automatically loaded as part of any 11i v2 OE update.

In addition to the HP-UX 11i v2 OE media, the HWEnable11i bundle is available at the IT Resource Center (`http://itrc.hp.com`) and at HP Software Depot (`http://software.hp.com`).

For information on firmware requirements, see the *HP-UX 11i Version 2 Installation and Update Guide*, MPN **5990-6728**, available in your media kit, on the Instant Information DVD, and at `http://docs.hp.com`.

Summary of Change

- Added diagnostics support for dual-core processors in following servers:

    — HP Integrity 16-way Superdome Enterprise Server (SD16A)

    — HP Integrity 32-way Superdome Enterprise Server (SD32A)

    — HP Integrity 64-way Superdome Enterprise Server (SD64A)

    — HP Integrity rx8620-32 Server (16 socket 32-way with multiple partitions)

    — HP Integrity rx7620-16 Server (8 socket 16-way with dual partitions)

    — HP Integrity rx4640-8 Server (4 socket 8-way)

- Added support for new systems:

    — HP Integrity cx2600 Server (2 socket Carrier-grade system)

- Added support for following new I/O adapters:

    — A6826A PCI-X Dual-Port 2Gb/1Gb FC Adapter

    — A7011A PCI-X 1000Base-SX Dual Port Adapter

    — A7012A PCI-X 1000Base-T Dual Port Adapter

    — A7173A PCI-X 2-Channel Ultra320 SCSI Adapter

    — A9782A PCI-X 2Gb FC and 1000Base-SX [Fiber] Combo Card

    — A9784A PCI-X 2Gb FC and 1000Base-T [Copper] Combo Card

    — A9890A PCI-X 2-Channel SA6402 RAID320 Adapter

    — AB352A Core 1000Base-T Dual-Port card for the rx4640 server

- Updated install kernels for HP-UX boot support for above I/O adapters.

- Updated support for new DVD Writer optical devices for HP Integrity Servers:

Table 4-1   **Supported DVD Writer Optical Devices for Servers**

Product Number	Product Description	Platforms
AB348A	DVD+RW Drive, Slim	rx2600
AB349A	DVD+RW Drive, Slim	rx4640
AB350A	DVD+RW Drive, Slim	rx1600
AB351A	DVD+RW Drive	rx8620, rx7620

- Updated support for new DVD Writer optical devices for HP Workstations:

Table 4-2   **Supported DVD Writer Optical Devices for Workstations**

Product Number	Product Description	Platforms
AB616A	DVD+RW Drive, Slim	zx6000
AB615A	DVD+RW Drive	zx2000

Impact

New systems, processors, and I/O adapters are now supported. Support for new DVD Writer optical devices has been updated.

Compatibility

There are no known compatibility issues.

Performance

There are no known performance issues.

Documentation

- For more information on hardware enablement, see the Hardware Enablement Bundle README File as well as the following documents, available in your media kit and at `http://docs.hp.com`:

  — *Read Before Installing or Updating to HP-UX 11i v2* (MPN **5990-6741**)
  — *HP-UX 11i v2 Installation and Update Guide* (MPN **5990-6728**) (also available on the Instant Information DVD)

- For further information on diagnostics, see `http://www.docs.hp.com/hpux/diag/`.

- Information may also be found at the following Web sites:

  — IT Resource Center (`http://itrc.hp.com`)
  — HP Software Depot (`http://software.hp.com`)

Obsolescence

Not applicable.

Networking and Mass Storage Drivers

HP-UX 11i v2 includes drivers for networking and mass storage adapter cards. The drivers are described in the following sections:

- "Always-Installed Networking Drivers" on page 48
- "Selectable Networking Drivers" on page 50
- "Always-Installed Mass Storage Drivers" on page 51
- "Selectable Mass Storage Drivers" on page 52

Always-Installed Networking Drivers

The following table lists networking drivers that are automatically installed.

Table 4-3   Always-Installed Networking Drivers

Networking Driver Bundle	Driver	Card Number	Description
FDDI-00	`fddi4`	A3739B	PCI FDDI card
FibrChanl-01 and GigEther-01	`fcd` and `igelan`	A9782A	PCI-X 2Gb Fibre Channel/1000Base-SX (Fibre) Combination Card
FibrChanl-01 and GigEther-01	`fcd` and `igelan`	A9784A	PCI-X 2Gb Fibre Channel/1000Base-T (Copper) Combination Card
GigEther-00	`gelan`	A4926A	PCI 1000Base-SX (gigabit over fiber) card
GigEther-00	`gelan`	A4929A	PCI 1000Base-T (gigabit over copper) card
GigEther-01	`igelan`	A6794A	PCI 1000Base-T/SCSI card
GigEther-01	`igelan`	A6825A	PCI 1000/Base-T (gigabit over copper) card
GigEther-01	`igelan`	A6847A	PCI 1000/Base-SX (gigabit over fiber) card
GigEther-01	`igelan`	A7109A	PCI Gigabit Ethernet BaseT/Ultra 160 combo card
GigEther-01	`igelan`	A8685A	PCI 1000Base-T card
GigEther-01	`igelan`	A9782A	PCI-X 2Gb Fibre Channel/1000Base-SX (Fiber) Combination Card

Table 4-3   Always-Installed Networking Drivers (Continued)

Networking Driver Bundle	Driver	Card Number	Description
GigEther-01	`igelan`	A9784A	PCI-X 2Gb Fibre Channel/1000Base-T (Copper) Combination Card
HPUXBase64, HPUXBase32	`btlan` (`btlan5` for 10.20/11.0)	A5230A	PCI 10/100Base-TX card for servers
HPUXBase64, HPUXBase32	`btlan`	A5506B	PCI 4-port 10/100Base-TX card
HPUXBase64, HPUXBase32	`btlan` (`btlan3` for 11.0)	A5838A	PCI Combination Dual port 10/100Base-TX and Wide Ultra2 SCSI card
IEther-00	`iether`	A7011A	PCI-X 2-Port 1000Base-SX (Fibre) card
IEther-00	`iether`	A7012A	PCI-X 2-Port 1000Base-T (Copper) card

GigEther-01

The `GigEther-01` bundle delivers the `igelan` driver which supports the current cards A6794A, A6825A, A6847A, A8685A, and new cards A7109A, A9782A, and A9784A.

Summary of Change As of March 2004, the following cards are supported on HP-UX 11i v2:

- A9782A PCI-X 2Gb Fibre Channel/1000Base-SX (Fiber) Combination Card
- A9784A PCI-X 2Gb Fibre Channel/1000Base-T (Copper) Combination Card
- A7109A PCI Gigabit Ethernet BaseT/Ultra 160 combo card

Impact You can now use the A9782A and A9784A cards on systems running HP-UX 11i v2.

Compatibility There are no known compatibility issues.

Performance There are no known performance issues.

Documentation Documentation is available on **http://docs.hp.com** in the "Networking & Communications" section.

Obsolescence Not applicable.

IEther-01

The `IEther-00` bundle delivers the `iether` driver, which supports the A7011A and A7012A cards. In addition, `IEther-00` supports the zx2000 core.

Summary of Change As of March 2004, the following cards are supported on HP-UX 11i v2:

- A7011A PCI-X 2-Port 1000Base-SX (Fibre) card
- A7012A PCI-X 2-Port 1000Base-T (Copper) card

Impact You can now use the A7011A and A7012A cards on systems running HP-UX 11i v2.

Compatibility There are no known compatibility issues.

Performance There are no known performance issues.

Documentation Documentation is available on `http://docs.hp.com` in the "Networking & Communications" section.

Obsolescence Not applicable.

Selectable Networking Drivers

The following table lists drivers that are not automatically installed, but can be selected during installation.

Table 4-4   **Selectable Networking Drivers**

Networking Driver Bundle	Driver	Card Number	Description
ATM-00	`atm2pci` `atmpci`	A5483A, A5513A, A5515A, J3557A	PCI ATM cards
HyprFabrc-00	`clicd`	A4919A	PCI HyperFabric
		A4920A	HSC HyperFabric
		A4921A	HSC HyperFabric
		A6092A, A6386A	PCI HyperFabric
TermIO-00	`pci_mux0`	J3592A, A6748A	PCI MUX (8-port)
		J3593A, A6749A	PCI MUX (64-port)

Table 4-4   Selectable Networking Drivers (Continued)

Networking Driver Bundle	Driver	Card Number	Description
TokenRing-00	`pcitr`	A5783A, A4930A	PCI Token Ring card

Always-Installed Mass Storage Drivers

The following table lists mass storage drivers that are automatically installed.

Table 4-5   Always-Installed Mass Storage Drivers

Mass Storage Driver Bundle	Driver	Card Number	Description
`FibrChanl-00`	`td`	A5158A	PCI Tachyon TL Fibre Channel card
`FibrChanl-00`	`td`	A6795A	PCI Tachyon XL2 Fibre Channel card
`FibrChanl-01`	`fcd`	A6826A	PCI-X Dual Port 2 Gb/1 Gb Fibre Channel Adapter
`FibrChanl-01` and `GigEther-01`	`fcd` and `igelan`	A9782A	PCI-X 2Gb Fibre Channel/1000Base-SX (Fiber) Combination Card
`FibrChanl-01` and `GigEther-01`	`fcd` and `igelan`	A9784A	PCI-X 2Gb Fibre Channel/1000Base-T (Copper) Combination Card

FibrChanl-00

The `FibrChanl-00` bundle delivers the `td` driver, which supports the A5158A and A6795A cards.

Summary of Change `FibrChanl-00` has been updated to incorporate defect fixes.

Impact You can now use the A5158A and A6795A cards on systems running HP-UX 11i v2.

Compatibility There are no known compatibility issues.

Performance There are no known performance issues.

Documentation Documentation is available on **http://docs.hp.com** in the "Networking & Communications" section.

Obsolescence Not applicable.

FibrChanl-01

The `FibrChanl-01` bundle delivers the `fcd` driver, which supports the A9782A, A9784A, and A6826A cards.

Summary of Change As of March 2004, the following cards are supported on HP-UX 11i v2:

- A9782A PCI-X 2Gb Fibre Channel/1000Base-SX (Fiber) Combination Card
- A9784A PCI-X 2Gb Fibre Channel/1000Base-T (Copper) Combination Card
- A6826A PCI-X Dual Port 1Gb/2Gb Fibre Channel Adapter

Impact You can now use the A9782A, A9784A, and A6826A cards on systems running HP-UX 11i v2.

Compatibility There are no known compatibility issues.

Performance There are no known performance issues.

Documentation Documentation is available on **http://docs.hp.com** in the "Networking & Communications" section.

Obsolescence Not applicable.

scsiU320-00

The new `scsiU320-00` bundle delivers the driver `mpt`.

Summary of Change The `scsiU320-00` driver bundle has been added to support cards that will be released in the future.

Impact There are no impacts.

Compatibility There are no known compatibility issues.

Performance There are no known performance issues.

Documentation When the new cards are released, documentation will be available on **http://docs.hp.com** in the "Networking & Communications" section.

Obsolescence Not applicable.

Selectable Mass Storage Drivers

The following section describes a mass storage driver that is selected during installation rather than automatically installed.

RAID-01

The `RAID-01` bundle delivers the driver `ciss`, which supports the A9890A card.

Summary of Change As of March 2004, the following card is now supported:

- A9890A RAID 6402 Smart Array Controller card

Impact You will now be able to use the A9890A card on systems running HP-UX 11i v2.

Compatibility There are no known compatibility issues.

Performance There are no known performance issues.

Documentation When new cards are released, documentation will be available on `http://docs.hp.com` in the "Networking & Communications" section.

Obsolescence Not applicable.

On Demand Solutions

The Instant Capacity on Demand (iCOD) and Pay Per Use (PPU) software products are a part of the HP On Demand Solutions program. The iCOD product is a purchase model in which processor capacity can be instantly increased to accommodate increasing demands. PPU is a lease model in which customers are charged only for actual processor usage.

- Instant Capacity on Demand (see page 53)
- Pay Per Use (see page 54)

Instant Capacity on Demand

Instant Capacity on Demand (iCOD) version 6.01 provides the ability to instantly increase or decrease processing capacity on specified HP enterprise servers.

Summary of Change

The iCOD version 6.0 software is incremented to version 6.01 for defect fixes on HP-UX 11i v2.

Impact

The iCOD software has changed from version 6.0 to 6.01.

Compatibility

There are no known compatibility issues.

Performance

There are no known performance issues.

Documentation

For further information, refer to the following documentation:

- Manpages:

    — *icod* (5)
    — *icod_modify* (1M)
    — *icod_notify* (1M)
    — *icod_stat* (1M)

- Web Sites:

    — HP Software Depot: `http://software.hp.com`

    — Technical Documentation: `http://docs.hp.com`

- Documents:

    — *Instant Capacity on Demand (iCOD) User's Guide for version B.06.00*: `http://docs.hp.com/hpux/netsys/index.html#On%20Demand%20Solutions%20%28ODS%29`

    — *Instant Capacity on Demand (iCOD) Release Notes for version B.06.00*: `http://docs.hp.com/hpux/netsys/index.html#On%20Demand%20Solutions%20%28ODS%29`

Obsolescence

Not applicable.

Pay Per Use

The Pay Per Use (PPU) 6.04 software product **T2351AA** is a lease model in which customers are charged only for the processor usage on (specified) HP servers.

Summary of Change

The PPU version 6.03 software has been incremented to version 6.04 for defect fixes on HP-UX 11i v2.

Impact

There are no impacts.

Compatibility

There are no known compatibility issues.

Performance

There are no known performance issues.

Documentation

For further information, refer to the following documentation:

- Manpages:

  — *ppu* (5)
  — *ppuconfig* (1M)
  — *ppud* (1M)

- Web Sites:

  — HP Software Depot: `http://software.hp.com`

  — Technical Documentation: `http://docs.hp.com`

  — HP External: `http://www.hp.com/hpfinancialservices/pay_per_use.html`

- Documents:

  — *Pay Per Use (PPU) User's Guide for version B.06.x*:
    `http://docs.hp.com/hpux/netsys/index.html#On%20Demand%20Solutions%20%28ODS%29`

  — P*ay Per Use (PPU) Release Notes for version B.06.00*:
    `http://docs.hp.com/hpux/netsys/index.html#On%20Demand%20Solutions%20%28ODS%29`

Obsolescence

Not applicable.

Supported Servers and Workstations

HP-UX 11i v2 supports only a 64-bit version of the HP-UX kernel. The HP-UX 11i v2 release fully supports the following HP Integrity servers and HP workstations:

- HP Integrity cx2600 server

- HP Integrity rx2600 server

- HP Integrity rx4640 server

- HP Integrity rx5670 server

- HP Integrity rx7620 server

- HP Integrity rx8620 server

- HP Integrity Superdome server

- HP zx2000 workstation

- HP zx6000 workstation

NOTE	Additional information regarding these servers and workstations, including specifications, warranty, and support, is found on the Web at:
	`http://www.hp.com/products1/itanium`

Unsupported Servers and Workstations

HP-UX 11i v2 is not supported on the following platforms:

- PA-RISC
- HP Integrity rx4610 server
- i2000 workstation

Xserver

The Xserver product is a component of the X Window System. The Xserver product acts as an intermediary between client applications and local hardware and input devices.

Summary of Change

Delivered with the Hardware Enablement Patch Bundle (HWE) for the HP-UX 11i v2 March 2004 release, Xserver version B.11.23.01 contains support for multiple graphics cards.

Impact

You will be able to add an additional graphics card and configure it for use with your Xserver.

Machines Affected

Machines affected by the new support for multiple graphics devices are the hp Integrity zx2000, and the hp Integrity zx6000.

Compatibility

This functionality does not affect compatibility.

Performance

The additional support for multiple graphics devices does not affect performance.

Documentation

- For further information, refer to the Xserver product information file at `/usr/lib/hpux32/X11/Xserver/info/screens/xf86`.

- In addition, see the white paper "Multi-Display Technologies on HP-UX," available at **http://docs.hp.com**.

Obsolescence

Not applicable.

5 General System Administration

What's in This Chapter?

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

Diagnostics

HP-UX 11i v2 provides a complete set of tools for verifying, troubleshooting, and monitoring HP system hardware, including CPUs, memory, interface cards, and mass storage devices. Diagnostics (also known as Support Tools) in HP-UX 11i v2 include the Offline Diagnostic Environment (ODE) and Online Diagnostics (EMS Hardware Monitors and Support Tools Manager).

The Offline Diagnostic Environment is delivered on the Offline Diagnostics & Utilities CD. Online Diagnostics are delivered in the Operating Environments.

This section covers the following topics:

- "Offline Diagnostic Environment" on page 60
- "Online Diagnostics" on page 60

Offline Diagnostic Environment

The Offline Diagnostics Environment (ODE) is an offline support tools platform that enables you to troubleshoot a system that is running without an operating system or cannot be tested using the online tools. The ODE is also useful for some types of testing in which it is not desirable to have to boot the system first.

The Itanium-based ODE includes offline diagnostics and utilities for all current Itanium-based hardware systems, and is delivered separately on the Offline Diagnostics & Utilities CD.

There are no changes to the ODE for the March 2004 release. For changes to the ODE for the initial release of HP-UX 11i v2 (October 2003), including a list of supported hardware, see the *HP-UX 11i Version 2 Release Notes*, available on the Instant Information DVD and at `http://docs.hp.com`.

Online Diagnostics

Online Diagnostics for HP-UX 11i v2 include:

EMS Hardware Monitors allow you to monitor the operation of a wide variety of hardware products and be alerted immediately if any failure or other unusual event occurs. The EMS Hardware Monitors are started automatically with no user intervention.

Support Tools Manager (STM) is the platform for executing online diagnostics. The commands to start it are `xstm` (GUI interface), `mstm` (menu-driven interface), `cstm` (command line interface), or `stm` (general).

For a list of hardware newly supported by Online Diagnostics with this release, see "Hardware Enablement Program" on page 46.

Summary of Change

- The following new EMS Hardware Monitor has been added:

  The iSCSI monitor, `dm_iscsi_adapter`, is designed to monitor the operation of the iSCSI Software Initiator on your system.

The iSCSI Software Initiator is available from the HP Software Depot at
`http://www.software.hp.com/portal/swdepot/displayProductInfo.do?produ`
`ctNumber=T1452A`.

• The following new Support Tool has been added:

The IPMI Event Viewer Web Interface Tool is an enhancement to the current
command-line driven IPMI Event Viewer. The tool is used to display low-level
system log information events through a Web browser interface to the same level of
detail as the current command-line interface.

Impact

You will now be able to monitor the operation of the iSCSI Software Initiator on your
system.

You will now be able to view IPMI events through a Web browser interface.

Compatibility

There are no known compatibility issues.

Performance

There are no known performance issues.

Documentation

For further information related to support of the iSCSI Software Initiator by EMS
Hardware Monitors, see the following Web sites:

• iSCSI Subsystem (`dm_iscsi_adapter`):
  `http://docs.hp.com/hpux/onlinedocs/diag/ems/emd_iSCSI.htm`

• iSCSI (`dm_iscsi_adapter` Events):
  `http://docs.hp.com/hpux/onlinedocs/diag/ems/dm_iSCSI_adapter.htm`

For further information about the iSCSI Software Initiator, see the following documents
in the "Networking and Communications" area of `http://docs.hp.com`:

• *HP-UX iSCSI Software Initiator Support Guide*

• *HP-UX iSCSI Software Initiator Release Note*

For further information about the IPMI Event Viewer Web Interface Tool, see the
Diagnostics (Support Tools) section at `http://docs.hp.com`.

Obsolescence

Not applicable.

HP Partitioning

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

HP Process Resource Manager

HP Process Resource Manager (PRM) version C.02.02 provides an efficient and flexible way to manage resource allocation at times of peak system load. It gives the system administrator the ability to group users or processes together and guarantee each group minimum amounts of the total CPU, real memory, and disk bandwidth available.

Summary of Change

PRM version C.02.02 includes the following:

- Many PRM commands now support a version option `-V`

- `xprm` now supports SSL encryption of login/password data and `xprm` operations (encryption is disabled by default)

- `prmmove` and `prmrun` display data in a wide-column format by default when you do not specify any options

- `syslog` messaging is more consistent

- `prmconfig -k` behavior has been modified (For information on what groups processes are moved to, see the *prmconfig* (1) manpage.)

- The disk bandwidth manager is now disabled when not needed by the configuration

- `prmmonitor` updates its output as expected, even when running in continuous mode as a nonroot user and a new configuration is loaded

Impact

If you desire SSL encryption, you should read the *xprm* (1) manpage for information.

Compatibility

There are no known compatibility issues.

Performance

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

Documentation

For further information, refer to the following sources for documentation:

- Manpages:

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

- Whitepapers:

  At **http://www.hp.com/go/prm**, the "Information library" page provides white papers.

- Documents:

  — *HP Process Resource Manager User's Guide*

  — *HP PRM Version C.02.02 Release Notes for HP-UX 11.0, HP-UX 11i V1.0, and HP-UX 11i V2.0*

  Both documents are available at **http://docs.hp.com/hpux/ha/index.html#Process%20Resource%20Manager**.

Obsolescence

Not applicable.

HP-UX Workload Manager

HP-UX Workload Manager (WLM) version A.02.02 provides goal-based workload management. This management enables automatic resource allocation and application performance management through the use of prioritized service-level objectives (SLOs). It provides this functionality by automating features of HP-UX Virtual Partitions, Node Partitions, Processor Sets, and HP Process Resource Manager (PRM).

Summary of Change

HP-UX WLM version A.02.02 includes the following:

- New GUI that allows local and remote management of WLM systems

- Automatic resizing of node partitions (nPars) that use iCOD software

- Configuration Wizard supports more WLM configuration options

- PSET-based workload groups with no active SLOs have their CPU count reduced to zero

- `cpushares` keyword supports an offset

- To support nPars in addition to vPars:

  — `wlminfo`'s `vpar` command has changed to `par`

  — `wlmpard`'s `-l vpar` is now `-l par`

- New `cntl_smooth` keyword allows you to get a running average of a metric from a data collector, smoothing out dips and spikes in the metric before it is used by WLM

- perl is expected to be in `/opt/perl/bin/`

- New variables in `/etc/rc.config.d/wlm` file to support new communications daemon, `wlmcomd`

- New example configurations for transient groups and for vPar and nPar management in `/opt/wlm/examples/wlmconf`

- Passive mode now supports auditing

Impact

WLM A.02.02 includes the following impacts:

- Enhanced Wizard and new GUI simplify configuring WLM

- nPar resizing opens new possibilities in partition management

- PSET-based groups with no active SLOs now get 0 CPUs, allowing CPUs to be used elsewhere

- With the new `cntl_smooth` keyword, you are advised to transition away from the `smooth` and `expsmooth` utilities

- WLM scripts that use perl now require perl to be in `/opt/perl/bin/` instead of `/usr/contrib/bin/`

- If you have modified `/etc/rc.config.d/wlm`, you should merge the new file (`/opt/wlm/newconfig/etc/rc.config.d/wlm`) with your `/etc/rc.config.d/wlm` file

Compatibility

- WLM scripts that use perl now require perl to be in `/opt/perl/bin/` instead of `/usr/contrib/bin/`

- If you have modified `/etc/rc.config.d/wlm`, you should merge the new file (`/opt/wlm/newconfig/etc/rc.config.d/wlm`) with your `/etc/rc.config.d/wlm` file

Performance

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

Documentation

For further information, refer to the following sources for documentation:

- Manpages:

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

- White papers:

  At **http://www.hp.com/go/wlm**, the "Information library" page provides white papers.

- Documents:

  — *HP-UX Workload Manager User's Guide*

  — *HP-UX Workload Manager A.02.02 Release Notes for HP-UX 11.0, HP-UX 11i V1.0, and HP-UX 11i V2.0*

Both documents are available at
`http://docs.hp.com/hpux/netsys/index.html#HP-UX%20Workload%20Manager`.

Obsolescence

Not applicable.

HP-UX Workload Manager Toolkits (WLMTK)

The Workload Manager Toolkits (WLMTK) product version A.01.05 enhances functionality provided by WLM and simplifies the integration of various products with WLM. These products include Apache, Oracle database instances, Pay Per Use, SAS, SNMP, and WebLogic.

Summary of Change

- Utilities now use `/opt/perl/bin/perl`

  The `wlmoradc` and `smooth` utilities, part of ODBTK, now use `/opt/perl/bin/perl`. Similarly, the `expsmooth` utility, part of WebLogicTK, also uses `/opt/perl/bin/perl` now. Formerly, all these utilities used `/usr/contrib/bin/perl`.

- Installation now produces a warning if `/opt/perl/bin/perl` is not present on the system

  When installing WLM on a system where `/opt/perl/bin/perl` is not present:

  — The following message appears in output and in the file `/var/adm/sw/swinstall.log`:

    `* "hostname:/":  1 configure or unconfigure scripts had warnings.`

  — The following message appears in the file `/var/adm/sw/swagent.log`:

    `WARNING: Unable to locate /opt/perl/bin/perl. Install HP Perl 5.6.1 or later in order to use the provided Perl scripts.`

- ApacheTK begins supporting Apache 2.*x* (For Apache 1.3.*x* support, use an earlier ApacheTK release)

- Starting with WLM A.02.02, WLM offers a `cntl_smooth` configuration file keyword. It is recommended that you use the `cntl_smooth` WLM keyword instead of the `smooth` tool and the `expsmooth` tool. For information on `cntl_smooth`, see the *wlmconf* (4) manpage.

- For optimal performance when managing Oracle instances, be sure your `wlm_interval` (set in the WLM configuration) is at least 10 seconds.

- `utilitydc` has been modified as indicated below:

  — It now supports the activation and deactivation of Temporary iCOD resources based on your SLOs.

  — It now allows you to specify a minimum number of processors to keep active on a system. Even it `utilitydc` determines the system's SLOs can be met with fewer processors, a certain number of processors can always be kept active. For more information, see the `-m` option in the *utilitydc* (1M) manpage.

Impact

If you use `wlmoradc`, `smooth`, or `expsmooth` and do not have perl installed in `/opt/perl/bin/`, you will need to install HP Perl 5.6.1 or later.

If you are using ApacheTK, updating to WLMTK A.01.05's ApacheTK requires Apache 2.*x*.

You should transition away from using the `smooth` and `expsmooth` utilities and begin using the `cntl_smooth` configuration keyword.

Compatibility

There are no known compatibility issues.

Performance

There are no known performance issues.

Documentation

For further information, refer to the following sources for documentation:

- Manpages:

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

- White papers:

  At **http://www.hp.com/go/wlm**, the "Information library" page provides white papers.

- Documents:

  — *HP-UX Workload Manager Toolkits User's Guide*

  — *HP-UX Workload Manager Toolkits Version A.01.05 Release Notes for HP-UX 11.0, HP-UX 11i V1.0, and HP-UX 11i V2.0*

  Both docs are available at **http://docs.hp.com/hpux/netsys/index.html#HP-UX%20Workload%20Manager**.

Obsolescence

Not applicable.

nPartition Provider

The nPartition Provider is the HP-UX WBEM Services provider for nPartition-related information on partitionable systems. The nPartition Provider was a new product with HP-UX 11i v2. This product is used by Partition Manager and the partition commands to configure and manage HP systems that support nPartitions. With this component, partitionable systems can be managed both locally and remotely. The nPartition Provider product is only used through a WBEM interface. It is not invoked directly by the user.

Summary of Change

In version B.01.02.00.02, several minor defects were fixed to improve the overall quality of the product.

Machines Affected This release of the nPartition Provider is supported on all HP server systems that support nPartitions and HP-UX 11i v2 (B.11.23).

Impact

There are no impacts.

Compatibility

There are no known compatibility issues.

Performance

You should be aware of the following items that may affect performance:

- When managing a remote partitionable complex, the performance degrades when the connection traverses long network distances, e.g., managing a partitionable complex in California from a system in New York. Furthermore, when managing a remote system, performance can be improved by connecting to an nPartition Provider on the remote system, rather than connecting directly to the system's service processor.

- The nPartition Provider maintains a cache of information about systems being managed. This cache is cleared when the nPartition Provider is unloaded by the CIM server. Performance may be reduced when managing a system for the first time, or immediately after the CIM server has been restarted. Subsequent management sessions of the same system will be faster.

Documentation

Complete information is in the nPartition provider product data sheet, installed as

`/opt/nparprovider/doc/nParProviderDataSheet.html`

Obsolescence

Not applicable.

Partition Manager

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

Partition Manager is a Web-based application that can be launched from Servicecontrol Manager 3.0, System Administration Manager (SAM), or as a stand-alone product. Customers interact with Partition Manager through a Web browser running on their client workstation or PC.

Summary of Change

Partition Manager version B.11.23.02.00.02 is an update to the new version of Partition Manager that was released with HP-UX 11i v2 (B.11.23). That was the first version of Partition Manager for Itanium®-based systems, and provided a new, more graphical user interface, support for cell local memory (CLM), and configuration of nPartitions on remote complexes.

Several minor defects were fixed to improve the overall quality of the product. In addition, the following functionality changes were made:

- At startup, Partition Manager will check the complex for possible configuration problems. If potential problems are found, the "analyze complex health" action will be displayed before proceeding to the initial view.

- By default, Partition Manager now validates SSL certificates sent from the CIM server. Certificate validation can be disabled if SSL security is not important in your environment.

  This change was first reported in HP Security Bulletin SSRT3636 (document id: HPSBUX0311-296), which is available from the IT Resource Center at `http://itrc.hp.com`.

  For more information, refer to the "cimserver" and "managing SSL certificates" sections of the Partition Manager online help at

  `/opt/hpwebadmin/webapps/mxhelp/parmgr/en/starting.html`

Machines Affected This release of Partition Manager is supported on all Itanium-based server systems that support nPartitions.

Impact

This update improves your ability to create and maintain reliable nPartition configurations, and increases the security of WBEM connections to remote nPartitions.

Additional steps may be required by you in order to validate SSL certificates. These steps are detailed in the online help at

`/opt/hpwebadmin/webapps/mxhelp/parmgr/en/starting.html#cimserver`

Compatibility

There are no known compatibility issues.

Performance

You should be aware of the following items that may affect performance:

- When managing a remote partitionable complex, the performance degrades when the connection traverses long network distances, e.g. managing a partitionable complex in California from a system in New York. Furthermore, when managing a remote system, performance can be improved by connecting to an nPartition Provider on the remote system, rather than connecting directly to the system's service processor.

- A noticeable delay may occur at startup, and the first time that each Partition Manager view is displayed. This is due to the initial compilation of the Java Server Pages by the HP-UX Tomcat-based Servlet Engine. This compilation occurs the first

time that a view is displayed after the Servlet Engine is started or restarted. Once a given view has been displayed, subsequent displays of that view will be significantly faster.

- When managing a remote system, possible performance improvements can be obtained by running the Web browser on the local system, instead of running the browser remotely to a local X Server.

- The nPartition Provider[1] maintains a cache of information about systems being managed. This cache is cleared when the nPartition Provider is unloaded by the CIM server. Performance may be reduced when managing a system for the first time, or immediately after the CIM server has been restarted. Subsequent management sessions of the same system will be faster.

Documentation

The primary documentation for this product consists of a set of HTML online help files. The online help is accessed through context-sensitive help links in Partition Manager, and also can be viewed outside of the product by pointing a Web browser to

`/opt/hpwebadmin/webapps/mxhelp/parmgr/en/overview.html`

The `parmgr` command (which can be used to start or stop Partition Manager) is documented in the *parmgr* (1M) manpage that is included with the product. Both English and Japanese versions of the manpage are included.

The latest release of Partition Manager can be downloaded for free from the HP Web at

`http://software.hp.com/portal/swdepot/displayProductInfo.do?productNumber=ParMgr`

Obsolescence

Not applicable.

HP Servicecontrol Manager

HP Servicecontrol Manager (SCM) provides a convenient multi-system management solution for HP-UX and Linux systems. You can access SCM using a Web-enabled graphical user interface or a command line interface. SCM enables you to execute HP-UX and Linux manageability tools, including custom tools and scripts, across multiple systems simultaneously.

Summary of Change

SCM has been updated to version 3.05 to incorporate defect fixes.

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1. For more information about nPartition Provider, see "nPartition Provider" on page 66.

Impact

There are no impacts.

Compatibility

Servicecontrol Manager version 3.05 supports the following operating systems:

- For the central management server:
    - HP-UX 11.0
    - HP-UX 11i v1
    - HP-UX 11i v2
    - Red Hat Linux 7.2 Professional
    - Red Hat Linux 7.3 Professional
    - SuSE Linux 8.0 Professional
- For a managed node:
    - HP-UX 11.0
    - HP-UX 11i v1
    - HP-UX 11i v2
    - Red Hat Linux 7.2 Professional
    - Red Hat Linux 7.3 Professional
    - SuSE Linux 8.0 Professional

Performance

There are no performance issues.

Documentation

Further information about Servicecontrol Manager can be found at the following Web sites:

- `http://software.hp.com/products/SCMGR/`
- `http://www.docs.hp.com/hpux/netsys/index.html#Servicecontrol%20Manager`

Obsolescence

Not applicable.

HP WBEM Services for HP-UX

HP WBEM Services for HP-UX is a platform- and resource-independent Distributed Management Task Force (DMTF) standard (`http://www.dmtf.org/`) that defines both a common model (i.e., description) and protocol (i.e., interface) for monitoring and controlling a diverse set of resources. The HP WBEM Services for HP-UX product is the HP-UX implementation of the DMTF WBEM standard.

HP WBEM Services for HP-UX, version A.01.05.08, supports HP-UX 11i v2 and is included as a component in the 11i v2 OE. This product is based on The Open Group (TOG) OpenPegasus Open Source Software (OSS) project (`http://www.openpegasus.org`).

Summary of Change

To resolve known security defects in OpenSSL 0.9.6i, this version of HP WBEM Services has been upgraded to use OpenSSL 0.9.6k. Refer to SSRT3622 "Potential Security Vulnerabilities in HP WBEM Services for HP-UX" for additional details.[1]

Impact

There are no impacts.

Compatibility

There are no known compatibility issues.

Performance

There are no known impact to performance.

Documentation

For further information, refer to the HP WBEM Solutions for HP-UX Web site at `http://www.hp.com/large/infrastructure/management/wbem/hpux/index.html`.

Obsolescence

Not applicable.

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1. Security bulletins can be viewed at the IT Resource Center at `http://itrc.hp.com/cki/bin/doc.pl/screen=ckiSecurityBulletin`. (You must first register and log in.)

Ignite-UX

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

- install HP-UX 11.0 and 11i v1 (B.11.11), v1.6 (B.11.22), v2 (B.11.23) on multiple PA-RISC and/or Itanium-based clients on your network;

- create custom install configurations, or golden images, for use in multiple installations on clients;

- recover HP-UX clients remotely;

- create custom recovery media including tape, and CD-ROM;

- manage and monitor multiple client installation sessions.

Summary of Change

Version B.5.2 delivers the following:

- An issue with the installation and recovery of HP-UX 10.20 and 11.00 clients that was discovered in the Ignite-UX B.5.0.x and B.5.1.x versions has been resolved. For more information, see customer bulletin Part # 5990-7242 at the HP IT Resource Center at `http://itrc.hp.com/` and the Ignite-UX Web site at the HP Software Depot at `http://www.software.hp.com/products/IUX`.

- The `make_*_recovery` tools have been updated to:

  — support file sizes up to 8 GB for HP-UX 11i v1 and later, though these tools only support file sizes up to 2 GB for the 11.00 and 10.20 releases;

  — recover mount points in the essentials list that are in non-root volume group using the options of `-x include` and `-x inc_entire`;

  — describe the function of the `_hp_ignore_sw_impact` variable in the WARNINGS section of *instl_adm* (4);

  — install an archive file size that is greater than 2 GB.

- Installation and recovery of Itanium-based and PA-RISC servers and clients now occurs automatically by Ignite-UX detecting the hardware type and installing the correct operating system binaries accordingly.

- Large file impacts, where the file size is greater than 2 GB, are now computed accurately.

- The call to "vxdisk online", when configuring VxVM layouts, was removed as it was unnecessary and could cause problems in client installs in limited circumstances.

- The GUI has been enhanced to allow the `_hp_addnl_fs_free_pct` parameter to be modified from the **Additional...** button of the **Basic** tab. This allows you to more finely tune disk space allocation. See *instl_adm* (4).

Impact

You can now install and recover clients running HP-UX 10.20 and 11.00 using the B.5.2.*x* version of Ignite-UX.

An additional 5MB (approximately) of disk space is needed to install the needed operating system binary files into `/opt/ignite/bin`.

Ignite-UX now provides greater support for large files.

Compatibility

HP recommends that you avoid the use of Ignite-UX versions B.5.0.*x* and B.5.1.*x*. For specifics regarding this recommendation, see the Ignite-UX Web site at the HP Software Depot:

`http://software.hp.com/products/IUX`

Performance

There are no known performance issues.

Documentation

The *make_tape_recovery* (1M) and *make_net_recovery* (1M) manpages have been updated accordingly.

The *Ignite-UX Administration Guide*, **B2355-90834**, Edition 15 and later, has been updated to reflect all changes to the product and can be found at `http://www.docs.hp.com`.

Ignite-UX product information and documentation, including the Release Notes, is available at `http://www.software.hp.com/products/IUX`.

Obsolescence

Not applicable.

MC/ServiceGuard NFS Toolkit

MC/ServiceGuard NFS is a toolkit that includes the configuration files and control scripts and allows you to use MC/ServiceGuard (MC/SG) to set up highly available NFS servers. Highly available systems protect users from failure of a system processing unit (SPU) or local area network components. In the event that one component fails, the redundant component takes over and MC/ServiceGuard coordinates the transfer between components.

Summary of Change

MC/ServiceGuard NFS Toolkit version A.11.23.02 delivers an enhancement to support File Lock Migration.

Impact

MC/ServiceGuard NFS Toolkit was not originally designed to keep track of which remote NFS clients were holding file locks with the file system associated with highly available packages and transition these locks between servers during a failover event. When enabled, the File Lock Migration enhancement removes this limitation.

Compatibility

As of March 2004, MC/SG version A.11.15 must be installed, as MC/ServiceGuard NFS Toolkit version A.11.23.02 has a dependency on MC/SG A.11.15.

Performance

There are no known performance issues.

Documentation

Please refer to the following MC/ServiceGuard NFS Toolkit product documentation in the "High Availability" section at `http://www.docs.hp.com/`:

- *MC/ServiceGuard NFS Toolkit A.11.23.02 Release Notes* (MPN **5140-90016**)

- *Managing MC/ServiceGuard NFS A.11.11.03 and A.11.23.02* (MPN **B5140-90017**)

Obsolescence

Not applicable.

Quality Pack Patch Bundle

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

Summary of Change

For the March 2004 release of HP-UX 11i v2, only the Base Quality Pack bundle is delivered. It is delivered on the Core OE media as well as the Web at both the ITRC Web site (`http://itrc.hp.com`) and at Software Depot (`http://software.hp.com`).

To view new and changed patches in each Quality Pack release, please view the Quality Pack readme in the docs directory on the OE media[1] or at Software Depot.

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1. The full path, assuming `/cdrom` as the mount point, would be `/cdrom/DOCS/PATCH/`.

Impact

For proactive update and maintenance of your HP-UX systems, use the Quality Pack patch bundles. Prior to installation, you should review the readme file that comes with each release of the Quality Pack.

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

For further information, see the Quality Pack readme files at `/cdrom/DOCS/PATCH/`.

Also refer to the following documents, available in your media kit and at `http://docs.hp.com`:

- *HP-UX 11i Version 2 Installation and Update Guide*
- *Read Before Installing or Updating to HP-UX 11i Version 2*

Also refer to the following Web sites:

- `http://itrc.hp.com`
- `http://software.hp.com`

Obsolescence

Not applicable.

Servicecontrol Manager

HP Servicecontrol Manager (SCM) provides a convenient multi-system management solution for HP-UX and Linux systems. You can access SCM using a Web-enabled graphical user interface or a command line interface. SCM enables you to execute HP-UX and Linux manageability tools, including custom tools and scripts, across multiple systems simultaneously.

Summary of Change

SCM has been updated to version 3.05 to incorporate defect fixes.

Impact

There is no customer impact.

Compatibility

Servicecontrol Manager version 3.05 supports the following operating systems:

- For the central management server:
  - HP-UX 11.0
  - HP-UX 11i v1
  - HP-UX 11i v2
  - Red Hat Linux 7.2 Professional
  - Red Hat Linux 7.3 Professional
  - SuSE Linux 8.0 Professional
- For a managed node:
  - HP-UX 11.0
  - HP-UX 11i v1
  - HP-UX 11i v2
  - Red Hat Linux 7.2 Professional
  - Red Hat Linux 7.3 Professional
  - SuSE Linux 8.0 Professional

Performance

There are no performance issues.

Documentation

Further information about Servicecontrol Manager can be found at the following Web sites:

- `http://software.hp.com/products/SCMGR/`
- `http://www.docs.hp.com/hpux/netsys/index.html#Servicecontrol%20Manager`

Obsolescence

Not applicable.

Software Distributor

Software Distributor (SD) is the HP-UX administration tool set used to deliver and maintain HP-UX operating systems and layered software applications. Delivered as part of HP-UX, SD can help you:

- Manage your OS, patches, and application software on HP-UX systems.

- Organize, standardize, and distribute software to your customers.

- Handle complex delivery challenges such as testing complete solutions for the commercial and technical desktop.

Summary of Change

Software Distributor has been updated to incorporate defect fixes only.

Impact

There are no impacts beyond added capability and increased performance.

Compatibility

SD is backward compatible.

Performance

There are no known performance issues.

Documentation

The *Software Distributor Administration Guide* has been updated to reflect all changes. Visit `http://www.software.hp.com/products/SD_AT_HP/` for this and other documentation.

Obsolescence

Not applicable.

Software Package Builder (SPB)

Software Package Builder (SPB) provides a visual method to create and edit software packages using the HP-UX Software Distributor (SD) package format. Once software is packaged, it can easily be transferred to a distribution medium, mass produced, and installed by administrators.

The SPB graphical user interface (GUI) provides a window into the software package structure, showing attributes that can be set for each package element. SPB dynamically loads packaging policies and validates software package attributes against these policies. The SPB command line interface (CLI) can also perform validation of software package attributes against policies and supports automated edits to the software package specification.

Whether you are new to packaging or experienced, SPB can help you. Features of SPB include:

- Create a product specification file (PSF) to organize files into products, filesets, and optionally, into bundles and subproducts.

- Set attribute values to define the software package characteristics such as revision, architecture, file permissions, and dependencies.

- Control scripts can further customize how the software is handled when installing or removing it on the destination system.

- Validate the PSF against packaging policies to ensure successful depot creation with the `swpackage` command and subsequent software installation.

- Edit and validate the PSF automatically as part of the nightly build process using SPB's CLI.

With SPB, developers and administrators can easily package software in SD format, making management of software with standard SD tools (such as `swinstall`, `swlist`, `swremove`) possible. For example, SPB makes it easy to put an SD wrapper around open source software. As a result, software inventory management and system administration get easier.

Summary of Change

SPB has been updated to version A.01.04 to allow the setting of corequisites and prerequisites attributes using the OR relationship.

Additionally, functionality has been added to allow SPB to detect ambiguous objects. Some objects, such as "vendor," "category," and "subproducts" use only the value of the "tag" attribute to determine whether they are unique from each other. However, "product" and "fileset" objects are differentiated by the combined values of several attributes, which may include "tag," "revision," "architecture," "location," and "vendor_tag." See *swpackage* (5) for more information.

Impact

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

Compatibility

SPB uses Java 1.4.0 or greater.

Performance

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

For this and other troubleshooting topics, refer to the SPB Help system.

Documentation

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

- the `spb` manpage, *spb* (1M)
- the *swpackage* (5) manpage
- the SPB Web site at **http://software.hp.com/products/SPB/**
- the *Software Package Builder 1.0 User's Guide* found at **http://www.docs.hp.com**

Obsolescence

Not applicable.

Update-UX

The `update-ux` command updates the HP-UX operating system to a newer version. Update-UX was new to the initial HP-UX 11i v2 (October 2003) release and allows an update from HP-UX 11i v1.6 (B.11.22).

Summary of Change

The Update-UX product includes a "default selections" file, `update-ux.selections`, which is installed in `/usr/lib/sw`. This file provides a list of bundles that will be selected for install during an OS update. Update-UX now provides support for the `-f selection_file` option on the `update-ux` command line. This allows you to create your own selections file and specify that your file be used in place of the "default selections" file. This provides you with the flexibility to "deselect" any bundles listed in the `update-ux.selections` file by providing your own file, which doesn't contain these bundles. In order to do this, you must first install the March 2004 version of the Update-UX product onto your target system, then copy and edit the `/usr/lib/sw/update-ux.selections` file as desired. Then, when executing `update-ux`, your custom selections file can be specified on the `update-ux` command line via the `-f selection_file` option.

Also in the March 2004 release of HP-UX 11 v2, Update-UX will create two backup kernel configurations from the update process.

- `/stand/backup`: contains the latest updated configuration and any changes that you have made since rebooting your system.

- `/stand/backup_prior_to_update`: contains your configuration saved prior to updating to the latest release of HP-UX 11i v2.

For detailed information on these configurations refer to the are the *HP-UX 11i Version 2 Installation and Update Guide*, available at `http://www.docs.hp.com/hpux/os/11iV2/`.

Impact

You now have the flexibility to "deselect" bundles listed in the `update-ux.selections` file by replacing it with your own selections file. In addition, two backup kernel configurations are now available to you.

Compatibility

There are no known compatibility issues.

Performance

There are no known performance issues.

Documentation

For further information, see the latest *HP-UX 11i v2 Installation and Update Guide*, available at `http://www.docs.hp.com/hpux/os/11iV2/`. Also see the manpage, *update-ux* (1M).

Obsolescence

Not applicable.

6   Disk and File Management

What's in This Chapter?

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

- HP CIFS Client (see page 82)
- HP CIFS Server (see page 82)
- VERITAS File System (VxFS) 3.5 (see page 83)

HP CIFS Client

The HP CIFS Client allows HP-UX users to mount as UNIX filesystems shares from CIFS file servers, including Windows servers, HP-UX machines running HP CIFS Server, Linux system running Samba, and others.

Summary of Change

HP CIFS Client has been updated to version A.01.09.01 to incorporate defect fixes. For further information, see the *HP CIFS Client A.01.09.01 Release Note* (part number **B8724-90055**), available at `http://docs.hp.com`.

Impact

There are no impacts.

Compatibility

There are no known compatibility issues.

Performance

There are no known performance issues.

Documentation

The user manual *HP CIFS Client A.01.09 Administrator's Guide* and product release note *HP CIFS Client A.01.09.01 Release Note* can be found in the "Networking and Communications" section at `http://www.docs.hp.com`.

Obsolescence

Not applicable.

HP CIFS Server

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

Summary of Change

The new version of HP CIFS Server 2.2g (version A.01.10), which is based on Samba 2.2.8a, contains defect fixes and the following new enhancements:

- Provides the SWAT wizard tool for users to configure the `smb.conf` file and minimize the `smb.conf` file size.

- Supports manipulating POSIX directory Access Control Lists (ACLs) from Windows 2000 and XP Clients using Windows ACL advanced interface (Directory > Properties > Security Tab > Advanced Button).

- Supports the following new configuration parameter:

  — max connections per client

For further details, refer to the *HP CIFS Server 2.2g Release Note*, available in the "Networking and Communications" section at **http://docs.hp.com**.

Impact

HP CIFS Server 2.2g incorporates fixes and minor enhancements developed since Samba version 2.2.5.

Compatibility

There are no known compatibility issues.

Performance

There are no known performance issues.

Documentation

For a more detailed description of changes, please refer to the following documentation in the "Networking and Communications" section at **http://docs.hp.com**:

- *HP CIFS Server 2.2e Release Note version A.01.09.04*
- *HP CIFS Server 2.2f Release Note version A.01.09.05*
- *HP CIFS Server 2.2g Release Note version A.01.10*
- *HP CIFS Server 2.2g Administrator's Guide*

Obsolescence

Not applicable.

VERITAS File System (VxFS) 3.5

The VERITAS File System 3.5 (HP OnlineJFS/JFS 3.5) product is an extent-based, intent-logging file system. This product is particularly geared toward UNIX environments that require high performance and availability, and that deal with large volumes of data. The VERITAS File System 3.5 (HP OnlineJFS/JFS 3.5) product is the next generation of the product known as HP OnlineJFS/JFS 3.3.

The base VERITAS File System 3.5 (HP JFS 3.5) is a new version of the base journaled file system for HP-UX 11i and is available at no charge as part of HP-UX 11i v2.

The full VERITAS File System 3.5 (HP OnlineJFS 3.5) enables advanced file system features and is ordered as a separate product.

NOTE   The terms *base VERITAS File System 3.5*, *HP JFS 3.5*, and *base VxFS* are used interchangeably throughout these release notes.

In addition, the terms *full VERITAS File System 3.5*, *HP OnlineJFS 3.5*, and *full VxFS* are used interchangeably throughout these release notes.

All of these terms may appear in other related VERITAS File System (HP OnlineJFS/JFS 3.5) documentation that accompanies this product.

Summary of Change

The VERITAS File System 3.5 (HP OnlineJFS 3.5) now enables creation of file systems of up to 8 TB (maximum file size is 2 TB). The 8 TB file systems creation is currently supported only with VERITAS Volume Manager 3.5 (VxVM 3.5).

Impact

With the support for 8 TB file system sizes, you can now create and use large VxFS file systems up to 8 TB in size.

Compatibility

There are no known compatibility issues.

Performance

There are no known performance issues.

Documentation

For further information, see the following documentation:

- Manpages:

  This release includes the manpages as part of the VERITAS File System 3.5 (HP Online JFS/JFS 3.5) product.

- User Manuals:

  The *VERITAS File System 3.5 (HP Online JFS/JFS 3.5) Administrator's Guide* has been updated and is available at `http://docs.hp.com`.

Obsolescence

Not applicable.

7 Internet and Networking

What's in This Chapter?

This chapter describes new and changed Internet and networking functionality supported by the HP-UX 11i v2 release, including:

HP-UX Web Server Suite

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

- HP-UX Apache-based Web Server (see page 88)
- HP-UX Webmin-based Admin (see page 89)
- HP-UX Tomcat-based Servlet Engine (see page 89)
- HP-UX XML Web Server Tools (see page 90)

Installation

The following installation changes have been made in the initial HP-UX 11i v2 release (October 2003):

- Products are now separately installable into their own directory under `/opt/hpws/`.

NOTE   Shared documentation, such as Migration Guides and FAQs, are located at `/opt/hpws/hp_docs` and are included in the HP-UX Webmin-based Admin product.

Table 7-1   Locations of Apache Products

Product	Location
HP-UX Apache-based Web Server	`/opt/hpws/apache`
HP-UX Tomcat-based Servlet Engine	`/opt/hpws/tomcat`
HP-UX Webmin-based Admin	`/opt/hpws/webmin`
HP-UX XML Web Server Tools	`/opt/hpws/xmltools`

- After installing, use the `README` and `GETTING_STARTED` documents for details on prerequisites and starting each component. The `README` is located at `/opt/hpws/README`. The `GETTING_STARTED` document is found in multiple locations under each component directory (i.e., `/opt/hpws/apache/GETTING_STARTED`).

- Products do *not* start automatically after installation. Previously, Apache would try to start on port 80.

- For updates, new configuration files are delivered in the standard location if the existing one is unchanged or nonexistent. Otherwise, they are delivered in an alternate location, allowing the system administrator to incorporate the changes individually. Detailed information can be found in the `GETTING_STARTED` document.

- Filenames and variables have changed for the RC (Resource Configuration) files, located in the `/etc/rc.config.d/` directory.

Table 7-2   **Resource Configuration Filenames**

Product	Filename
HP-UX Apache-based Web Server	`hpws_apacheconf`
HP-UX Tomcat-based Servlet Engine	`hpws_tomcatconf`
HP-UX Webmin-based Admin	`hpws_webminconf`
HP-UX XML Web Server Tools	`hpws_xmltoolsconf`

Installation Requirements

The following requirements must be fulfilled before certain components/features will work. See the following documentation section for the location of further information.

- Building Apache DSOs using `apxs` depends on Perl installed at `/opt/perl/bin/perl`.

- Fast Perl scripts and Apache modules written in Perl require `mod_perl` to be configured and Perl 5.8.0 (available with the Operating Environment) to be installed.

- HP-UX Tomcat-based Servlet Engine and HP-UX XML Web Server Tools requires HP-UX Developer's Kit for Java 1.3 or later. If your Web application uses Java Server Pages (JSPs) then you will also need the Java Development Kit (JDK) so you can compile the JSPs.

- HP-UX Webmin-based Admin depends on Perl 5 or later.

Documentation

Bundled documentation (Release Notes, Admin Guides, User Guides, Migration Guides and FAQs) now install into `/opt/hpws/hp_docs`. These documents can be accessed through HP-UX Apache-based Web Server, HP-UX Tomcat-based Servlet Engine, and HP-UX Webmin-based Admin by browsing to **http://yourserver.com/hp_docs** on the appropriate port (i.e., for Webmin on port 10000, the URL should be: **http://yourserver.com:10000/hp_docs**).

NOTE   Shared documentation, such as Migration Guides and FAQs, are located at `/opt/hpws/hp_docs` and are included in the HP-UX Webmin-based Admin product.

The latest information can also be found on the product Web site: **http://www.hp.com/go/webserver**

HP-UX Apache-based Web Server

HP-UX Apache-based Web Server combines Apache with numerous popular modules from other Open Source projects and provides HP value-added features for the HP-UX platform:

- Scripting capabilities: PHP, `mod_perl`, CGI

- Content management: WebDAV

- Security: authentication through an LDAP server, Chrooted environment, SSL and TLS support

Summary of Change

HP-UX Apache-based Web Server v.1.0.10.03 is primarily a security and bug fix release which addresses the following vulnerabilities and problems:

- Apache upgraded to 2.0.48

  All users are urged to upgrade immediately to Apache 2.0.48, which is a cumulative release that addresses and fixes the security vulnerabilities described at **http://cve.mitre.org/** (CAN-2003-0789, CAN-2003-0542), including all previously reported problems such as those described at **http://cve.mitre.org/** (CAN-2003-0192, CAN-2003-0253, CAN-2003-0254) and at **http://nagoya.apache.org/bugzilla/index.html** (PR19849, PR21370, PR19753).

- OpenSSL upgraded to 0.9.7.c

  All users are urged to upgrade immediately to Apache 2.0.48, which is a cumulative release that addresses and fixes the security vulnerabilities described at **http://cve.mitre.org/** (CAN-2003-0543, CAN-2003-0544).

Impact

See "Installation" on page 86.

Compatibility

This release is binary-compatible with Apache 2.0.42 and greater. All the modules compiled with Apache 2.0.42 or greater will continue to work with this version since the Apache API has not changed.

Performance

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

Documentation

See "Documentation" on page 87.

Obsolescence

Not applicable.

HP-UX Tomcat-based Servlet Engine

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

Summary of Change

HP-UX Tomcat-based Servlet Engine v.1.0.10.01 is a minor release to correspond with the HP-UX Apache-based Web Server v.1.0.10.03 with Apache 2.0.48. The following has been changed:

- `mod_jk` upgraded to v1.2.5

Impact

See "Installation" on page 86.

Compatibility

Server-side Java Servlets and JavaServer Pages (JSPs) that used Tomcat 3.x or JServ may need to be modified to use Tomcat 4.x. Configuration files have also changed in Tomcat 4.x. Details about changes can be found in the *Tomcat Migration Guide* which is included in the product. See "Documentation" on page 87 for more information.

Performance

There are no performance issues.

Documentation

See "Documentation" on page 87.

Obsolescence

Not applicable.

HP-UX Webmin-based Admin

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

Summary of Change

HP-UX Webmin-based Admin is unchanged for the March 2004 release. For changes in the initial HP-UX 11i v2 release (October 2003), see the *HP-UX 11i Version 2 Release Notes*, available on the Instant Information media and at the HP documentation Web site at **http://docs.fc.hp.com/hpux/os/11iv2/index.html#Release%20Notes**.

Complete documentation detailing changes can be found after installing, at /opt/hpws/hp_docs or at **http://www.hp.com/go/webserver**.

Impact

See "Installation" on page 86.

Compatibility

There are no compatibility issues.

Performance

There are no performance issues.

Documentation

See "Documentation" on page 87.

Obsolescence

Not applicable.

HP-UX XML Web Server Tools

HP-UX XML Web Server Tools is a collection of a Java-based XML tools used for XML parsing, stylesheet and XSL processing, Web-publishing and image translating from the Open Source projects: Xerces, Xalan, Cocoon, FOP, and Batik.

Summary of Change

HP-UX XML Web Server Tools is unchanged for the March 2004 release. For changes in the initial HP-UX 11i v2 release (October 2003), see the *HP-UX 11i Version 2 Release Notes*, available on the Instant Information media and at the HP documentation Web site at `http://docs.fc.hp.com/hpux/os/11iv2/index.html#Release%20Notes`.

Complete documentation detailing changes can be found after installing, at `/opt/hpws/hp_docs` or at `http://www.hp.com/go/webserver`.

Impact

See "Installation" on page 86.

Compatibility

There are no compatibility issues.

Performance

There are no performance issues.

Documentation

See "Documentation" on page 87.

Obsolescence

Not applicable.

LAN Commands

The lanadmin Command

The Local Area Network Administration Program, `lanadmin`, administers and tests the Local Area Network (LAN).

The `landiag` command is a hard link to the `lanadmin` command.

Summary of Change

The `lanadmin` command has a hard link to it called `/usr/bin/landiag`, which has been maintained for compatibility reasons. The `landiag` program and command have been deprecated and will be obsoleted post HP-UX 11i v2. Along with the `landiag` program, the transition link for `landiag` being maintained as `/etc/landiag` will also be obsoleted.

The `landiag` manpage is currently a copy of the `lanadmin` manpage. The `landiag` manpage will also be obsoleted post HP-UX 11i v2.

Impact

Post HP-UX 11i v2, you will have to use the `lanadmin` command instead of the `landiag` command.

Compatibility

There are no known compatibility issues.

Performance

There are no known performance issues.

Documentation

The `landiag` manpage will be obsoleted post HP-UX 11i v2. For further information about `lanadmin`, see the manpage *lanadmin* (1M).

Also see the *Driver Development Guide*, available from the Developer and Solution Partner Program (DSPP) at **http://h21007.www2.hp.com/dev/**.

Obsolescence

See the above section, "Summary of Change."

The lanscan Command

The `lanscan` command displays LAN device configuration and status.

Summary of Change

Due to the future obsolescence of the Transition Links product, the file `/etc/lanscan` will not be replaced by a symbolic link post HP-UX 11i v2.

Impact

Post HP-UX 11i v2, users of the `lanscan` command who access it from the `/etc` path will have to include `/usr/sbin` in the $PATH environment variable so as to use `/usr/sbin/lanscan`.

Any scripts using `/etc/lanscan` will have to change to `/usr/sbin/lanscan`.

Compatibility

There are no known compatibility issues.

Performance

There are no known performance issues.

Documentation

For further information about `lanscan`, see the manpage *lanscan* (1M).

Also see the *Driver Development Guide*, available from the Developer and Solution Partner Program (DSPP) at **http://h21007.www2.hp.com/dev/**.

Obsolescence

See the above section, "Summary of Change."

The linkloop Command

The `linkloop` command verifies LAN connectivity with link-level loopback.

Summary of Change

Due to the future obsolescence of the Transition Links product, the file `/etc/linkloop` will not be replaced by a symbolic link post HP-UX 11i v2.

Impact

Post HP-UX 11i v2, users of the `linkloop` command who access it from the `/etc` path will have to include `/usr/sbin` in the $PATH environment variable so as to use `/usr/sbin/linkloop`.

Any scripts using `/etc/lanscan` will have to change to `/usr/sbin/linkloop`.

Compatibility

There are no known compatibility issues.

Performance

There are no known performance issues.

Documentation

For further information about `linkloop`, see the manpage *linkloop* (1M).

Also see the *Driver Development Guide*, available from the Developer and Solution Partner Program (DSPP) at **http://h21007.www2.hp.com/dev/**.

Obsolescence

See the above section, "Summary of Change."

Web Browsing

HP-UX 11i v2 includes the Mozilla Application Suite as the supported Web browser. As of March 2004, Netscape is no longer included, but can be downloaded at `http://www.hp.com/go/netscape`.

Mozilla Application Suite

The Mozilla Application Suite (product number **B9005AA**) is an Open Source Web browser, email client, and HTML editor. Mozilla has replaced Netscape as the supported browser on HP-UX.

Summary of Change

Mozilla 1.4.00.01 contains full Japanese localization as well as other defect fixes and enhancements.

Impact

The changes allow you to use the browser with complete Japanese localization and also benefit from defect fixes, enhancements, and more advanced standards compliance.

Compatibility

This Mozilla release will install on top of previous releases. It will not interfere with Netscape installations. For information on interactions with browser plug-ins, please see `http://www.hp.com/go/mozilla`.

Performance

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

Documentation

Documentation is included in the Mozilla Help menu and the README files delivered with the product. You can also go to `http://www.hp.com/go/mozilla`.

Obsolescence

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

8 Security

What's in This Chapter?

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

- HP-UX Host Intrusion Detection System (see page 96)
- HP-UX IPFilter (see page 96)

HP-UX Host Intrusion Detection System

HP-UX Host Intrusion Detection System (HIDS) version 2.2, product number **J5083AA**, provides continuous and near real-time surveillance for HP-UX servers to help identify potential malicious activities on the host.

Summary of Change

As a maintenance release for March 2004, HIDS v2.2 has been updated to include a defect fix for the detection of logins.

Impact

There are no impacts.

Compatibility

There are no know compatibility issues.

Performance

There are no known performance issues.

Documentation

All documentation is available on the Web at `http://www.docs.hp.com/hpux/internet/` (select "Intrusion Detection System"), including:

- *HP-UX Host Intrusion Detection System Administrator's Guide* (Part Number: **J5083-90011**)

- *HP-UX Host Intrusion Detection System Version 2.2 Release Notes* (Part Number: **J5083-90012**)

Obsolescence

HP-UX HIDS (formerly known as IDS/9000) v1.0 has been deprecated and is planned for future obsolescence.

HP-UX IPFilter

HP-UX IPFilter (B9901AA) version A.03.05.06 is a statefull system firewall that filters IP packets to control packet flow in or out of a machine. It works as a security defense by cutting down on the number of exposure points on a machine.

HP-UX IPFilter is based on ipfilter v3.5 alpha 5 from the public domain.

Summary of Change

Impact

Compatibility

Performance

There are no known performance issues.

Documentation

Obsolescence

Not applicable.

9 Commands and System Calls

What's in This Chapter?

This chapter includes information about new and changed commands and system calls. Topics for this chapter are unchanged for the March 2004 release of HP-UX 11i v2.

For a summary of changes in the initial release (October 2003) of HP-UX 11i v2, see "What's New in the Initial HP-UX 11i v2 Release?" on page 33. For details of these changes, see the *HP-UX 11i Version 2 Release Notes*, available on the Instant Information media and on the Web at **http://www.docs.hp.com/hpux/os/11iV2/**.

10 Libraries and Programming

What's in This Chapter?

This chapter covers a wide variety of changes of particular interest to programmers, such as changes to compilers, editors, and libraries, including:

- GTK+ Libraries (see page 102)

- HP Message Passing Interface (MPI) (see page 102)

- Perl (see page 104)

GTK+ Libraries

The GTK+ Libraries are the open source GNU toolkit for X windows development. This copy provided in HP-UX 11i v2 (product number: **B6848BA**) is only supported for use with the Mozilla Application Suite, which depends on it. (For more information on the Mozilla Application Suite, see "Mozilla Application Suite" on page 93.)

Summary of Change

The GTK+ Libraries have been updated to version 1.4.gm.46.4 to support changes to the Operating Environments. No new functionality has been added.

Impact

There are no impacts.

Compatibility

There are no known compatibility issues.

Performance

There are no known performance issues.

Documentation

For further information, see the following Web sites:

- `http://www.software.hp.com/cgi-bin/swdepot_parser.cgi/cgi/displayProductInfo.pl?productNumber=B6848BA`

- `http://www.gtk.org/announce.html`

Obsolescence

Versions of the GTK will be distributed for as long as dependent versions of the Mozilla Application Suite are distributed. Any defects will be addressed in future versions of the GTK. No patches will be released.

HP Message Passing Interface (MPI)

HP Message Passing Interface (MPI) version 2.0 is a high-performance implementation of the Message Passing Interface standard. HP MPI complies fully with the 1.2 standard. HP MPI provides an application programming interface and software libraries to support parallel, message passing applications that are efficient, portable, and flexible.

Summary of Change

HP MPI version 2.0 includes the following:

- Full MPI-2 Standard functionality including:
    - Dynamic processes
    - Extended collectives
    - One-sided communications
    - Thread safety
    - `MPI_BOTTOM` language interoperability
    - Updated ROMIO
- Interconnects supported include:
    - HyperFabric
    - TCP/IP on clusters
    - Shared memory for intranode communication
- Visual MPI for debugging and analysis
- Support for truncated messages
- Limited H/A mode
- MPI versioning
- `mpirun` global environment variable settings via command line
- New `mpirun` command line options

Impact

There are no impacts.

Compatibility

There are no known compatibility issues.

Performance

There are no known performance issues.

Documentation

Manpages are installed in `/opt/mpi/share/man`. Manpages for HP MPI utilities are located in man1*. Manpages for the HP MPI library are located in man3*.

The *HP MPI User's Guide* (Eighth Edition) is available at **http://docs.hp.com/hpux/pdf/B6060-96013.pdf** and from the **www.hp.com/go/mpi** Web site at **http://h21007.www2.hp.com/dspp/files/unprotected/mpi/hpux/B6060-96013.pdf**

The *HP MPI V2.0 for HP-UX Release Note* is available at
`http://docs.hp.com/hpux/pdf/B6060-96014.pdf` and from the `www.hp.com/go/mpi`
Web site at
`http://h21007.www2.hp.com/dspp/files/unprotected/mpi/hpux/B6060-96014.pdf`

Obsolescence

Not applicable.

Perl

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

Summary of Change

In Perl 5.8.0 build 806, several bug fixes and other improvements have been merged
from the Perl development track. In particular, many of these fixes address problems in
the PerlIO implementation in the previous version Perl 5.8.0 build 803.

Impact

There are no known impacts beyond those discussed below.

Compatibility

Perl 5.8 is not binary compatible with earlier releases of Perl. Hence, existing XS
modules have to be recompiled. (Pure Perl modules should continue to work.)

The major reason for the discontinuity is the new IO architecture called PerlIO, which is
the default configuration. Without it, many new features of Perl 5.8 cannot be used. In
other words, you just have to recompile your modules containing XS code.

Performance

There are no performance issues.

Documentation

For further information, see the following:

- Manpages in `/opt/perl/man`
- Web sites:
    - `www.perl.org`

— `www.activestate.com`

— `http://learn.perl.org`

Obsolescence

Not applicable.

11 Internationalization

What's in This Chapter?

This chapter describes internationalization functionality, including:

- Deprecated Functionality (see page 108)

Deprecated Functionality

Several commands, library routines and lp model files that implement internationalization functionality are being deprecated as of the October 2003 and March 2004 HP-UX 11i v2 releases.

For information about the internationalization functionality deprecated in October 2004, see the *HP-UX 11i Version 2 Release Notes*, available on the Instant Information media and at `http://docs.hp.com`.

For information about the internationalization functionality deprecated in March 2004, see "Summary of Change" below

Summary of Change

The ATOK 8 Japanese input method is now in deprecated status, and will not be included in future major releases of HP-UX.

ATOK X, the enhanced version of ATOK8, is included in HP-UX 11i v2. It includes the SuperATOK Kana-to-Kanji conversion engine and provides more comfortable and effective Japanese input. It also provides a migration capability for the user-defined dictionary and key-mappings from the ATOK 8, VJE-gamma, and EGBridge input methods.

Impact

There are no changes to the current product. The ATOK X input method is provided in this release. You should transition usage of ATOK 8 to ATOK X.

Compatibility

There are no known compatibility issues.

Performance

There are no known performance issues.

Documentation

There are no changes to product-specific documentation.

Obsolescence

Not applicable.

12 Other Functionality

What's in This Chapter?

This chapter describes other new and changed operating-system software functionality, including the following:

- HP-UX OpenGL Run Time Environment and Developer's Kit (see page 110)

HP-UX OpenGL Run Time Environment and Developer's Kit

HP-UX OpenGL Run Time Environment and Developer's Kit contains all of the required daemons and loadable modules for the Graphics run time environment, as well as all necessary source files and header files to develop applications using HP's implementation of the OpenGL 3D graphics API.

Summary of Change

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

Impact

There are no impacts.

Compatibility

There are no known compatibility issues.

Performance

There are no known performance issues.

Documentation

The following documents can be found at `http://www.hp.com/support/workstation_manuals/`:

- *HP OpenGL Release Notes of IPF-Based Systems*
- *Release Notes for HP Common 3D Graphics for HP-UX 11.0 (September 2002) on IPF-Based Systems*
- *OpenGL Implementation Guide for HP-UX 11.X (IPF version)*
- *Graphics Administration Guide for HP-UX 11.X (IPF version)*

Obsolescence

Not applicable.