

# HP-UX 11i Version 3 September 2007 Release Notes Operating Environments Update Release

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## Publication History

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

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

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

## Current Document in This Series

- *HP-UX 11i Version 3 September 2007 Release Notes, Edition 3, MPN 5992-3231*



**NOTE:** Revisions to the initial (February 2007) *HP-UX 11i Version 3 Release Notes* are contained in the *HP-UX 11i v3 Release Notes Errata* (MPN 5991-7585), located at <http://docs.hp.com/en/oshpux11iv3.html> (navigate to **Release Notes**).

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## Previous Documents in This Series

- *HP-UX 11i Version 3 September 2007 Release Notes, Edition 2, MPN 5992-1996* (retired)
- *HP-UX 11i Version 3 September 2007 Release Notes, Edition 1, MPN 5992-0698* (retired)
- *HP-UX 11i v3 Release Notes Errata*, (updated as necessary), MPN 5991-7585
- *HP-UX 11i Version 3 Release Notes* (February 2007), Edition 1, MPN 5991-6469

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### Typographic Conventions

We use the following typographical conventions.

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



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# Table of Contents

<b>1 About This Document.....</b>	<b>21</b>
What is in This Chapter?.....	21
What is the Purpose of the HP-UX 11i Version 3 September 2007 Release Notes?.....	22
Where Should I Begin?.....	23
What is in the Remaining Chapters?.....	23
Related Information.....	25
Other Sources of Information about This Release.....	26
Locating Release Notes for Previous Versions of HP-UX.....	28
<b>2 Introduction to HP-UX 11i Version 3.....</b>	<b>29</b>
What is in This Chapter?.....	29
Welcome to HP-UX 11i Version 3.....	30
HP-UX 11i Release Names and Release Identifiers.....	31
New HP-UX 11i v3 Operating Environment Structure.....	32
HP-UX 11i v3 Software Bundles .....	32
HP-UX 11i v3 Operating Environments.....	33
Overview.....	33
HP-UX 11i v3 Foundation Operating Environment.....	33
HP-UX 11i v3 Enterprise Operating Environment.....	36
HP-UX 11i v3 Mission Critical Operating Environment.....	36
HP-UX 11i v3 Technical Computing Operating Environment.....	37
Software Pack (Optional HP-UX 11i v2 Core Enhancements).....	37
HP-UX 11i Compatibility for HP Integrity and HP 9000 Servers.....	37
Introduction.....	37
Compatibility across Operating System Releases and Hardware Platforms.....	38
Compatibility within HP-UX 11i Virtualization Solutions.....	38
Compatibility between Architecture Families.....	38
Support.....	38
Definition of Terms and Levels of Compatibility.....	39
For More Information.....	39
Compatibility Issues or Exceptions in HP-UX 11i v3 September 2007.....	39
<b>3 What is New at a Glance.....</b>	<b>41</b>
What is in This Chapter?.....	41
What is New in the HP-UX 11i v3 September 2007 Release?.....	42
What is New in the Initial (February 2007) HP-UX 11i v3 Release?.....	48
What is New for Customers Migrating from HP-UX 11i v1 September 2005?.....	48
What is New for Customers Migrating from HP-UX 11i v2 June 2006?.....	60
<b>4 Hardware-Specific Information.....</b>	<b>73</b>
What's in This Chapter?.....	73
Hardware Enablement Bundle for HP-UX 11i v3.....	74
Summary of Change.....	74
Impact.....	74
Compatibility.....	75
Performance.....	75
Documentation.....	75
Obsolescence.....	75

HP Instant Support Enterprise Edition.....	75
Summary of Change.....	75
Impact.....	75
Compatibility.....	75
Performance.....	76
Documentation.....	76
Obsolescence.....	76
Mass Storage Stack.....	76
Summary of Change.....	76
Impact.....	76
Compatibility.....	76
Performance.....	77
Documentation.....	77
Obsolescence.....	77
I/O Subsystem.....	77
Summary of Change.....	77
Impact.....	78
Compatibility.....	78
Performance.....	78
Documentation.....	78
Obsolescence.....	78
Networking and Mass Storage Drivers.....	78
Required Networking Drivers.....	79
10GigEthr-00 10 Gigabit Ethernet Bundle (ixgbe).....	79
Summary of Change.....	79
Impact.....	79
Compatibility.....	79
Performance.....	79
Documentation.....	79
Obsolescence.....	79
GigEther-00 Gigabit Ethernet Driver Bundle (gelan).....	79
Summary of Change.....	79
Impact.....	80
Compatibility.....	80
Performance.....	80
Documentation.....	80
Obsolescence.....	80
GigEther-01 Gigabit Ethernet Driver Bundle (igelan).....	80
Summary of Change.....	80
Impact.....	80
Compatibility.....	80
Performance.....	80
Documentation.....	81
Obsolescence.....	81
IEther-00 Gigabit Ethernet Networking Driver (iether).....	81
Summary of Change.....	81
Impact.....	81
Compatibility.....	81
Performance.....	81
Documentation.....	81
Obsolescence.....	82
100BT (btlan) 100BASE-T Ethernet Driver .....	82
Summary of Change.....	82
Impact.....	82
Compatibility.....	82

Performance.....	82
Documentation.....	82
Obsolescence.....	82
HP PCI Ultra160 SCSI Driver.....	82
Summary of Change.....	82
Impact.....	82
Compatibility.....	83
Performance.....	83
Documentation.....	83
Obsolescence.....	83
Optional Networking Drivers.....	83
IB4X-00 InfiniBand Clustering System.....	83
Summary of Change.....	83
Impact.....	83
Compatibility.....	83
Performance.....	83
Documentation.....	84
Obsolescence.....	84
Required Mass Storage Drivers.....	84
CommonIO Bundle.....	84
Summary of Change.....	84
Impact.....	84
Compatibility.....	84
Performance.....	84
Documentation.....	84
Obsolescence.....	84
FibrChanl-00 Fibre Channel Mass Storage Driver for HP-UX 11i v3 .....	85
Summary of Change.....	85
Impact.....	85
Compatibility.....	85
Performance.....	85
Documentation.....	85
Obsolescence.....	85
FibrChanl-01 Fibre Channel Mass Storage Driver .....	85
Summary of Change.....	85
Impact.....	85
Compatibility.....	85
Performance.....	85
Documentation.....	86
Obsolescence.....	86
RAID-01.....	86
Summary of Change.....	86
Impact.....	86
Compatibility.....	86
Performance.....	86
Documentation.....	86
Obsolescence.....	86
scsiU320-00 Bundle.....	86
Summary of Change.....	86
Impact.....	87
Compatibility.....	87
Performance.....	87
Documentation.....	87
Obsolescence.....	87
SerialSCSI-00 Bundle.....	87

Summary of Change.....	87
Impact.....	87
Compatibility.....	87
Performance.....	87
Documentation.....	87
Obsolescence.....	87
USB-00.....	88
Summary of Change.....	88
Impact.....	88
Compatibility.....	88
Performance.....	88
Documentation.....	88
Obsolescence.....	88
Supported Systems.....	88
Finding Firmware Information.....	89
Supported and Unsupported HP-UX I/O Cards.....	89
Utility Pricing Solutions.....	89
HP Instant Capacity.....	90
Summary of Change.....	90
Impact.....	90
Compatibility.....	90
Performance.....	90
Documentation.....	90
Obsolescence.....	91
<b>5 General System Administration.....</b>	<b>93</b>
What is in This Chapter?.....	93
Feature Enablement Patch Bundle (Feature11i).....	95
Summary of Change.....	95
Impact.....	95
Compatibility.....	95
Performance.....	95
Documentation.....	95
Obsolescence.....	95
Quality Pack Patch Bundles.....	95
Summary of Change.....	95
Impact.....	96
Compatibility.....	96
Performance.....	96
Documentation.....	96
Obsolescence.....	96
Dynamic Root Disk (DRD).....	96
Summary of Change.....	96
Impact.....	96
Compatibility.....	97
Performance.....	97
Documentation.....	97
Obsolescence.....	97
Enterprise Cluster Master Toolkit.....	97
Summary of Change.....	97
Impact.....	97
Compatibility.....	97
Performance.....	97
Documentation.....	97



Obsolescence.....	97
Event Monitoring Services.....	98
Summary of Change.....	98
Impact.....	98
Compatibility.....	98
Performance.....	98
Documentation.....	98
Obsolescence.....	98
High Availability Monitors.....	98
Summary of Change.....	98
Impact.....	98
Compatibility.....	98
Performance.....	98
Documentation.....	99
Obsolescence.....	99
HP OpenView GlancePlus Pak.....	99
Summary of Change.....	99
Impact.....	100
Compatibility.....	100
Performance.....	100
Documentation.....	100
Obsolescence.....	100
LVM (Logical Volume Manager) & MirrorDisk/UX.....	100
Summary of Change.....	100
Impact.....	101
Compatibility.....	101
Performance.....	101
Documentation.....	101
Obsolescence.....	101
Online Diagnostics.....	101
Summary of Change.....	101
Impact.....	102
Compatibility.....	102
Performance.....	102
Documentation.....	102
Obsolescence.....	103
System Fault Management.....	103
Summary of Change.....	103
Impact.....	104
Compatibility.....	104
Performance.....	104
Documentation.....	104
Obsolescence.....	104
HP Serviceguard.....	104
Summary of Change.....	104
Impact.....	105
Compatibility.....	105
Performance.....	105
Documentation.....	105
Obsolescence.....	105
HP Serviceguard Extension for RAC.....	105
Summary of Change.....	105
Impact.....	106
Compatibility.....	106
Performance.....	106

Documentation.....	106
Obsolescence.....	106
Ignite-UX.....	106
Summary of Change.....	106
Impact.....	106
Compatibility.....	106
Performance.....	106
Documentation.....	107
Obsolescence.....	107
Update-UX and SW-GETTOOLS.....	107
Summary of Change.....	107
Impact.....	107
Compatibility.....	107
Performance.....	107
Documentation.....	107
Obsolescence.....	108
Software Utilities.....	108
Software Distributor.....	108
Summary of Change.....	108
Impact.....	108
Compatibility.....	108
Performance.....	108
Documentation.....	108
Obsolescence.....	108
Software Package Builder.....	108
Summary of Change.....	109
Impact.....	109
Compatibility.....	109
Performance.....	109
Documentation.....	109
Obsolescence.....	109
HP Partitioning and Virtual Server Environment.....	109
Dynamic nPartitions, cell online activation.....	109
Summary of Change.....	110
Impact.....	110
Compatibility.....	110
Hardware Affected .....	110
Performance.....	110
Documentation.....	110
Obsolescence.....	111
Dynamic nPartitions, cell online deactivation.....	111
Summary of Change.....	111
Impact.....	111
Compatibility.....	111
Hardware Affected .....	111
Performance.....	112
Documentation.....	112
Obsolescence.....	112
HP-UX nPartition Configuration Commands.....	112
Summary of Change.....	112
Impact.....	112
Compatibility.....	112
Performance.....	113
Documentation.....	113
Obsolescence.....	113

nPartition Provider.....	113
Summary of Change.....	113
Impact.....	113
Compatibility.....	113
Performance.....	113
Documentation.....	113
Obsolescence.....	114
Partition Manager (parmgr).....	114
Summary of Change.....	114
Impact.....	114
Compatibility.....	114
Performance.....	114
Documentation.....	114
Obsolescence.....	114
HP-UX Virtual Partitions.....	114
Summary of Change.....	115
Impact.....	115
Compatibility.....	115
Performance.....	115
Documentation.....	115
Obsolescence.....	115
HP Application Discovery.....	115
Summary of Change.....	115
Impact.....	116
Compatibility.....	116
Performance.....	116
Documentation.....	116
Obsolescence.....	116
HP Global Workload Manager.....	116
Summary of Change.....	117
Impact.....	117
Compatibility.....	117
Performance.....	117
Documentation.....	118
Obsolescence.....	118
HP Process Resource Manager.....	118
Summary of Change.....	118
Impact.....	118
Compatibility.....	118
Performance.....	118
Documentation.....	118
Obsolescence.....	118
PRMKernelSW.....	119
Summary of Change.....	119
Impact.....	119
Compatibility.....	119
Performance.....	119
Documentation.....	119
Obsolescence.....	119
PRMLibraries.....	119
Summary of Change.....	119
Impact.....	119
Compatibility.....	119
Performance.....	119
Documentation.....	119

Obsolence	120
HP Integrity Virtual Machines Provider (VM Provider)	120
Summary of Change	120
Impact	120
Compatibility	120
Performance	120
Documentation	120
Obsolence	120
HP Integrity Virtual Machines (VMGuestLib)	120
Summary of Change	120
Impact	120
Compatibility	121
Performance	121
Documentation	121
Obsolence	121
Utilization Provider	121
Summary of Change	121
Impact	121
Compatibility	121
Performance	121
Documentation	122
Obsolence	122
System Management GUIs	122
HP System Management Homepage	122
Summary of Change	122
Impact	122
Compatibility	122
Performance	122
Documentation	122
Obsolence	122
HP Systems Insight Manager	123
Summary of Change	123
Impact	123
Compatibility	123
Performance	124
Documentation	124
Obsolence	125
Distributed Systems Administration Utilities (DSAU)	125
Summary of Change	125
Impact	125
Compatibility	125
Performance	125
Documentation	125
Obsolence	126
Network Interfaces Configuration and Network Services Configuration (ncweb)	126
Summary of Change	126
Impact	126
Compatibility	127
Performance	127
Documentation	127
Obsolence	127
Disks and File Systems (fsweb)	127
Summary of Change	128
Impact	128
Compatibility	128

Performance.....	128
Documentation.....	128
Obsolescence.....	128
HP-UX Accounts for Users and Groups (ugweb) .....	129
Summary of Change.....	129
Impact.....	129
Compatibility.....	129
Performance.....	129
Documentation.....	129
Obsolescence.....	130
HP-UX Kernel Configuration (kcweb).....	130
Summary of Change.....	130
Impact.....	130
Compatibility.....	130
Performance.....	130
Documentation.....	130
Obsolescence.....	131
HP-UX Peripheral Devices Manager (pdweb).....	131
Summary of Change.....	131
Impact.....	131
Compatibility.....	131
Performance.....	131
Documentation.....	131
Obsolescence.....	131
Printer Management (Web-based).....	131
Summary of Change.....	131
Impact.....	132
Compatibility.....	132
Performance.....	132
Documentation.....	132
Obsolescence.....	132
WBEM Services and Providers.....	132
HP WBEM Services for HP-UX.....	132
Summary of Change.....	132
Impact.....	132
Compatibility.....	132
Performance.....	133
Documentation.....	133
Obsolescence.....	133
HP-UX WBEM Fibre Channel Provider.....	133
Summary of Change.....	133
Impact.....	133
Compatibility.....	134
Performance.....	134
Documentation.....	134
Obsolescence.....	134
HP-UX WBEM IOTree Indication Provider.....	134
Summary of Change.....	134
Impact.....	134
Compatibility.....	134
Performance.....	134
Documentation.....	134
Obsolescence.....	134
HP-UX WBEM KC Providers.....	135
Summary of Change.....	135

Impact.....	135
Compatibility.....	135
Performance.....	135
Documentation.....	135
Obsolescence.....	135
HP-UX WBEM LAN Provider for Ethernet Interfaces (WBEMP-LAN-00).....	135
Summary of Change.....	135
Impact.....	136
Compatibility.....	136
Performance.....	136
Documentation.....	136
Obsolescence.....	136
HP-UX WBEM Online Operations Service Provider (OLOS).....	136
Summary of Change.....	136
Impact.....	136
Compatibility.....	136
Performance.....	136
Documentation.....	136
Obsolescence.....	136
HP-UX WBEM RAIDSA Provider.....	137
Summary of Change.....	137
Impact.....	137
Compatibility.....	137
Performance.....	137
Documentation.....	137
Obsolescence.....	137
HP-UX WBEM SAS Provider.....	137
Summary of Change.....	137
Impact.....	137
Compatibility.....	137
Performance.....	137
Documentation.....	137
Obsolescence.....	137
HP-UX WBEM SCSI Provider.....	138
Summary of Change.....	138
Impact.....	138
Compatibility.....	138
Performance.....	138
Documentation.....	138
Obsolescence.....	138
<b>6 Disk and File Management.....</b>	<b>139</b>
What is in This Chapter?.....	139
HP CIFS Server.....	140
Summary of Change.....	140
Impact.....	140
Compatibility.....	140
Performance.....	140
Documentation.....	140
Obsolescence.....	141
<b>7 Internet and Networking.....</b>	<b>143</b>
What's in This Chapter?.....	143

HP-UX Mobile IPv4.....	144
Summary of Change.....	144
Impact.....	144
Compatibility.....	144
Performance.....	144
Documentation.....	144
Obsolescence.....	144
Internet Services.....	144
Multimedia Streaming Protocols (MSP).....	145
Summary of Change.....	145
Impact.....	145
Compatibility.....	145
Performance.....	145
Documentation.....	145
Obsolescence.....	145
LDAP-UX Integration.....	145
Summary of Change.....	146
Impact.....	146
Compatibility.....	146
Performance.....	147
Documentation.....	147
Obsolescence.....	147
Red Hat Directory Server for HP-UX.....	147
Summary of Change.....	147
Impact.....	147
Compatibility.....	147
Performance.....	147
Documentation.....	147
Obsolescence.....	148
Web Browsers.....	148
Summary of Change.....	148
Impact.....	148
Compatibility.....	148
Performance.....	148
Documentation.....	149
Obsolescence.....	149
Web Servers.....	149
HP-UX NSA (Network Server Accelerator) HTTP .....	149
Summary of Change.....	149
Impact.....	149
Compatibility.....	149
Performance.....	149
Documentation.....	149
Obsolescence.....	149
HP-UX Web Server Suite.....	149
Summary of Change.....	150
Impact.....	150
Compatibility.....	150
Performance.....	150
Documentation.....	150
Obsolescence.....	150
HP-UX Apache-based Web Server.....	150
Summary of Change.....	150
Impact.....	150
Compatibility.....	150

Performance.....	151
Documentation.....	151
Obsolescence.....	151
HP-UX Tomcat-based Servlet Engine.....	151
Summary of Change.....	151
Impact.....	151
Compatibility.....	151
Performance.....	151
Documentation.....	151
Obsolescence.....	151
HP-UX Webmin-based Admin.....	151
Summary of Change.....	151
Impact.....	151
Compatibility.....	151
Performance.....	151
Documentation.....	152
Obsolescence.....	152
HP-UX XML Web Server Tools.....	152
Summary of Change.....	152
Impact.....	152
Compatibility.....	152
Performance.....	152
Documentation.....	152
Obsolescence.....	152
<b>8 Security.....</b>	<b>153</b>
What is in This Chapter?.....	153
HP-UX Auditing and Security Attributes Configuration (secweb).....	154
Summary of Change.....	154
Impact.....	154
Compatibility.....	154
Performance.....	154
Documentation.....	154
Obsolescence.....	154
HP-UX Bastille and Install-Time Security.....	155
Summary of Change.....	155
Impact.....	155
Compatibility.....	155
Performance.....	155
Documentation.....	155
Obsolescence.....	156
HP-UX Host Intrusion Detection System.....	156
Summary of Change.....	156
Impact.....	156
Compatibility.....	156
Performance.....	157
Documentation.....	157
Obsolescence.....	157
HP-UX IPFilter.....	157
Summary of Change.....	157
Impact.....	158
Compatibility.....	158
Performance.....	158
Documentation.....	158



Obsolescence.....	159
HP-UX Secure Shell.....	159
Summary of Change.....	159
Impact.....	159
Compatibility.....	159
Performance.....	159
Documentation.....	159
Obsolescence.....	159
HP-UX Software Assistant.....	159
Summary of Change.....	159
Impact.....	159
Compatibility.....	160
Performance.....	160
Documentation.....	160
Obsolescence.....	160
OpenSSL.....	160
Summary of Change.....	161
Impact.....	161
Compatibility.....	161
Performance.....	161
Documentation.....	161
Obsolescence.....	161
<b>9 Commands and System Calls.....</b>	<b>163</b>
What is in This Chapter?.....	163
ioscan Command.....	164
Summary of Change.....	164
Impact.....	164
Compatibility.....	164
Performance.....	164
Documentation.....	164
Obsolescence.....	164
<b>10 Libraries and Programming.....</b>	<b>165</b>
What is in This Chapter?.....	165
HP MPI.....	166
Summary of Change.....	166
Impact.....	166
Compatibility.....	166
Performance.....	166
Documentation.....	166
Obsolescence.....	166
Java JDK/JRE for HP-UX.....	166
Summary of Change.....	167
Impact.....	167
Compatibility.....	167
Performance.....	167
Documentation.....	167
Obsolescence.....	167
Perl.....	167
Summary of Change.....	167
Impact.....	167
Compatibility.....	167

Performance.....	167
Documentation.....	168
Obsolescence.....	168
<b>11 Internationalization.....</b>	<b>169</b>
What is in This Chapter?.....	169
<b>12 Other Functionality.....</b>	<b>171</b>
What is in This Chapter?.....	171

---

# List of Tables

2-1	HP-UX 11i Releases.....	31
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# 1 About This Document

## What is in This Chapter?

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

- “What is the Purpose of the HP-UX 11i Version 3 September 2007 Release Notes?” (page 22)
- “Where Should I Begin?” (page 23)
  - “What is in the Remaining Chapters?” (page 23)
- “Related Information” (page 25)
  - “Other Sources of Information about This Release” (page 26)
  - “Locating Release Notes for Previous Versions of HP-UX” (page 28)

# What is the Purpose of the HP-UX 11i Version 3 September 2007 Release Notes?

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

As with other HP-UX release notes, the *HP-UX 11i Version 3 September 2007 Release Notes* does not completely document all the features of this release. Instead, it contains high-level information and pointers to more detailed product-specific documentation. Where appropriate, it also notes changes in the support of products.

These release notes generally apply only to features that are delivered on the HP-UX 11i v3 Operating Environments (OE) media.

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

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

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

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

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



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

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## Where Should I Begin?

This book is organized in such a way that you need only read Chapter 3: “What is New at a Glance” (page 41) for a quick overview of what is new, has changed, and has been deprecated or obsoleted in the current and previous HP-UX 11i v3 releases.

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



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

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

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

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



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

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## What is in the Remaining Chapters?

The remaining chapters of these release notes are as follows:

- Chapter 2: “Introduction to HP-UX 11i Version 3” (page 29), provides an overview of the Operating Environments, along with information compatibility and compatibility issues.
- Chapter 3: “What is New at a Glance” (page 41), furnishes a quick overview of what is new, has changed, or has been deprecated or obsoleted in this release.
- Chapter 4: “Hardware-Specific Information” (page 73), presents information regarding supported systems, networking and mass storage cards and drivers, as well as other information that is hardware-specific.
- Chapter 5: “General System Administration” (page 93), includes information of particular interest to system administrators.
- Chapter 6: “Disk and File Management” (page 139), presents information regarding directory, file system, and disk management.
- Chapter 7: “Internet and Networking” (page 143), covers changes to networking functionality and Internet services.
- Chapter 8: “Security” (page 153), covers changes and enhancements to security services.
- Chapter 9: “Commands and System Calls” (page 163), includes information about new and changed commands and system calls.
- Chapter 10: “Libraries and Programming” (page 165), provides information of particular interest to programmers, including changes to compilers, editors, and libraries.

- Chapter 11: “Internationalization” (page 169), presents information about text fonts and converters relating to various international languages.
- Chapter 12: “Other Functionality” (page 171), includes additional applications or functionality in the Operating Environments.



## Related Information

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

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

## Other Sources of Information about This Release

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

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

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

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

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

Other sources of information include the following:

- HP Documentation Web Site  
HP provides a Web site where the latest HP-UX documentation and updates are available:  
<http://www.docs.hp.com/>
- HP-UX 11i v3 Instant Information Media  
The Instant Information media provides HP-UX documentation on DVD. With this DVD, you can view documentation supporting the release before you install the software. The Instant Information DVD provides improved online presentation, print quality, and search capabilities.
- Manual Pages  
For the HP-UX 11i v3 release, the manual pages (manpages) are available on the HP-UX Welcome Page of your system, on the Instant Information DVD under the title HP-UX Reference, through the use of the man command, and on the Web at  
[http://www.docs.hp.com/en/hpuxman\\_pages.html](http://www.docs.hp.com/en/hpuxman_pages.html)
- README Documents  
README (or *Read Before Installing*) documents are media booklets that contain information about the installation process that may not appear in the *HP-UX 11i Version 3 Installation and Update Guide*. Any product contained in the release may have a README document, so several README documents may be included. The README document specific to HP-UX 11i v3 is included with your media kit.
- White Papers on HP-UX  
You can locate a collection of white papers on various topics related to the HP-UX 11i v3 release at

[www.hp.com/go/hpux11iv3resources](http://www.hp.com/go/hpux11iv3resources)

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

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

## Locating Release Notes for Previous Versions of HP-UX

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

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

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## 2 Introduction to HP-UX 11i Version 3

### What is in This Chapter?

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

- “Welcome to HP-UX 11i Version 3” (page 30)
- “HP-UX 11i Release Names and Release Identifiers” (page 31)
- “New HP-UX 11i v3 Operating Environment Structure” (page 32)
  - “HP-UX 11i v3 Software Bundles ” (page 32)
- “HP-UX 11i v3 Operating Environments” (page 33)
  - “Overview” (page 33)
  - “HP-UX 11i v3 Foundation Operating Environment” (page 33)
  - “HP-UX 11i v3 Enterprise Operating Environment” (page 36)
  - “HP-UX 11i v3 Mission Critical Operating Environment” (page 36)
  - “HP-UX 11i v3 Technical Computing Operating Environment” (page 37)
- “Software Pack (Optional HP-UX 11i v2 Core Enhancements)” (page 37)
- “HP-UX 11i Compatibility for HP Integrity and HP 9000 Servers” (page 37)
- “Compatibility Issues or Exceptions in HP-UX 11i v3 September 2007” (page 39)

## Welcome to HP-UX 11i Version 3

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

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

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

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

## HP-UX 11i Release Names and Release Identifiers

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

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

Release Name	Release Identifier	Supported Processor Architecture
HP-UX 11i v1	B.11.11	PA-RISC
HP-UX 11i v1.5	B.11.20	Intel® Itanium®
HP-UX 11i v1.6	B.11.22	Intel® Itanium®
HP-UX 11i v2	B.11.23	Intel® Itanium® PA-RISC <sup>1</sup>
HP-UX 11i v3	B.11.31	Intel® Itanium® PA-RISC

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

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

```
# swlist | grep HPUX11i
```

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

```
HPUX11i-OE B.11.31.0709 HP-UX Foundation Operating Environment
```

The above revision string signifies the following:

B.11.31 = HP-UX 11i v3

0709 = September 2007 Update Release

## New HP-UX 11i v3 Operating Environment Structure

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

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

## HP-UX 11i v3 Software Bundles

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

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

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

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



# HP-UX 11i v3 Operating Environments

## Overview

Operating Environments (OEs) are tested and integrated application bundles designed to work with the operating system and provide the functionality needed for your system's purpose. The following lists the currently available HP-UX 11i v3 OEs:

- **HP-UX 11i v3 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 for HP-UX, and Mozilla Application Suite. This OE is bundled as HPUX11i-OE. For more details, see “HP-UX 11i v3 Foundation Operating Environment” (page 33).
- **HP-UX 11i v3 Enterprise OE (EOE)** — Designed for database application servers and logic servers, this OE contains the HP-UX 11i v3 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 v3 Enterprise Operating Environment” (page 36).
- **HP-UX 11i v3 Mission Critical OE (MCOE)** — Designed for the large, powerful back-end application servers and database servers that access customer files and handle transaction processing, this OE contains the Enterprise OE bundles, plus applications such as HP Serviceguard and Workload Manager to enable a mission-critical server. This OE is bundled as HPUX11i-OE-MC. For more details, see “HP-UX 11i v3 Mission Critical Operating Environment” (page 36).
- **HP-UX 11i v3 Technical Computing OE (TCOE)** — This OE contains extensive graphics applications and Math Libraries. This OE is bundled as HPUX11i-TCOE. For more details, see “HP-UX 11i v3 Technical Computing Operating Environment” (page 37).

## HP-UX 11i v3 Foundation Operating Environment

The HP-UX 11i v3 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 v3 Foundation OE includes the Base 64-bit HP-UX operating system, plus the following features.

For a description of the bundles that are in the Base OS, see the *HP-UX 11i Version 3 Installation and Update Guide*, available at <http://docs.hp.com/en/oshpux11iv3.html>.

For an overview of the features that are new or have changed in this release, see “What is New at a Glance” (page 41).

### Required Features<sup>1</sup>

- CommonIO
- Disks and File Systems ( fsweb)
- Event Monitoring Service
- Feature Enablement Patch Bundle (Feature11i)
- GigEther-00
- GigEther-01
- Hardware Enablement Patch Bundle (HWEnable11i)
- HP Instant Capacity (iCAP, formerly iCOD)
- HP Instant Support Enterprise Edition
- HP WBEM Services for HP-UX
- HP-UX Accounts for Users and Groups
- HP-UX Kernel Configuration
- HP-UX Peripheral Device Tool
- HP-UX Security Attributes Configuration

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

- iEther
- Judy Libraries
- Logical Volume Manager (LVM)
- Network Interfaces & Network Services Configuration (Ncweb)
- nPartition Commands
- nPartition Provider
- Obsolescence Bundle (for Updates only)
- ONC+ (NFS/AutoFS/CacheFS/NIS/RPC)
- Online Diagnostics
- OpenSSL
- Printer Management Tool
- Quality Pack Patch Bundle
- scsiU320-00
- Sendmail
- SerialSCSI-00
- SWGETTOOLS
- SwMgmtMin (contains Software Distributor)
- SysMgmtBASE
- SysMgmtMin
- System Fault Management
- Update-UX
- USB-00

### **Recommended Features**

- Base-VXVM 4.1
- Base-VXFS 4.1
- BIND
- Distributed Systems Administration Utilities
- Dynamic nPartitions
- Dynamic Root Disk
- FibrChan1-00
- FibrChan1-01
- Firefox/Firefox Source
- GTK/GTK Source
- GTK+ Libraries
- HP CIFS Client
- HP CIFS Server
- HP Integrity VM Support Library (VMGuestLib)
- HP-UX Bastille
- HP-UX IPFilter
- HP-UX Java Runtime Environment (JRE) 5.0 (1.5)
- HP-UX Java Development Kit (JDK) for the Java™ 2 Platform Standard Edition (J2SE) 5.0 (1.5)
- HP-UX Software Development Kit and Runtime Environment for the Java 2 Platform Standard Edition v1.4
- 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)
- Java for HP-UX Add-On C++ Libraries for SDK/JDK and RTE/JRE 1.4 and 5.0

- Java Runtime Plug-in (JPI) for HP-UX 1.4
- LDAP-UX
- Mozilla Application Suite
- Mozilla Source
- PAM Kerberos
- Partition Manager
- Perl
- PRMKernelSW (Not in TCOE)
- PRMLibraries (Not in TCOE)
- ProviderDefault Bundle
  - HP Application Discovery Agent
  - HP Global Workload Manager (Trial-Agent)
  - HP Integrity Virtual Machines Provider (VM Provider)
  - HP-UX WBEM Fibre Channel Provider
  - HP-UX WBEM File System Provider
  - HP-UX WBEM IOTree Indication Provider
  - HP-UX WBEM KC Providers
  - HP-UX WBEM LAN Provider for Ethernet Interfaces (WBEMP-LAN-00)
  - HP-UX WBEM Online Operations Service Provider (OLOS)
  - HP-UX WBEM RAIDSA Provider
  - HP-UX WBEM SAS Provider
  - HP-UX WBEM SCSI Provider
  - Utilization Provider
  - vPar Provider
- RAID-01
- Sec00 Security Tools
- Software Assistant
- SysMgmtWeb (contains HP System Management Homepage)
- TFTP
- Thunderbird/Thunderbird Source

### **Optional Features**

- 10GigEther-00
- Common Desktop Environment (all languages)
- HP Pay per use
- HP Systems Insight Manager
- HP-UX Host Intrusion Detection System (HIDS) (not in TCOE)
- HP-UX IPSec
- HP-UX Mobile IPv4
- HP-UX NSA (Network Server Accelerator) HTTP
- HyprFabrc-00
- Ignite-UX
- Infiniband HA/Core
- Mobile IPv6
- Multimedia Streaming Protocols
- Netscape Directory Server
- PCIMUX-00
- Java Out-of-Box

- Security Level 10
- Security Level 20
- Security Level 30
- Software Package Builder
- TermIO-00

## HP-UX 11i v3 Enterprise Operating Environment

The HP-UX 11i v3 Enterprise Operating Environment is targeted especially for database application servers and logic servers. In addition to the features found in the HP-UX 11i v3 Foundation OE (described on (page 33)), the Enterprise OE includes the following additional features.

For an overview of the features that are new or have changed in this release, see “What is New at a Glance” (page 41).

### Required Features<sup>2</sup>

- See the list of **required features** in “HP-UX 11i v3 Foundation Operating Environment” (page 33)

### Recommended Features

- High Availability Monitors
- MirrorDisk/UX
- GlancePlus Pak
- HP OnlineJFS 4.1 (B3929EA)
- HP Process Resource Manager
- Plus the list of **recommended features** in “HP-UX 11i v3 Foundation Operating Environment” (page 33)

### Optional Features

- See the list of **optional features** in “HP-UX 11i v3 Foundation Operating Environment” (page 33)

## HP-UX 11i v3 Mission Critical Operating Environment

The HP-UX 11i v3 Mission Critical Operating Environment is a high-availability Operating Environment for HP servers. In addition to the features found in the Foundation and Enterprise OEs, the Mission Critical OE includes the following features.

For an overview of the features that are new or have changed in this release, see “What is New at a Glance” (page 41).

### Required Features<sup>3</sup>

- See the list of **required features** in “HP-UX 11i v3 Foundation Operating Environment” (page 33)

### Recommended Features

- Enterprise Cluster Master Toolkit
- HP Serviceguard
- HP Serviceguard NFS Toolkit
- HP-UX Workload Manager
- HP-UX Workload Manager Toolkits
- Plus the list of **recommended features** in “HP-UX 11i v3 Enterprise Operating Environment” (page 36)
- Plus the list of **recommended features** in “HP-UX 11i v3 Foundation Operating Environment” (page 33)

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

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

### Optional Features

- See the list of **optional features** in “HP-UX 11i v3 Foundation Operating Environment” (page 33)

## HP-UX 11i v3 Technical Computing Operating Environment

The Technical Computing Operating Environment contains all the base functionality that is common to the other three OEs, including the base 64-bit HP-UX operating system, network drivers, and other always-installed functionality. The Technical Computing OE for HP-UX 11i v3 is available only for technical servers.

The HP-UX 11i v3 Technical Computing OE includes the following features.

For an overview of the features that are new or have changed in this release, see “What is New at a Glance” (page 41).

### Required Features<sup>4</sup>

- See the list of **required features** in “HP-UX 11i v3 Foundation Operating Environment” (page 33)

### Recommended Features

- HP 3D Technology for the Java 2 Standard Edition Platform (Itanium®-based systems only)
- HP MLIB
- HP MPI
- Technical System Configuration
- Plus the list of **recommended features** in “HP-UX 11i v3 Foundation Operating Environment” (page 33)

### Optional Features

- See the list of **optional features** in “HP-UX 11i v3 Foundation Operating Environment” (page 33)

## Software Pack (Optional HP-UX 11i v2 Core Enhancements)

There is no Software Pack content delivered on media in the HP-UX 11i v3 September 2007 release. However, there are a couple of core enhancements that have been delivered on the HP Software Depot at <http://hp.com/go/softwaredepot>:

The AccessControl core enhancement can be downloaded from HP Software Depot as follows:

1. Go to <http://hp.com/go/softwaredepot>
2. Search for “AccessControl”
3. Click on **HP-UX Role-Based Access Control (RBAC)**
4. Read the product description and download the product at no charge

The AtomicAPI core enhancement can be downloaded from HP Software Depot as follows:

1. Go to <http://hp.com/go/softwaredepot>
2. Search for “Atomic”
3. Click on **HP-UX Atomic APIs**
4. Read the product description and download the product at no charge

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

### Introduction

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

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

provides the most comprehensive investment protection in the industry. (For a definition of levels of compatibility, see “Definition of Terms and Levels of Compatibility” (page 39))

## Compatibility across Operating System Releases and Hardware Platforms

For “Well-behaved” user space applications Hewlett-Packard (For a definition of “Well-behaved” and other terms, see “Definition of Terms and Levels of Compatibility” (page 39)):

Maintains forward data, source, build environment, and binary compatibility across all hardware platforms of the same architecture family (e.g., Integrity or HP 9000) which are supported by the same version of HP-UX;

Provides forward data, source, build environment, and binary compatibility across HP-UX versions on HP 9000 servers and Integrity servers on their respective architectures. This is true for 32bit or 64bit applications on either architecture family;

Delivers new features and improved performance with each new HP-UX release. Binary compatibility across Operating System versions applies to legacy features (features that were present in the earlier release) and often still holds true for new features. There are some instances, however, where applications may be required to recompile in order to use or leverage a new feature. See the release notes for each version of HP-UX for information on new features that may require changes to applications.

## Compatibility within HP-UX 11i Virtualization Solutions

“Well-behaved” applications built on HP-UX 11i are binary compatible to run within HP-UX Virtual Partitions (vPars) on the same architecture family. No changes, recompilation or re-certification is necessary.

“Well-behaved” applications built on HP-UX 11i Integrity are binary compatible to run within an HP Integrity Virtual Machine. This binary compatibility applies to applications with no specific device dependencies and to applications that depend only on devices currently virtualized by Integrity VM. Most applications do not have specific device dependencies. However, if your application has specific device dependencies, please refer to the *HP Integrity Virtual Machines QuickSpecs* at [http://h18004.www1.hp.com/products/quickspecs/12715\\_div/12715\\_div.HTML](http://h18004.www1.hp.com/products/quickspecs/12715_div/12715_div.HTML) for details.

## Compatibility between Architecture Families

In addition to the compatibility provided within an architecture family, HP-UX 11i on HP 9000 servers is data, source, and build environment compatible with HP-UX 11i on Integrity servers. Build environments and source files can be moved from HP 9000 servers to Integrity servers and be rebuilt without modification.

Application binaries that were built on HP-UX on HP 9000 servers are binary compatible, with some limitations, with HP-UX on HP Integrity servers when running through the Aries Dynamic Code Translator. The use of Aries can be completely transparent. For more information about Aries, see <http://www.hp.com/go/aries>.

## Support

HP is committed to providing investment protection via compatibility as outlined above. Any owner of application code that meets the criteria for compatibility, who has encountered a compatibility failure as defined by this document, should contact HP through a special support line (for North America) at 1-800-249-3294 and use option 2. Help is also available alternatively by sending an e-mail to [dspp.dev@hp.com](mailto:dspp.dev@hp.com). Please identify the problem as a “compatibility failure.”

## Definition of Terms and Levels of Compatibility

There are multiple types of compatibility that need to be defined.

- Forward Compatibility means that there is compatibility between a version and a later version. It does not mean or include compatibility going from the later version to the previous version. All references to compatibility in this document are for forward compatibility only.
- Build environment compatibility means that application build environments (makefiles, script files, etc.) can be moved and used unchanged from the original system to the target system.
- Source compatibility refers to the ability to compile the same application code source file on an original system and a compatible system with different versions of the HP compiler.
- Binary compatibility refers to the ability to compile an application on a specific solution (architecture, hardware platform, Operating system version) to produce a binary file. That binary file, without modification, can be run on the solution where it was created and it can be on a target solution which is binary compatible.
- Data compatibility means that the data format on the different targets is the same.
- “Well-behaved” User Space Applications: HP-UX provides compatibility for applications that are user space (as opposed to kernel intrusive) applications that are “well behaved.” A “well behaved” user space application is an application that adheres to the following characteristics:
  - Uses only documented public application programming interfaces (APIs) (Documented interfaces are those found in the system manual [man] pages or at <http://docs.hp.com>)
  - Is not a kernel intrusive application
  - Adheres to standard development practices (for example: a shared library cannot be dependent on an archive library, etc.)
  - Does not use features that are specifically documented as having platform architecture or configuration limitations
  - Has no software dependencies on specific types of hardware (e.g., specific mass storage devices or specific I/O or networking adapters)
  - Does not decompose an HP-UX product and then reuse the results of the decomposition. (For example: extracting and using a module from a system library, or copying a system library or command from one release to another, etc.)

### For More Information

See the following Web sites:

- <http://www.hp.com/go/hpux11i>
- <http://www.hp.com/go/integrity>

## Compatibility Issues or Exceptions in HP-UX 11i v3 September 2007

Compatibility issues or exceptions have been noted for the following products or features in HP-UX 11i v3 September 2007. For details, see the indicated pages.

### **Chapter 5 “General System Administration”**

- “Online Diagnostics” (page 101)
- “System Fault Management” (page 103)
- “HP Serviceguard” (page 104)
- “Software Package Builder” (page 108)
- “HP Application Discovery” (page 115)
- “HP Global Workload Manager” (page 116)
- “HP Integrity Virtual Machines Provider (VM Provider)” (page 120)
- “HP Integrity Virtual Machines (VMGuestLib)” (page 120)

- “HP Systems Insight Manager ” (page 123)
- “Disks and File Systems (fsweb)” (page 127)
- “HP-UX Accounts for Users and Groups (ugweb) ” (page 129)

### **Chapter 7 “Internet and Networking”**

- “Web Browsers” (page 148)

### **Chapter 8 “Security”**

- “HP-UX Bastille and Install-Time Security” (page 155)
- “HP-UX Host Intrusion Detection System” (page 156)
- “HP-UX IPFilter” (page 157)

### **Chapter 10 “Libraries and Programming”**

- “Perl” (page 167)



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## 3 What is New at a Glance

### What is in This Chapter?

This chapter provides a quick overview of what is new, has changed, and has been deprecated or obsoleted in each HP-UX 11i v3 release. For further details, see the cross-referenced pages in the remainder of this book or, as noted, in previous editions.

- “What is New in the HP-UX 11i v3 September 2007 Release?” (page 42)
- “What is New in the Initial (February 2007) HP-UX 11i v3 Release?” (page 48)

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

In the following summaries, you can obtain a general picture of how the September 2007 release of HP-UX 11i v3 differs from the initial (February 2007) release of HP-UX 11i v3.

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

## Chapter 2 (page 29)

- Software Pack (SPK): No SPK content delivered on media in the HP-UX 11i v3 September 2007 release. However, a couple of core enhancements, AccessControl and AtomicAPI, have been delivered on the HP Software Depot at <http://hp.com/go/softwaredepot>. See “Software Pack (Optional HP-UX 11i v2 Core Enhancements)” (page 37).

## Chapter 4 (page 73)

- **New:** Hardware Enablement Patch Bundle for HP-UX 11i v3 (HWEenable11i): Provides patches required for new systems and the latest Intel® Itanium® 2 processors, and for add-on hardware supported on HP-UX 11i v3, including I/O adapters and devices. See “Hardware Enablement Bundle for HP-UX 11i v3” (page 74).
- **New:** HP Instant Support Enterprise Edition: Updated to version A.03.95.510.42.07 to incorporate defect fixes. See “HP Instant Support Enterprise Edition” (page 75).
- Mass Storage Stack: New options to manage multi-pathed disks and disk arrays. See “Mass Storage Stack” (page 76).
- I/O Subsystem: More networking & I/O drivers are DLKM-enabled, which means they can be dynamically loaded and unloaded from the HP-UX kernel without manually rebuilding the kernel or rebooting the system. See “I/O Subsystem” (page 77).
- For networking & mass storage drivers, see “Networking and Mass Storage Drivers”.
  - For required networking drivers, see “Required Networking Drivers”.
    - 10GigEthr-00: Updated to support UDP traffic over the destination port-based multi-queues and to display vital product data (vpd) by using the nwmgr command. DLKM-enabled. See “10GigEthr-00 10 Gigabit Ethernet Bundle (ixgbe)” (page 79).
    - GigEther-00: DLKM-enabled and defect fixes. See “GigEther-00 Gigabit Ethernet Driver Bundle (gelan)” (page 79).
    - GigEther01: DLKM-enabled. See “GigEther-01 Gigabit Ethernet Driver Bundle (igelan)” (page 80).
    - IEther-00 and Gigabit Ethernet: AD337A and AD338A PCI-Express is now supported; iether is DLKM-enabled. See “IEther-00 Gigabit Ethernet Networking Driver (iether)” (page 81).
    - 100BT (btlan): DLKM-enabled. See “100BT (btlan) 100BASE-T Ethernet Driver ” (page 82).
    - Ultra160 SCSI (c8xx): Driver is DLKM-enabled, but not all modules in patch are DLKM compliant. See “HP PCI Ultra160 SCSI Driver” (page 82)
  - For optional networking drivers, see “Optional Networking Drivers”.
    - InfiniBand Clustering System: Supports additional PCIe cards; DLKM-enabled. See “IB4X-00 InfiniBand Clustering System” (page 83).
  - For Required Mass Storage Drivers, see “Required Mass Storage Drivers”.
    - CommonIO bundle: Support for additional FC HBAs; delivers SAS-COMMON, which contains utilities for managing specific SAS HBAs; delivers FC-COMMON, which contains utilities for managing specific FC HBAs. See “CommonIO Bundle” (page 84).
    - FibrChan1-00: DLKM-enabled. See “FibrChan1-00 Fibre Channel Mass Storage Driver for HP-UX 11i v3 ” (page 85).
    - FibrChan1-01: DLKM-enabled. Defect fixes. See “FibrChan1-01 Fibre Channel Mass Storage Driver ” (page 85).

- RAID-01: DLKM-enabled. See “RAID-01” (page 86).
  - scsiU320-00: DLKM-enabled. See “scsiU320-00 Bundle” (page 86).
  - SerialSCSI-00: DLKM-enabled. See “SerialSCSI-00 Bundle” (page 87).
  - USB-00: Updated to version C.01.05.02 to incorporate defect fixes. See “USB-00” (page 88).
- For a list of supported servers, see “Supported Systems”.
  - For information on HBA firmware, see “Finding Firmware Information”.
  - For information on which I/O cards are supported, see “Supported and Unsupported HP-UX I/O Cards”.
  - For information on the Utility Pricing Solutions, see “Utility Pricing Solutions” (page 89).
    - iCAP (Instant Capacity): GiCAP disaster recovery, changes to TiCAP transfer and consumption; changes to `icapstatus` output; defect fixes. See “HP Instant Capacity” (page 90).

## Chapter 5 (page 93)

- **New:** Feature Enablement Patch Bundle (`Feature11i`): Contains required patches for new or updated software products. See “Feature Enablement Patch Bundle (`Feature11i`)” (page 95).
- **New:** Quality Pack Patch Bundles: Stable, defect-fix patch bundles for the OS and applications. This first release will deliver the Base Quality Pack bundle only. The Applications Quality Pack bundle will be delivered in later releases as patches qualify. See “Quality Pack Patch Bundles” (page 95).
- **New:** Dynamic Root Disk (DRD): An HP-UX system administration toolset used to clone an HP-UX system image to an inactive disk for software maintenance and recovery. System administrators use DRD to manage system images on HP PA-RISC and Itanium®-based systems. See “Dynamic Root Disk (DRD)” (page 96).
- Enterprise Cluster Master Toolkit: Updated to version B.04.01; support for HP-UX Apache on HP-UX Tomcat for CVM/CFS 5.0; support for HP CIFS/900 on CVM/CFS 5.0; support for CVM/CFS 5.0; enhanced Oracle toolkit; support for Serviceguard A.11.18. See “Enterprise Cluster Master Toolkit” (page 97).
- Event Monitoring Services: Updated to incorporate defect fixes. See “Event Monitoring Services” (page 98).
- High Availability Monitors: Updated to incorporate defect fixes. See “High Availability Monitors” (page 98).
- HP OpenView GlancePlus Pak: Support for HPVM 2.0; configurable logging intervals and flush intervals; `gpm` renamed to `xg1ance`. See “HP OpenView GlancePlus Pak” (page 99).
- HP-UX IPQoS: HP-UX IPQoS for earlier HP-UX releases (HP-UX 11i v1 and v2) is incompatible with HP-UX 11i v3 and so is removed by `ObsIPQoS`. However, a new, HP-UX v3-compatible version of HP-UX IPQoS is now available on the Application Release (AR) media for September 2007, as well as on Software Depot at <http://hp.com/go/softwaredepot>.
- LVM and MirrorDisk/UX: Parallel re-sync; parallel opens; alternate link behavior; defect fixes. See “LVM (Logical Volume Manager) & MirrorDisk/UX” (page 100).
- EMS and STM: Supports Dynamic nPartitions, additional systems, and additional cards; monitors generates new events. See “Online Diagnostics” (page 101).
- System Fault Management: New WBEM providers; enhancements to the `SFMIndication` Provider; new Event Subscription Administration. See “System Fault Management” (page 103).
- HP Serviceguard: New package-creation process and enhanced support for package dependencies and multi-node packages; additional support for cluster parameters, APA and VLAN, HPVM, and more. See “HP Serviceguard” (page 104).
- HP Serviceguard Extension for RAC: Support for VxVM 4.1, Cluster Interconnect Monitoring, SGeRAC Toolkit, Veritas CVM/CFS 4.1, and Oracle 9i & 10g R2 RAC. See “HP Serviceguard Extension for RAC” (page 105).

- Ignite-UX: Supports new hardware for 11i v3, plus other changes. See “Ignite-UX” (page 106).
- Update-UX and SW-GETTOOLS: Updated to incorporate defect fixes. See “Update-UX and SW-GETTOOLS” (page 107).
- Software Utilities:
  - Software Distributor: Updated to incorporate defect fixes. See “Software Distributor” (page 108).
  - Software Package Builder: Updated to incorporate defect fixes. See “Software Package Builder” (page 108).
- HP Partitioning and VSE: See “HP Partitioning and Virtual Server Environment” (page 109).
  - **New:** Dynamic nPartitions: cell online activation. See “Dynamic nPartitions, cell online activation” (page 109).
  - **New:** Dynamic nPartitions: cell online de-activation. See “Dynamic nPartitions, cell online deactivation” (page 111).
  - nPartition Configuration Commands: New `parolrad` command for Dynamic nPartitions operations. See “HP-UX nPartition Configuration Commands” (page 112).
  - nPartition Provider: Interpretation of Dynamic nPartitions capability bit is changed. See “nPartition Provider” (page 113).
  - Partition Manager (`parmgr`): Support for Dynamic nPartitions. See “Partition Manager (`parmgr`)” (page 114).
  - Virtual Partitions (vPars): Support for PA systems running sx2000 chipset, pre-enablement for SCSI tape boot and recovery for Integrity systems. Purchased separately. See “HP-UX Virtual Partitions” (page 114).
  - **New:** HP Application Discovery: Application Discovery agent (`AppDiscAgent`) is default-installed on the OE media. The agent securely supplies data to Application Discovery server at intervals that can be set by a system administrator. See “HP Application Discovery” (page 115).
  - HP Global Workload Manager: Includes conditional policies related to Serviceguard events, usage of TiCAP resources based on policy level, support for Hyper-Threading, and further integration with other VSE products. See “HP Global Workload Manager” (page 116).
  - HP Process Resource Manager: Provides an interface within HP SIM (System Insight Manager). See “HP Process Resource Manager” (page 118).
  - PRMKernelSW (formerly known as PRM Libraries): Changes in fileset. See “PRMKernelSW” (page 119).
  - PRMLibraries: Changes in product and fileset encapsulation. Now contains the PRM API. See “PRMLibraries” (page 119).
  - HP Integrity Virtual Machines Provider (VM Provider): Supports the new features of VM A.03.00. See “HP Integrity Virtual Machines Provider (VM Provider)” (page 120).
  - HP Integrity Virtual Machines (VMGuestLib): Supports the new features of VM A.03.00. See “HP Integrity Virtual Machines (VMGuestLib)” (page 120).
- Utilization Provider: Updated to version A.01.06.02.xx to incorporate defect fixes. See “Utilization Provider” (page 121).
- System Management GUIs
  - HP System Management Homepage (SMH): Defect fixes. See “HP System Management Homepage” (page 122).
  - HP Systems Insight Manager (SIM): Supports VSE 3.0 products. See “HP Systems Insight Manager” (page 123).
  - Distributed Systems Administration Utilities (DSAU): Usability enhancements. See “Distributed Systems Administration Utilities (DSAU)” (page 125).
  - Network Interfaces Configuration and Network Services Configuration: Support for IPv6; support for specifying additional modules to be pushed amongst IPv6, IPv4, and

DLPI; more information for tunnels. See “Network Interfaces Configuration and Network Services Configuration (ncweb)” (page 126).

- Disks and File Systems: Support for Volume Group creation for Serviceguard clusters and automatic distribution of LVM changes to all cluster nodes. See “Disks and File Systems (fsweb)” (page 127).
- HP-UX Accounts for Users and Groups: Supports managing POSIX users and groups from LDAP database. See “HP-UX Accounts for Users and Groups (ugweb)” (page 129).
- HP-UX Kernel Configuration: Defect fixes. See “HP-UX Kernel Configuration (kcweb)” (page 130).
- HP-UX Peripheral Devices Manager: Defect fixes. See “HP-UX Peripheral Devices Manager (pdweb)” (page 131).
- **New:** Printer Management tool: A new Web-based printer management tool available on the HP System Management Homepage (HP SMH). See “Printer Management (Web-based)” (page 131).
- **WBEM:**
  - HP WBEM Services for HP-UX: Defect fixes. See “HP WBEM Services for HP-UX” (page 132).
  - HP-UX WBEM Fibre Channel Provider: Supports Consolidated Status Provider and Indication Provider features. See “HP-UX WBEM Fibre Channel Provider” (page 133).
  - **New:** HP-UX WBEM IOTree Indication Provider: Supports Indication Provider for hot-swappable PCI slots. See “HP-UX WBEM IOTree Indication Provider” (page 134).
  - **New:** The HP-UX KC Provider: Supports `kcmodule` provider and `kctunables` provider. Both work in the WBEM environment. See “HP-UX WBEM KC Providers” (page 135).
  - HP-UX WBEM LAN Provider for Ethernet Interfaces (WBEMP-LAN-00): New provider, LAN Consolidated Status Provider, delivered in this release. See “HP-UX WBEM LAN Provider for Ethernet Interfaces (WBEMP-LAN-00)” (page 135).
  - HP-UX WBEM Online Operations Service Provider (OLOS): Supports cell online activation and deactivation. See “HP-UX WBEM Online Operations Service Provider (OLOS)” (page 136).
  - **New:** HP-UX WBEM RAIDSA Provider: Used by client applications to determine information about Smart Array HBAs present on the system. See “HP-UX WBEM RAIDSA Provider” (page 137).
  - **New:** HP-UX WBEM SAS Provider: Used by client applications to determine information about SAS HBAs present on the system. With this component you can retrieve details about the various attributes of SAS HBAs. See “HP-UX WBEM SAS Provider” (page 137).
  - HP-UX WBEM SCSI Provider: Supports Consolidated Status Provider feature and defect fixes. See “HP-UX WBEM SCSI Provider” (page 138).

## **Chapter 6 (page 139)**

- HP CIFS Server: Updated to 3.0g version A.02.03.02 to incorporate defect fixes and enhancements. No longer maintains the LDAP management scripts, `smbldap-tools`. See “HP CIFS Server” (page 140).

## **Chapter 7 (page 143)**



- **New:** HP-UX Mobile IPv4: Provides mobility support for mobile devices to migrate from their home network to other networks, either within the same administrative domain or to other administrative domains on the Internet See “HP-UX Mobile IPv4” (page 144).
- “Internet Services” (page 144):
  - **New:** Multimedia Streaming Protocols: Enables you to stream audio and video files. Delivered on the OEs as an optional feature. See “Multimedia Streaming Protocols (MSP)” (page 145).
- LDAP-UX Integration: Updated to version B.04.15 with dynamic group support, PAM\_AUTHZ, TLS support, schema extension utility, and more. See “LDAP-UX Integration” (page 145).
- Red Hat Directory Server: Updated to version B.07.10.30 to incorporate defect fixes. See “Red Hat Directory Server for HP-UX” (page 147).
- “Web Browsers” (page 148):
  - **New:** Firefox and Firefox Source: Web browser sets a new standard for internet browsing by providing an easier and more personal way to use the Internet. See “Web Browsers” (page 148).
  - **New:** GTK and GTK Source: Open-source windowing toolkit used by Firefox and Thunderbird. See “Web Browsers” (page 148).
  - **New:** Thunderbird and Thunderbird Source: E-mail application provides convenient, customizable, rich-featured e-mail access. See “Web Browsers” (page 148).
- Web Servers:
  - **New:** HP-UX NSA HTTP: Updated to version B.11.31.01.02; enables NSA (Network Server Accelerator). See “HP-UX NSA (Network Server Accelerator) HTTP ” (page 149).
  - HP-UX Web Server Suite: Updated versions of products in the HP-UX Web Server Suite. See “HP-UX Web Server Suite” (page 149).
  - HP-UX Apache-based Web Server: Includes additional modules, including scripting, content management, and security. See “HP-UX Apache-based Web Server” (page 150).
  - HP-UX Tomcat-based Servlet Engine: Implements Java Servlet 2.4 and Java Server Pages 2.0 specifications. See “HP-UX Tomcat-based Servlet Engine” (page 151).
  - HP-UX Webmin-based Admin: Defect fixes. See “HP-UX Webmin-based Admin” (page 151).
  - HP-UX XML Web Server Tools: Upgraded to version 2.03; Xerces upgraded to version 2.8.0. See “HP-UX XML Web Server Tools” (page 152).

## Chapter 8 (page 153)

- HP-UX Auditing and Security Attributes Configuration: Supports new GUI as part of the security attributes tool in HP SMH (System Management Homepage). See “HP-UX Auditing and Security Attributes Configuration (secweb)” (page 154).
- HP-UX Bastille and Install Time Security: Now works with Software Assistant (SWA). See “HP-UX Bastille and Install-Time Security” (page 155).
- HP-UX Host Intrusion Detection System: Updated to version 4.1. Includes alert volume reduction feature, generation of customized and consolidated alert reports, and a tuning tool that reduces the time and effort to deploy and maintain Surveillance Schedules. See “HP-UX Host Intrusion Detection System” (page 156).
- HP-UX IPFilter: Changes in versioning. See “HP-UX IPFilter” (page 157).
- HP-UX Secure Shell: Updated to incorporate defect fixes. See “HP-UX Secure Shell” (page 159).
- **New:** HP-UX Software Assistant (SWA): includes Security Patch Check (SPC) and is the HP-recommended utility to use to maintain currency with HP-published security bulletins for HP-UX software. See “HP-UX Software Assistant” (page 159).
- OpenSSL: Updated to version A.00.09.08d.002. See “OpenSSL” (page 160).

### **Chapter 9 (page 163)**

- `ioscan` Command: The `-l` option of `ioscan` has been deprecated and will be obsoleted in a future HP-UX release. See “`ioscan` Command” (page 164)

### **Chapter 10 (page 165)**

- HP MPI: User's guide updated from the 10th edition to the 11th edition. See “HP MPI” (page 166).
- HP-UX Java Development Kit and HP-UX Java Runtime Environment for the Java® 2 Platform Standard Edition (JDK/JRE): Updated to versions Java 1.4.2.13 and Java 5.0.8 to incorporate defect fixes. See “Java JDK/JRE for HP-UX” (page 166).
- Perl: Updated to version 5.8.8 build 817.1 to incorporate defect fixes. See “Perl” (page 167).

### **Chapter 11 (page 169)**

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

### **Chapter 12 (page 171)**

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

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

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

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

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

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



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

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

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

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

In addition, you may want to review the list “What is New for Customers Migrating from HP-UX 11i v2 June 2006?” (page 60) for a general picture of how the initial (February 2007) release of HP-UX 11i v3 differs from the June 2006 release of HP-UX 11i v2.

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

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



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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

- **New:** HP-UX 11i Security Containment: Provides compartments, which isolate unrelated resources on a system to prevent catastrophic system damage if one compartment is penetrated. When configured in a compartment, an application (processes, binaries, data files and communication channels used) has restricted access to resources outside its compartment. Also provides fine-grained privileges, which allow you to grant privileges to processes needed for the task and, optionally, only for the time needed to complete the task.
- HP-UX Auditing System: Enhanced in several ways, including: auditing subsystem is now working without converting the system to trusted mode; standard mode audit user selection information is stored in a per-user configuration user database; `userdbset` command specifies which users are to be audited in standard mode; and several other enhancements.
- **New:** HP-UX Bastille: Although Bastille has been available on the Web (and on the HP-UX 11i v2 OEs) for some time, it is now available on the HP-UX 11i v3 OEs for the first time for customers migrating from HP-UX 11i v1 and includes several enhancements.
- HP-UX Host Intrusion Detection System: Updated to release 4.0 with features including reducing alert volume by aggregation; reducing alert volume by monitoring only critical files; configuring critical users; supporting specification of usernames and user IDs; and measuring the event rate.
- HP-UX IPFilter: Updated to version A.03.05.13 with defect fixes and enhancements including filtering on X.25 interfaces, filtering on 10GigE interfaces; IPFilter not plumbed into the networking stack by default; no reboot required to enable IPFilter.
- **New:** HP-UX IPsec: Previously only available on the AR media. Now delivered on the HP-UX 11i v3 Operating Environments. Provides an infrastructure to allow secure communications (authentication, integrity, confidentiality) over IP networks between systems and devices that implement the IPsec protocol suite.
- HP-UX Secure Shell: Updated to version A.04.40.005 with many new features including high performance enabled SSH/SCP patch; configuration directives in the server; auth selection

patch; increase in the default size of RSA and DSA keys; delayed compression; and many other features, as well as defect fixes.

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

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

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



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

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

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

- Bundled C Compiler: Updated to version A.06.12 on Itanium®-based servers and B.11.11.16 on PA-RISC. Highly compatible with previous versions; diagnostic messages have changed; more erroneous and suspicious source constructs are diagnosed.
- aC++ Run Time Library: Includes the `-AA-D_HP_NONSTD_FAST_Iostream` performance improvement macro, C++ Standard Library TC1 compliance change, and USA 2007 Daylight Savings Time legislation support.
- Dynamic Loader (`dld.so`): Since patch PHSS-32864, September 2005, `dld.so` has enabled large kernel page size, support for loading unaligned shared libraries and executables, and other changes.
- FirstBoot: As part of Transition links (a.k.a. Upgrade), HP used to create a symbolic link `/etc/set_parms -> /sbin/set_parms`. Transition links are obsoleted in HP-UX 11i v3 and `set_parms` is available to the user as `/sbin/set_parms`. So HP-UX 11i v3 will not support the symbolic link `/etc/set_parms`.
- HP MLIB: Updated to version 9.5 with the addition of two new libraries, VECLIBSC8 and LAPACKSC8, which are 64-bit address libraries with 64-bit integer values that use calling conventions similar to those found in Cray’s SCILIB math library.
- HP MPI: Updated to version 2.2 with several new features, including C++ bindings, new `mpirun` command line launch options, MPI-2 supported ROMIO, and other new features.
- HP-UX C Library (`libc`)
  - HP-UX C library (`libc`) - UNIX 2003 Standard Compliance: `libc` library enhanced to comply with UNIX 2003 standards. A number of APIs have been added, while some APIs have been modified.
  - HP-UX C library (`libc`) - Other Changes: New features include support for large PID, large `uname` and `hostname`, Tru64 API migration, `malloc(3C)` thread local cache enhancements, long `username` and `groupname`.
  - `libc.1` Library: Deprecated. Is a HP-UX 10.20 compatibility “C” library available in HP-UX 11i. No immediate impact in HP-UX 11i v3. When the `libc.1` library is obsoleted, all programs linking to this library will not work. Hence you are encouraged to start migrating your programs from `libc.1` to `libc.2` library.
  - Networking `libc` APIs: Networking APIs `getnameinfo` and `getaddrinfo` now look into the repositories specified with the `hosts` directive of the `/etc/nsswitch.conf` file, as well as those specified in the `inodes` directive, to resolve an IPv4 address. Includes additional changes.
- HP-UX Color-Curses: `libcur_color` Library and Commands: Obsolete. Were declared deprecated in HP-UX 10.30 and are not available in HP-UX 11i v3 PA-RISC.
- Java 2 Platform
  - Java JDK/JRE for HP-UX: HP-UX 11i v3 does not include Java 1.3 and Java 3D (J3D 1.4). SDK/RTE version 5.0 has been updated to incorporate defect fixes.
  - Java Out-of-Box: Updated to incorporate defect fixes.

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

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

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

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

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

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

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

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

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

In addition, you may want to review the list “What is New for Customers Migrating from HP-UX 11i v1 September 2005?” (page 48) for a general picture of how the initial (February 2007) release of HP-UX 11i v3 differs from the September 2005 release of HP-UX 11i v1.

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

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

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

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

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

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

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

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

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

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



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

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

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

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

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

- HP-UX 11i Security Containment: Fine-grained privileges and compartments are now part of the core.
- HP-UX Auditing System: Enhanced in several ways, including: Standard Mode Auditing now part of core products; multi-threaded kernel audit daemon is now dedicated in logging the data into configurable number of files for better performance; collected audit data are more comprehensive; and several other enhancements.
- HP-UX Bastille: With version 3.0.x, new enhancements, capabilities, features, and benefits (including `bastille_drift` analysis) represent additional items that Bastille will be able to lock down, additional usability improvements, and a new ability for Bastille to check a given system against a security baseline or report on the security-configuration state of a system.
- HP-UX IPFilter: Updated to version A.03.05.13 with defect fixes and enhancements including filtering on X.25 interfaces, filtering on 10GigE interfaces; IPFilter not plumbed into the networking stack by default; no reboot required to enable IPFilter.
- **New:** HP-UX IPsec: Previously only available on the AR media. Now delivered on the HP-UX 11i v3 Operating Environments. Provides an infrastructure to allow secure communications (authentication, integrity, confidentiality) over IP networks between systems and devices that implement the IPsec protocol suite.
- HP-UX Secure Shell: Updated to version A.04.40.005 with new features including an `sftp` only solution in a `chroot` environment; TCP wrappers support for IPv6; Standard Mode Security Extensions (SMSE) enhanced to provide the "Audit all users and events" feature; and other features, as well as defect fixes.
- HP-UX Security Attributes Configuration tool (`secweb`): Updated to support long user name.
- **New:** HP-UX Standard Mode Security Extensions: Now part of the core OS; provides a new command and new library functions. Shadow passwords are now also supported with NIS.
- Install-Time Security: Updated to version 1.0.4 with new questions/configuration, diagnostic daemon configure to local-only use (not network), and `syslog` local-only.
- Kerberos Client: Updated to version 1.3.5.03 with new features including support for powerful cryptographic algorithms like 3DES, RC4, and AES; support for IPv6; support for TCP; and defect fixes.
- OpenSSL: Updated to version A.00.09.08b.09.07j with support (in default version) for several hardware ENGINES (see section for specifics); support for elliptic curve cryptography; and EVP, the library of which provides a high-level interface to cryptographic functions. Other provided versions include other features.
- PAM Kerberos: Enhanced to issue a warning if `rc_host_0` is owned by anyone other than root when a user tries to rlogin into a system; will also issue a warning if the keytable entry is not found for the host service principal on the client but present at the KDC.
- Security Patch Check: Updated to incorporate defect fixes.

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

- `/etc/skel/.profile` shell script: `.` (current path) in `$PATH` is deprecated.
- 32-bit `pstat` System Call (Deprecated): When compiling a 32-bit application that uses the `pstat` system call, the compiler option `_D_PSTAT64` must now be specified. This causes

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

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

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

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

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

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

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

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

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

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

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



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

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# 4 Hardware-Specific Information

## What's in This Chapter?

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

- “Hardware Enablement Bundle for HP-UX 11i v3” (page 74)
- “HP Instant Support Enterprise Edition” (page 75)
- “Mass Storage Stack” (page 76)
- “I/O Subsystem” (page 77)
- “Networking and Mass Storage Drivers” (page 78)
  - “Required Networking Drivers” (page 79)
    - “10GigEthr-00 10 Gigabit Ethernet Bundle (ixgbe)” (page 79)
    - “GigEther-00 Gigabit Ethernet Driver Bundle (gelan)” (page 79)
    - “GigEther-01 Gigabit Ethernet Driver Bundle (igelan)” (page 80)
    - “IEther-00 Gigabit Ethernet Networking Driver (iether)” (page 81)
    - “100BT (btlan) 100BASE-T Ethernet Driver ” (page 82)
    - “HP PCI Ultra160 SCSI Driver” (page 82)
  - “Optional Networking Drivers” (page 83)
    - “IB4X-00 InfiniBand Clustering System” (page 83)
  - “Required Mass Storage Drivers” (page 84)
    - “CommonIO Bundle” (page 84)
    - “FibrChanl-00 Fibre Channel Mass Storage Driver for HP-UX 11i v3 ” (page 85)
    - “FibrChanl-01 Fibre Channel Mass Storage Driver ” (page 85)
    - “RAID-01” (page 86)
    - “scsiU320-00 Bundle” (page 86)
    - “SerialSCSI-00 Bundle” (page 87)
    - “USB-00” (page 88)
- “Supported Systems” (page 88)
- “Finding Firmware Information” (page 89)
- “Supported and Unsupported HP-UX I/O Cards” (page 89)
- “Utility Pricing Solutions” (page 89)
  - “HP Instant Capacity” (page 90)

# Hardware Enablement Bundle for HP-UX 11i v3

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

## Summary of Change

The `HWEenable11i` bundle includes new support for PCI-Express I/O adapters in HP Integrity Servers, and HP-UX support for HP servers with PA8900 processors and the `sx2000` chipset. Minimal HP-UX support requires other HWE components from this Operating Environment (OE) Update release that includes diagnostics, I/O driver bundles, along with the Ignite-UX product. HP recommends a full update to the desired OE option from the latest 11i v2 OE Update release for full HP-UX support with the updated versions of the manageability and configuration tools.

The `HWEenable11i` bundle includes patches for the following server models:

- HP Integrity BL860c blades with `zx2` chipset and C-class enclosure
- HP Integrity rx2660 server with PCIe IO backplane and `zx2` chipset
- HP Integrity rx3600 server with PCIe IO backplane and `zx2` chipset
- HP Integrity rx6600 server with PCIe IO backplane and `zx2` chipset
- HP Integrity rx7640 server (8 sockets) with PCIe IO and `sx2000` chipset
- HP Integrity rx8640 server (16 sockets) with PCIe IO and `sx2000` chipset
- HP Superdome server (16 sockets) with PA8900 processors and `sx2000` chipset
- HP Superdome server (32 sockets) with PA8900 processors and `sx2000` chipset
- HP Superdome server (64 sockets) with PA8900 processors and `sx2000` chipset
- HP rp7440 server (8 sockets) with PA8900 processors and `sx2000` chipset
- HP rp8440 server (16 sockets) with PA8900 processors and `sx2000` chipset

Also included are 11.31 patches with new support for latest Intel® Itanium® 2 processors:

- PHCO\_36254 - `uptime` enhanced with new option `-c` to display load average calculated on core basis. See `uptime(1)` manpage for more information.
- PHCO\_36489 - `machinfo` command now reports correct information for Dual-Core Intel® Itanium® 2 processors.
- PHKL\_36514 - Corrects demand based switching (DBS) state information for Dual-Core Intel® Itanium® 2 series processors.
- PHKL\_36534 - Manpage for `mca_recovery_on` tunable provides information on the new Machine Check Abort (MCA) Error Recovery subsystem for supported Intel® Itanium® 2 processors. The following patches enable the MCA Error Recovery functionality:
  - PHKL\_36387 - MCA recovery and DLKM stacktrace updates
  - PHKL\_36388 - TLB subsystem support for MCA recovery
  - PHKL\_36389 - Firmware interface support for MCA recovery
  - PHKL\_36390 - Error record decoding support for MCA recovery
  - PHKL\_36470 - EFI decoding support for MCA recovery
  - PHKL\_36534 - Manpage for `mca_recovery_on` tunable
  - PHKL\_36010 - Kernel debugger cumulative patch

## Impact

HP updates this patch bundle with required patches for new hardware. This bundle is delivered on each updated release of the HP-UX 11i v3 OE media. In addition to delivery on the HP-UX

11i v3 OE media, the HWEenable11i patch bundle is also available from the IT Resource Center (ITRC) Web site: <http://itrc.hp.com>

## Compatibility

There are no known compatibility issues.

## Performance

There are no known performance issues.

## Documentation

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

For further information, refer to the following Web sites:

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

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

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

## Obsolescence

Not applicable.

## HP Instant Support Enterprise Edition

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

## Summary of Change

ISEE has been updated to version A.03.95.510.42.07 to incorporate defect fixes.

## Impact

There is no impact.

## Compatibility

Before enabling or configuring Instant Support Enterprise Edition, verify that you have collected the necessary information and met all of the requirements outlined in Chapter One and Appendix A of the *HP Instant Support Enterprise Edition Client Installation and Upgrade Guide*, available at <http://www.hp.com/learn/isee>. Please note that HP Instant Support Enterprise Edition is only supported on servers, not HP-UX workstations.

### Enabling ISEE

ISEE is installed in a disabled state. To enable the client complete the following steps:

1. In the file `/etc/rc.config.d/hpservices.conf` change the value of `START_TUNER` from 0 to 1.
2. In the file `/etc/rc.config.d/rstemsListener` change the value of `RST_LISTENER` from 0 to 1.
3. Execute `/sbin/init.d/hpservices start`
4. Execute `/sbin/init.d/rstemsListener start`

### Configuring ISEE

The ISEE configuration process is documented in the section titled “Configuring ISEE after an Individual Installation” in the *HP Instant Support Enterprise Edition Client Installation and Upgrade Guide*. Additional information about ISEE and HP-UX servers can be found in Appendix A.

## Performance

There is no known performance improvement. Likewise, there is no known degradation in performance.

## Documentation

Information about ISEE, including the *HP Instant Support Enterprise Edition Client Installation and Upgrade Guide*, is available at <http://www.hp.com/learn/isee>.

For a complete list of ISEE-supported operating systems and hardware devices, please view the ISEE supported products Web page at [http://www.hp.com/hps/hardware/hw\\_products.html](http://www.hp.com/hps/hardware/hw_products.html).

## Obsolescence

Not applicable.

## Mass Storage Stack

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

## Summary of Change

- Integrated support for Asymmetrical Active/Active arrays that comply to SPC-3 standards. This includes a new device attribute `alua_enabled`, and a new `scsimgr` command `activate`.
- New load balancing policies for multi-pathed devices: `closest_path`, which selects an I/O path based on its affinity with the CPU issuing the I/O so as to minimize latency, and `pref_tport`, which preferentially selects an I/O path through a user-specified target port, useful when some target ports are optimized for I/O transfer to certain LUNs.
- Ability to specify the `preferred_path` device attribute using the class and instance number of a `lunpath`. This is used with the `preferred_path` load balancing policy.
- Increased maximum values for the `path_fail_secs` and `transient_secs` device attributes.

These changes are documented in the `scsimgr(1M)` and `scsimgr_esdisk(7)` manpages.

## Impact

This release offers new options to manage multi-pathed disks and disk arrays.

## Compatibility

There are no known compatibility issues.

## Performance

There are no known performance issues.

## Documentation

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

For details on new or modified commands, please check their associated man pages. In particular, the *scsimgr(1M)* and *scsimgr\_esdisk(7)* manpages cover the new load balancing policy and *scsimgr* commands.

## Obsolescence

There are no new obsolescence issues beyond those described for the February 2007 release of HP-UX 11i v3.

## I/O Subsystem

The I/O subsystem supports the next generation mass storage stack, including persistent device special files, as well as hardware paths for lunpaths and LUNs.

## Summary of Change

The Dynamically Loadable Kernel Module (DLKM) infrastructure and I/O subsystem have been enhanced. Now DLKM-enabled drivers that control networking and I/O adapters can be dynamically loaded to and unloaded from the HP-UX kernel without rebuilding the kernel or rebooting the system.

The following DLKM infrastructure patches (or superseding patches) will be installed to enable DLKM of drivers: PHKL\_36387, PHKL\_36332, and PHCO\_36371. These patches and other required patches are delivered in the FEATURE11i patch bundle on the September 2007 11i v3 OEUR media. A cold-install or an update to the September 2007 11i v3 OEUR will auto-select and install all required patches.

The HP-UX 11i v3 Application Software media for September 2007 will also include the FEATURE11i patches and I/O driver products that support DLKM of networking and I/O adapters. Selection of one or more I/O driver products will automatically select and install the required patches for the DKLM infrastructure.

To enable dynamic loading and unloading of a particular driver, you must also install the version of the driver that supports DLKM. For the following drivers, the version delivered with the September 2007 11i v3 OEUR supports DLKM:

- 10GigEthr-00 (ixgbe)
- FibrChanl-00 (td)
- FibrChanl-01 (fcd)
- GigEther-00 (gelan)
- GigEther-01 (igelan)
- IB4X-00 (ib\_t)
- IEther-00 (iether)
- OS-Core (btlan, c8xx)
- RAID-01 (ciss)
- scsiU320-00 (mpt)
- SerialSCSI-00 (sasd)

See the release notes for the individual drivers to confirm which version supports dynamic loading and unloading.

## Impact

The DLKM-enabled drivers that control networking and I/O adapters can be dynamically loaded to and unloaded from the HP-UX kernel without rebuilding the kernel or rebooting the system. This reduces system downtime to install driver updates or patches.



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**NOTE:** If you use `swremove` to remove a dynamically-loaded mass storage driver, the Critical Resource Analysis (CRA) may fail, causing SD to reboot the system unnecessarily. To avoid this CRA failure, install patch PHCO\_36356 (or a superseding patch) before running `swremove`.

If you remove any dynamically-loaded driver while it is in use, or if you remove a statically-loaded driver at any time, then a reboot will always be required. This is normal behavior under these conditions, and will not be affected by patch PHCO\_36356.

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**IMPORTANT:** If you have a system installed with the initial (February 2007) HP-UX 11i v3 release *and* you are not going to update to a subsequent OEUR, then you must install Software Distributor patch PHCO\_36530, or install the B.11.31.0709 (or later) revision of the Software Distributor product, prior to updating a driver for DLKM enablement. Software Distributor is available at <http://docs.hp.com/en/SD>

An updated or patched Software Distributor is needed for the required reboot on a system that had static drivers, after the installation of an I/O driver with DLKM functionality. A cold-install or an update (using `Update-UX`) to the September 2007 HP-UX 11i v3 OEUR will install the necessary version of the Software Distributor product for separate and later installations of I/O drivers with the DLKM functionality.

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## Compatibility

There are no known compatibility issues.

## Performance

There are no known performance issues.

## Documentation

For information on loading and unloading kernel modules, see Chapter 10 of the *HP-UX System Administrator's Guide: Configuration Management*, available at <http://docs.hp.com/en/oshpux11iv3.html>.

For specifics on a particular driver, see the driver's release notes or the installation guide for its I/O card.

## Obsolescence

Not applicable.

## Networking and Mass Storage Drivers

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

- “Required Networking Drivers” (page 79)
- “Optional Networking Drivers” (page 83)
- “Required Mass Storage Drivers” (page 84)



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

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## Required Networking Drivers

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

### 10GigEthr-00 10 Gigabit Ethernet Bundle (ixgbe)

The 10GigEthr-00 bundle supplies the ixgbe driver.

#### Summary of Change

HP-UX 11i v3 September 2007 updates the 10GigEther-00 bundle to:

- support UDP traffic over the destination port-based multi-queues
- display vital product data (vpd) by using the `nwmgr` command. The syntax is as follows:  
`nwmgr -g -q vpd -c lanPPA`
- support dynamic loading. A complete Dynamically Loadable Kernel Module (DLKM) Infrastructure is required to enable the DLKM feature of the driver. For complete information, see "I/O Subsystem" (page 77).

#### Impact

This driver has been enhanced to support dynamic loading.

The 10GigEther-00 bundle supports the AB287A 10 Gigabit Ethernet network card.

#### Compatibility

There are no known compatibility issues.

#### Performance

There are no known performance issues.

#### Documentation

For related 10 Gigabit Ethernet documents on the HP's Web site, please see <http://docs.hp.com>, look under **I/O Cards and Networking Software** and then under **10 Gigabit Ethernet**.

To see what has changed from one release to the next, see the 10GigEther-00 driver's release history. It is located on <http://docs.hp.com> under **I/O Cards and Networking Software** and then under **10 Gigabit Ethernet**.

For the online manual page, see: `nwmgr_ixgbe(1m)`.

#### Obsolescence

Not applicable.

### GigEther-00 Gigabit Ethernet Driver Bundle (gelan)

The GigEther-00 bundle supplies the gelan driver.

#### Summary of Change

In the September 2007 release of HP-UX 11i v3, this driver has been enhanced to support dynamic loading. A complete Dynamically Loadable Kernel Module (DLKM) Infrastructure is required



to enable the DLKM feature of the driver. For complete information, see “I/O Subsystem” (page 77).

#### Impact

This driver has been enhanced to support dynamic loading.

Defect fixes are not documented in this *HP-UX System Release Notes*. For this and all future releases of Gigabit Ethernet drivers, please consult the individual product release notes for details on what fixes have been made to the Gigabit Ethernet drivers.

#### Compatibility

There are no known compatibility issues.

#### Performance

There are no known performance issues.

#### Documentation

For related Gigabit Ethernet documents on the HP's Web site, please see <http://docs.hp.com>, look under **I/O Cards and Networking Software** and then under **Gigabit Ethernet**.

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

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

#### Obsolescence

Not applicable.

### GigEther-01 Gigabit Ethernet Driver Bundle (igelan)

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

#### Summary of Change

In the September 2007 release of HP-UX 11i v3, this driver has been enhanced to support dynamic loading. A complete Dynamically Loadable Kernel Module (DLKM) Infrastructure is required to enable the DLKM feature of the driver. For complete information, see “I/O Subsystem” (page 77).

#### Impact

This driver has been enhanced to support dynamic loading.

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

#### Compatibility

There are no known compatibility issues.

#### Performance

There are no known performance issues.



## Documentation

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

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

## Obsolescence

Not applicable.

## IEther-00 Gigabit Ethernet Networking Driver (iether)

The Gigabit Ethernet `IEther-00` bundle supplies the networking driver `iether`.

## Summary of Change

In this release, the `iether` driver is enhanced to support:

- AD337A and AD338A PCI-Express (PCIe) based gigabit network interface cards (NIC).
- Dynamic loading. A complete Dynamically Loadable Kernel Module (DLKM) Infrastructure is required to enable the DLKM feature of the driver. For complete information, see "I/O Subsystem" (page 77).
- A way to modify the asset tag in the Vital Product Data (VPD) using the HP-UX 11i v3 September 2007 driver version onwards. The asset tag in VPD can be modified by using the new options in the `lanadmin` and `nwmgr` commands.

Here is the syntax using the `lanadmin` command to modify the asset tag in the VPD:

```
lanadmin -X write_asset_tag value PPA
```

Here is the syntax with `nwmgr` command:

```
nwmgr -s -q asset_tag=value -c lanPPA
```

Refer to `nwmgr_iether(1m)` for more details.

## Impact

There are no known impacts other than those previously listed.

## Compatibility

There are no known compatibility issues.

## Performance

There are no known performance issues.

## Documentation

For related Gigabit Ethernet documents on the HP's Web site, please see <http://docs.hp.com>, look under **I/O Cards and Networking Software** and then under **Gigabit Ethernet**.

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

For the online manual page, see `nwmgr_iether(1m)`.

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

Obsolescence

Not applicable.

## 100BT (btlan) 100BASE-T Ethernet Driver

The 100BT (btlan) driver supports 100BASE-T Ethernet adapters. The supported cards are:

- A5506B PCI 10/100Base-TX 4 Port
- A5230A PCI 10/100Base-TX Add-on

### Summary of Change

In the September 2007 release of HP-UX 11i v3, this driver has been enhanced to support dynamic loading. A complete Dynamically Loadable Kernel Module (DLKM) Infrastructure is required to enable the DLKM feature of the driver. For complete information, see “I/O Subsystem” (page 77).

### Impact

- This driver has been enhanced to support dynamic loading.
- Installing the driver version (PHNE\_36373), which enables dynamic loading, always requires a system reboot.

### Compatibility

There are no known compatibility issues.

### Performance

There are no known performance issues.

### Documentation

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

Obsolescence

Not applicable.

## HP PCI Ultra160 SCSI Driver

The HP PCI Ultra160 SCSI driver manages the A6828A and A6829A Peripheral Component Interconnect (PCI) single and dual port Host Bus Adapters (HBAs).

### Summary of Change

In the September 2007 release of HP-UX 11i v3, this driver has been enhanced to support dynamic loading. A complete Dynamically Loadable Kernel Module (DLKM) Infrastructure is required to enable the DLKM feature of the driver. For complete information, see the “I/O Subsystem” (page 77).



---

**NOTE:** While the driver c8xx supports DLKM, some of the other components of PHKL\_36322 do not. The driver can be loaded or unloaded without a system reboot, but installing or removing any patches containing the c8xx driver will cause a reboot.

---

### Impact

All modules within 11.31 SCSI cumulative I/O patch (PHKL\_36322) are not DLKM (Dynamically Loadable Kernel Module) feature compliant. This patch also includes static modules. Therefore, any updates (made using either `swinstall` or `swremove` commands) to Ultra160 SCSI driver

in HP-UX 11i v3 September 2007 will cause a system reboot. This behavior remains the same as in prior releases.



---

**NOTE:** The c8xx driver module within PHKL\_36322 can be dynamically loaded to and unloaded from the HP-UX Kernel without either rebuilding the kernel or rebooting the system.

---

#### Compatibility

There are no known compatibility issues.

#### Performance

There are no known performance issues.

#### Documentation

Manpages: *scsictl*(1M)

Documentation for the Ultra160 SCSI driver is available at <http://docs.hp.com/en/netcom.html#SCSI%20Host%20Bus%20Adapters>

#### Obsolescence

From this release, the Ultra160 SCSI driver does not support Ultra2 cards.

## Optional Networking Drivers

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



---

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

---

## IB4X-00 InfiniBand Clustering System

IB4X-00 is the driver bundle for the InfiniBand Clustering System, which can be downloaded via <http://software.hp.com>.

#### Summary of Change

- Support for PCIe cards (AD313A and 410533-B21) has been added.
- In the September 2007 release of HP-UX 11i v3, this driver has been enhanced to support dynamic loading. A complete Dynamically Loadable Kernel Module (DLKM) Infrastructure is required to enable the DLKM feature of the driver. For complete information, see "I/O Subsystem" (page 77).

#### Impact

You will now be able to use AD313A and 410533-B21 with HP-UX 11i v3 systems.

This driver has been enhanced to support dynamic loading.

#### Compatibility

There are no known compatibility issues.

#### Performance

There are no known performance issues.

## Documentation

For detailed information, see the following:

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

All of the above documents can be found at <http://docs.hp.com> under **I/O and Networking Software** under **Fabric Clustering System for InfiniBand**.

## Obsolescence

Not applicable.

## Required Mass Storage Drivers

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



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

---

## CommonIO Bundle

The CommonIO bundle packages multiple products and is always installed.

### Summary of Change

The CommonIO bundle now delivers SAS - COMMON, which contains utilities to manage certain factory-integrated SAS HBAs; and FC - COMMON, which contains user-space SNIA common libraries which were previously delivered as part of the fileset  
FibrChan1 - 00 . FC - TACHYON - TL . FC - TL - RUN.

### Impact

There are no known impacts other than those previously listed.

### Compatibility

There are no known compatibility issues.

### Performance

There are no known performance issues.

## Documentation

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

## Obsolescence

Not applicable.

## FibrChanl-00 Fibre Channel Mass Storage Driver for HP-UX 11i v3

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

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

### Summary of Change

In the September 2007 release of HP-UX 11i v3, this driver has been enhanced to support dynamic loading. A complete Dynamically Loadable Kernel Module (DLKM) Infrastructure is required to enable the DLKM feature of the driver. For complete information, see “I/O Subsystem” (page 77).

### Impact

This driver has been enhanced to support dynamic loading.

### Compatibility

There are no known compatibility issues.

### Performance

There are no known performance issues.

### Documentation

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

### Obsolescence

Not applicable.

## FibrChanl-01 Fibre Channel Mass Storage Driver

FibrChanl-01 is the bundle which includes the fcd driver for Fibre Channel products.

### Summary of Change

In the September 2007 release of HP-UX 11i v3, this driver has been enhanced to support dynamic loading. A complete Dynamically Loadable Kernel Module (DLKM) Infrastructure is required to enable the DLKM feature of the driver. For complete information, see “I/O Subsystem” (page 77).

Bugs/defects from previous versions of the FibrChanl-01 fcd driver for HP-UX 11iv3 have been fixed. See the product documentation for relevant details.

### Impact

This driver has been enhanced to support dynamic loading.

### Compatibility

There are no known compatibility issues.

### Performance

There are no known performance issues.

## Documentation

On <http://docs.hp.com>, under "I/O Cards and Networking Software", under **Fibre Channel**, are the following documents:

- *FibrChanl-01 (fcd) Fibre Channel Mass Storage Driver for HP-UX 11i v3 Release Notes*
- *HP Fibre Channel Mass Storage Adapters Support Guide FibrChanl-01 (fcd) Driver*
- *HP-UX Fibre Channel Host Bus Adapter Support Matrix*

## Obsolescence

Not applicable.

## RAID-01

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

### Summary of Change

The RAID-01 bundle has been updated with quality improvements and support for Instance Provider.

In the September 2007 release of HP-UX 11i v3, this driver has been enhanced to support dynamic loading. A complete Dynamically Loadable Kernel Module (DLKM) Infrastructure is required to enable the DLKM feature of the driver. For complete information, see "I/O Subsystem" (page 77).

### Impact

There are no known impacts other than those previously listed.

### Compatibility

There are no known compatibility issues.

### Performance

There are no known performance issues.

## Documentation

For further information on specific changes in this release, see the *RAID-01 (ciss) B.11.31.0709 Mass Storage Driver Release Notes*. For further information on supported cards, see the *HP Smart Array RAID Controllers Support Matrix*.

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

## Obsolescence

Not applicable.

## scsiU320-00 Bundle

The `scsiU320-00` bundle delivers the driver `mpt` for the A7173A and AB290A controllers.

### Summary of Change

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

In the September 2007 release of HP-UX 11i v3, this driver has been enhanced to support dynamic loading. A complete Dynamically Loadable Kernel Module (DLKM) Infrastructure is required to enable the DLKM feature of the driver. For complete information, see "I/O Subsystem" (page 77).

## Impact

There are no known impacts other than those previously listed.

## Compatibility

There are no known compatibility issues.

## Performance

There are no known performance issues.

## Documentation

For further information on specific changes in this release, see the *HP scsiU320-00 (mpt) B.11.31.0709 Mass Storage Driver Release Notes*. For further information on supported cards, see the *HP Ultra320 SCSI Host Bus Adapter Support Matrix*.

These documents are available at <http://docs.hp.com/en/netcom.html> (navigate to **SCSI Host Bus Adapters**).

## Obsolescence

Not applicable.

## SerialSCSI-00 Bundle

The `SerialSCSI-00` bundle delivers the driver `sasd` for the factory-integrated internal SAS controller on certain servers. The `CommonIO` bundle is also required to support these controllers.

## Summary of Change

The `SerialSCSI-00` driver bundle has been updated with quality improvements, new HBA firmware, and support for Instance Provider.

In the September 2007 release of HP-UX 11i v3, this driver has been enhanced to support dynamic loading. A complete Dynamically Loadable Kernel Module (DLKM) Infrastructure is required to enable the DLKM feature of the driver. For complete information, see “I/O Subsystem” (page 77).

## Impact

There are no known impacts other than those previously listed.

## Compatibility

There are no known compatibility issues.

## Performance

There are no known performance issues.

## Documentation

For further information on specific changes in this release, see the *SerialSCSI-00 (sas) Mass Storage Driver Release Notes*. For further information on supported cards, see the *SAS Host Bus Adapters Support Matrix*.

These documents are available at <http://docs.hp.com/en/netcom.html> (navigate to **SAS Host Bus Adapters**).

## Obsolescence

Not applicable.



## USB-00

The USB-00 product (C.01.05.02) delivers the USB subsystem and device drivers.

### Summary of Change

This release of USB-00 contains defect fixes.

### Impact

The USB experience should be of higher quality – with less problems.

### Compatibility

This USB product will not be compatible with any application that accesses human interface devices (HID) through the legacy HID device special files in `/dev/hid`. Instead, applications should use the mouse and keyboard device special files provided in `/dev/deviceFileSystem` (`/dev/deviceFileSystem/keyboardMux` for keyboards attached to the USB and `/dev/deviceFileSystem/mouseMux` for mice attached to the USB).

### Performance

There are no known performance issues.

### Documentation

For further information about the USB product, see the USB READMEs in `/var/adm/sw/products`

### Obsolescence

The HP DVD writer 640e is no longer a supported device.

## Supported Systems

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

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



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

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

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

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



Additional hardware documentation can be found at the following website:

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

## Finding Firmware Information

Firmware changes frequently. Make sure your system has the latest firmware installed to support, for example, the latest versions of I/O adapters, mass storage devices, and devices used when you install from media or a network depot.

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

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

- Use the Business Support Center Web Site.

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

## Supported and Unsupported HP-UX I/O Cards

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

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

## Utility Pricing Solutions

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



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**NOTE:** PPU is unchanged for the September 2007 update release.

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## HP Instant Capacity

The HP Instant Capacity (iCAP) version B.11.31.08.02.00 software (product number B9073BA) provides the ability to instantly increase or decrease processing capacity on specified HP Enterprise servers.

### Summary of Change

iCAP has been updated to version B.11.31.08.02.00 to include the following new features and changes:

- GiCAP Disaster Recovery
- Cell online activate and deactivate
- improvements in GiCAP logging and asset reporting
- changes to TiCAP transfer and consumption
- changes to `icapstatus` command output
- incorporates several defect fixes

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

### Impact

GiCAP Disaster Recovery allows customers to transfer usage rights to other group members when a member is unavailable. All group members must run version iCAP 8.02 to use this new feature.

Not all Disaster Recovery features may have been implemented in the iCAP release included with the September 2007 HP-UX media. Please check the latest version of iCAP at the HP Software Depot for the availability of this feature.

### Compatibility

There are no known compatibility issues.

### Performance

There are no known performance issues.

### Documentation

For detailed information, see the following:

Manpages:

- `icap(5)`
- `icapmanage(1M)`
- `icapmodify(1M)`
- `icapstatus(1M)`
- `icapnotify(1M)`

Web Sites:

- HP Software Depot: <http://hp.com/go/softwaredepot>
- Technical Documentation: <http://docs.hp.com>

Documents:

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

Obsolescence

Not applicable.



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# 5 General System Administration

## What is in This Chapter?

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

- “Feature Enablement Patch Bundle (Feature11i)” (page 95)
- “Quality Pack Patch Bundles” (page 95)
- “Dynamic Root Disk (DRD)” (page 96)
- “Enterprise Cluster Master Toolkit” (page 97)
- “Event Monitoring Services” (page 98)
- “High Availability Monitors” (page 98)
- “HP OpenView GlancePlus Pak” (page 99)
- “LVM (Logical Volume Manager) & MirrorDisk/UX” (page 100)
- “Online Diagnostics” (page 101)
- “System Fault Management” (page 103)
- “HP Serviceguard” (page 104)
- “HP Serviceguard Extension for RAC” (page 105)
- “Ignite-UX” (page 106)
- “Update-UX and SW-GETTOOLS” (page 107)
- Software Utilities
  - “Software Distributor” (page 108)
  - “Software Package Builder” (page 108)
- “HP Partitioning and Virtual Server Environment” (page 109)
  - “Dynamic nPartitions, cell online activation” (page 109)
  - “Dynamic nPartitions, cell online deactivation” (page 111)
  - “HP-UX nPartition Configuration Commands” (page 112)
  - “nPartition Provider” (page 113)
  - “Partition Manager (parmgr)” (page 114)
  - “HP-UX Virtual Partitions” (page 114)
  - “HP Application Discovery” (page 115)
  - “HP Global Workload Manager” (page 116)
  - “HP Process Resource Manager” (page 118)
  - “PRMKernelSW” (page 119)
  - “PRMLibraries” (page 119)
  - “HP Integrity Virtual Machines Provider (VM Provider)” (page 120)
  - “HP Integrity Virtual Machines (VMGuestLib)” (page 120)
  - “Utilization Provider” (page 121)
- System Management GUIs
  - “HP System Management Homepage” (page 122)
  - “HP Systems Insight Manager ” (page 123)
  - “Distributed Systems Administration Utilities (DSA) ” (page 125)
  - “Network Interfaces Configuration and Network Services Configuration (ncweb)” (page 126)
  - “Disks and File Systems (fsweb)” (page 127)
  - “HP-UX Accounts for Users and Groups (ugweb) ” (page 129)
  - “HP-UX Kernel Configuration (kcweb)” (page 130)

- “HP-UX Peripheral Devices Manager (pdweb)” (page 131)
- “Printer Management (Web-based)” (page 131)
- WBEM:
  - “HP WBEM Services for HP-UX” (page 132)
  - “HP-UX WBEM Fibre Channel Provider” (page 133)
  - “HP-UX WBEM IOtree Indication Provider” (page 134)
  - “HP-UX WBEM KC Providers” (page 135)
  - “HP-UX WBEM LAN Provider for Ethernet Interfaces (WBEMP-LAN-00)” (page 135)
  - “HP-UX WBEM Online Operations Service Provider (OLOS)” (page 136)
  - “HP-UX WBEM RAIDSAs Provider” (page 137)
  - “HP-UX WBEM SAS Provider” (page 137)
  - “HP-UX WBEM SCSI Provider” (page 138)

## Feature Enablement Patch Bundle (Feature 11i)

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

### Summary of Change

For the September 2007 release, the FEATURE11i bundle is new for HP-UX 11i v3 (11.31) and there are patches to support COLAD, DLKM, vPars, MCA Recovery, HPVM, and KWDB core products.

### Impact

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

### Compatibility

There are no known compatibility issues.

### Performance

There are no known performance issues.

### Documentation

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

For further information, refer to the following Web sites:

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

Also refer to the latest editions of the following documents, available at <http://www.docs.hp.com/hpux/os/11iv3>:

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

### Obsolescence

Not applicable.

## Quality Pack Patch Bundles

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

### Summary of Change

This is the first Quality Pack release for HP-UX 11i v3 (B.11.31). A defect-patch is included in the Quality Pack only after it has obtained a certain number of customer downloads. Since most of the 11i v3 defect-fix patches are still relatively new, only a few patches have qualified for the Quality Pack at this point. This first release will deliver the Base Quality Pack bundle only. The Applications Quality Pack bundle will be delivered in later releases as patches qualify for this bundle.

## Impact

There are no known impacts other than those previously listed.

## Compatibility

There are no known compatibility issues.

## Performance

There are no known performance issues.

## Documentation

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

## Obsolescence

Not applicable.

## Dynamic Root Disk (DRD)

Dynamic Root Disk (DRD) is an HP-UX system administration toolset used to clone an HP-UX system image to an inactive disk for software maintenance and recovery. System administrators use DRD to manage system images on HP PA-RISC and Itanium®-based systems. DRD complements other parts of your total HP solution by reducing system downtime while installing and updating patches and other software.

Version A.2.0 of DRD is supported on systems running HP-UX 11i Version 3 with an LVM managed root volume. It provides the following functionality:

- Hot maintenance capability. The DRD tools can be used to create a clone of the running system, apply patches or install products to the clone, and boot the clone as the running system.
- Hot recovery capability. The DRD tools can be used to create a clone and boot it if the running system fails.
- Software Distributor (SD) command support. The DRD tools provide a mechanism for running SD commands, such as `swinstall`, `swremove`, `swverify`, `swmodify`, `swlist`, and `swjob`, on the clone.
- Clone accessibility. The clone can be mounted on the running system so that its files can be viewed or modified.
- Mirror compatibility. The DRD operation will not affect any mirror already created on the running system. DRD can be used to create a mirror of the clone during the cloning operation.
- Command line interface. The DRD tools are run from the command line.

## Summary of Change

This is the first release of DRD for HP-UX 11i v3. Until now, it has only been available on HP-UX 11i v2. In addition, since most HP-UX 11i v3 products are already DRD safe, products as well as patches can be installed using DRD.

## Impact

This will provide parity with HP-UX 11i v2 for this functionality. This provides more capability than on HP-UX 11i v2, since products as well as patches can be installed using DRD on HP-UX 11i v3.



## Compatibility

This is the first release of this product on HP-UX 11i v3, so there are no previous releases to be incompatible with. This release is compatible with the HP-UX 11i v2 release of DRD.

## Performance

There are no known performance issues.

## Documentation

Manpages are included in the product, which is packaged in the `DynRootDisk` bundle. The Web site <http://docs.hp.com/en/DRD/> includes an overview, white papers, Administrator's Guide, FAQ, and more.

## Obsolescence

Not applicable.

## Enterprise Cluster Master Toolkit

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

## Summary of Change

The following describes new and changed features for the Enterprise Cluster Master Toolkit Version B.04.01 on HP-UX 11i v3:

- Support for HP-UX Apache on HP-UX Tomcat for CVM/CFS 5.0
- Support for HP CIFS/9000 on CVM/CFS 5.0
- Support for CVM/CFS 5.0
- Enhance Oracle toolkit to support single listener monitoring with password protected listener
- Support for Serviceguard A 11.18 version on 11i v3

## Impact

There are no known impacts other than those previously listed.

## Compatibility

There are no known compatibility issues.

## Performance

There are no known performance issues.

## Documentation

For detailed information, see the following:

*Enterprise Cluster Master Toolkit Version B.04.00 Release Notes* available at <http://docs/hp.com/hpux/ha>.

## Obsolescence

Not applicable.

## Event Monitoring Services

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

### Summary of Change

EMS has been updated to incorporate defect fixes.

### Impact

There is no impact.

### Compatibility

There are no known compatibility issues.

### Performance

There are no known performance issues.

### Documentation

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

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

### Obsolescence

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

## High Availability Monitors

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

### Summary of Change

High Availability Monitors has been updated to incorporate defect fixes.

### Impact

There is no impact.

### Compatibility

There are no known compatibility issues.

### Performance

There are no known performance issues.

## Documentation

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

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

## Obsolescence

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

## HP OpenView GlancePlus Pak

GlancePlus Pak, version 4.62, integrates the HP OpenView GlancePlus and HP OpenView Performance Agent for HP-UX (OVPA) products into a single tool to help customers better manage the performance and availability of their servers. The 4.62 version of GlancePlus Pak will make OVPA C.4.60 available through the September 2007 release of HP-UX 11i Version 3. All the functionalities of OVPA C.04.62 is same as C.04.60. The version number of all the executables, libraries and documentation will remain as OVPA C.04.60.

## Summary of Change

This release includes the following enhancements:

For OVPA:

- Support for HP Virtual Machine 2.0
  - Ability to monitor HP Virtual Machine (HPVM) version 2.0 guests from the HPVM host system. A new class of metrics, BYLS, is introduced for the HPVM host, to record the configuration and resource utilization metrics for the Virtual Machines.
- Configurable Logging Intervals
  - Ability to configure the process interval between ranges of 5-60 seconds.
  - Ability to configure interval for other intervalized classes to 15, 30, 60, or 300 seconds.
  - Additional logging thresholds.
  - Logging thresholds for process data.
  - The `procthreshold` is equivalent to `threshold`, which was available with earlier releases.
  - Logging thresholds for additional data classes (such as, application and device data) are added:
    - application data, `apptreshold`.
    - disk data, `diskthreshold`.
    - netif data, `bynetifthreshold`.
    - file system data, `fsthreshold`.
    - cpu data, `bycputhreshold`.
    - logical volumes, `lvthreshold`.
- Flush Interval:

- Ability to request a data flush interval for application and device data classes.
- Ability to record/log ALL instances of application and device data periodically, including instances which are considered "uninteresting" based on the specified threshold criteria.
- For GlancePlus:
  - This release of GlancePlus has the following features:
    - Supported on HP-UX 11i v1 and later.
    - `gpm` has been renamed as `xglance`. `gpm` is retained for backwards-compatibility.
    - Ability to monitor HP Virtual Machine (HPVM) version 2.0 from the HPVM host system. A new class of metrics, BYLS, is introduced for the HPVM host, to record the configuration and resource utilization metrics for the Virtual Machines.
    - `glance` and `xglance` have new screens to support the BYLS class of metrics.



**NOTE:** HPVM 1.0 is not supported by HP OpenView Performance Agent (OVPA) and GlancePlus.

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## Impact

Refer to the Release Notes of each product (GlancePlus and Performance Agent) in `/opt/perf/ReleaseNotes/` or at the following Web site: [http://ovweb.external.hp.com/lpe/doc\\_serv/](http://ovweb.external.hp.com/lpe/doc_serv/).

## Compatibility

There are no known compatibility issues.

## Performance

There are no known performance issues.

## Documentation

See the documentation of each product (GlancePlus, Performance Agent) at the following site: [http://ovweb.external.hp.com/lpe/doc\\_serv/](http://ovweb.external.hp.com/lpe/doc_serv/).

## Obsolescence

Not applicable.

## LVM (Logical Volume Manager) & MirrorDisk/UX

Logical Volume Manager (LVM) is the HP-UX default Volume Manager. It provides flexibility in configuring and managing mass storage resources. In HP-UX 11i v3, the LVM kernel and commands are delivered as an always-installed ISU (Independent Software Unit), bundled with the core HP-UX product. MirrorDisk/UX (B2491BA) is an optionally purchased HP-UX ISU product to enable LVM mirroring functionality.

## Summary of Change

- **Parallel Resynchronization:** the `lvextend`, `lvmerge`, and `lvsync` commands have new options to control the synchronization of stale extents.
- **Parallel Opens:** the `vgchange` command has a new `-T` option to open physical volumes in parallel during volume group activation.
- **Alternate Link Behavior:** the `pvchange` command has a new option to control the way LVM monitors alternate links of a multi-pathed physical volume.
- **Defect Fixes.**

## Impact

Parallel re-synchronization and parallel opens reduce serialization in LVM, improving system response time.

## Compatibility

There are no known compatibility issues.

## Performance

There are no known performance issues.

## Documentation

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

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

In addition, there are over thirty existing manpages for LVM and its commands. *lvm(7)* provides an overview and list of commands.

## Obsolescence

There are no new obsolescence issues beyond those described for the February 2007 release of HP-UX 11i v3.

## Online Diagnostics

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

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

## Summary of Change

- Online Diagnostics supports Online Addition, Deletion and Replacement of cells.
- Online Diagnostics supports the following systems:
  - rp7440
  - rp8440
  - 9000/800/SD16B, 9000/800/SD32B, 9000/800/SD64B
  - BL860c
- Online Diagnostics supports the following cards for the current release:
  - AB314A : Core IO card for the rx8640 and rp8440 systems
  - AD337A : Dual port PCIe copper card
  - AD338A : Dual port PCIe fiber card
  - AD385A : PCI-X 266MHz 10GbE SR Fiber Adapter
  - AD221A : HP PCIe 1p 1000BT Adapter
  - AD222A : HP PCIe 2p 1000BT Adapter
  - AD393A : HP PCIe 2p 1000SX Adapter
  - AD313A : HP PCIe 2 port 4x Fabric
  - 448262-B21 : HP PCIe Mezz 2 port 4X DDR Fabric
  - 410533-B21 : HP PCIe Mezz 1 port 4X DDR Fabric
  - AB314A : Core IO card for the rx8640 and rp8440 systems

- AB315A : MP/SCSI Core IO board for the rx7640 and rp7440 systems
- 403619-B21 : 2-port 4Gbps PCIe Fibre Channel Mezzanine Adapter
- AD000–60002 : 2-port 2Gbps PCIe Fibre Channel Mezzanine Adapter
- AH319A : 4-port PCIe SAS SmartArray P400i RAID Mezzanine Adapter
- The `memory_ia64` monitor generates a new event #1400, when the Page Deallocation Table (PDT) on the system is 100% full.
- The `dm_chassis` monitor generates a new event #1840, if errors are logged in the Secondary Error Mode registers.
- Online Diagnostics now support the following systems based on the Intel® Itanium® 2 Processor 9100 series:
  - rx7640
  - rx8640
  - SD16B
  - SD32B
  - SD64B

## Impact

There are no known impacts other than those previously listed.

## Compatibility

When you upgrade your operating system from HP-UX 11i v1 or 11i v2 to HP-UX 11i v3, the following Online Diagnostics logs are removed:

- UI Activity Log
- System Activity Logs
- All logs pertaining to STM tools present in `/var/stm/logs/tools`
- All logs pertaining to STM utilities present in `/var/stm/logs/utilities`
- All logs decoded by STM decoders present in `/var/stm/logs/decode`

To view these logs at a later point in time, you must backup the logs before an upgrade.

## Performance

There are no known performance issues.

## Documentation

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

EMS documentation:

- *Data Sheets*
- *EMS Hardware Monitors Quick Reference Guide*
- *EMS Hardware Monitors User's Guide*
- *EMS HW Monitors for Hitachi Systems Running HP-UX*
- *Event Descriptions*
- *Frequently Asked Questions (FAQs)*
- *Multiple-View (Predictive-Enabled) Monitors*
- *Overview*
- *Quick Start: Anatomy of a Monitor (Controlling and Learning About Monitors)*
- *Requirements and Supported Products*
- *Release Notes*

STM documentation:

- *Frequently Asked Questions*
- *Quick Reference*
- *Release Notes*
- *STM Online Help*
- *STM Overview*
- *STM Tutorial*

## Obsolescence

Not applicable.

## System Fault Management

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

## Summary of Change

- The following new providers are introduced in this release:
  - Management Processor Instance Provider
  - Disk Instance Provider
  - Firmware Revision Instance Provider
  - Enclosure Manager Instance Provider
  - SFMIndicationProvider
- On Itanium-based systems, you can choose to use the SFMIndicationProvider instead of the following EMS Hardware Monitors:
  - cmc\_em
  - cpe\_em
  - memory\_ia64
  - ia64\_corehw
  - fpl\_em
- On Itanium®-based systems, the SFMIndicationProvider generates WBEM indications related to the following:
  - Temperature problems
  - Fan failures or performance problems
  - Power supply problems
  - Power unit problems
  - Corrected Machine Checks (CMCs)
  - Corrected Platform Errors (CPEs)
  - System memory
- On PA-RISC-based systems, you can choose to use the SFMIndicationProvider instead of the following EMS Hardware Monitors:
  - ia64\_corehw
  - fpl\_em
- On PA-RISC-based systems, the SFMIndicationProvider generates WBEM indications related to the following:
  - Temperature problems
  - Fan failures or performance problems

- Power supply problems
- Power unit problems
- Logviewer option is available on PA-RISC and Itanium®-based systems. The Log Viewer enables you to view and search the low level logs stored in the log database.
- The Event Subscription Administration includes a new administrative feature called Throttling Configuration on PA-RISC and Itanium®-based systems. Using this feature, you can view and administer a throttling configuration.
- The `evweb eventviewer -L` command includes a new `-x` option that enables you to list events and their respective details based on conditions.
- SFM now supports the following systems based on the Intel® Itanium® 2 Processor 9100 series:
  - rx7640
  - rx8640
  - SD16B
  - SD32B
  - SD64B
- Defect fixes are made.

## Impact

There are no known impacts other than those previously listed.

## Compatibility

There are no known compatibility issues.

## Performance

There are no known performance issues.

## Documentation

For detailed information, see the following:

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

## Obsolescence

Not applicable.

## HP Serviceguard

Serviceguard is a high availability software product for protecting mission-critical applications from a wide variety of hardware and software failures. The current version is A.11.18.

## Summary of Change

- New, streamlined package-creation process
- Explicit support for external scripts
- General-purpose support for package dependencies on the same node



- General-purpose support for multi-node packages (volume groups must be mounted in shared mode)
- Online changes to *HEARTBEAT\_INTERVAL*, *NODE\_TIMEOUT*, and *AUTO\_START\_TIMEOUT* cluster parameters
- Online addition and deletion of heartbeat and data network interfaces along with the corresponding *HEARTBEAT\_IP* and *STATIONARY\_IP* cluster parameters
- Increased support for APA and VLAN
- Support for HP Integrity Virtual Machines (HPVM) version 3.0
- Support for cluster lock LUN
- Support for PIDs up to the maximum size supported by HP-UX
- Support for hostnames up to 39 characters
- Support for HP-UX device-management capabilities such as agile addressing and native multipathing

## Impact

- New online capabilities improve cluster uptime
- Package configuration simplified, eliminating manual copying of package control script
  - Existing packages continue to run with full backward compatibility
  - New packages can be configured by either the old or the new method

## Compatibility

- 5.0 versions of Veritas VxVM, CVM, and CFS from Symantec not yet supported .
- Changes to naming restrictions for a small number of package-configuration parameters may require changes to these names if existing packages are reconfigured.

## Performance

There are no known performance issues.

## Documentation

Documents are posted at <http://docs.hp.com> -> **High Availability** :

- *Managing Serviceguard User's Guide*
- *Serviceguard A.11.18 Release Notes*

## Obsolescence

Not applicable.

## HP Serviceguard Extension for RAC

HP Serviceguard Extension for RAC (formerly known as ServiceGuard OPS Edition) is updated to version A.11.18. HP Serviceguard Extension for RAC allows a group of servers to be configured as a highly available cluster that supports Oracle Real Application Clusters (RAC). The integration of the product offers the best aspects of HP's enterprise clusters and RAC: high availability, data integrity, flexibility, scalability and reduced database administration costs.

## Summary of Change

The following updates are for SGeRAC A.11.18 on HP-UX 11i v3 (11.31):

- Not yet supported on Veritas 5.0 products.
- Veritas (VxVM) 4.1 is supported, but VxVM 3.5 is not.
- Support for Cluster Interconnect Monitoring

- Support for the SGeRAC Toolkit
- Support for Veritas CVM/CFS 4.1
- Support for Oracle 9i & Oracle 10g R2 RAC

## Impact

The transition to this new version can be done by performing a rolling upgrade.

## Compatibility

There are no known compatibility issues.

## Performance

There are no known performance issues.

## Documentation

For detailed information, see the following:

- *Serviceguard Extension for RAC A.111.18 on HP-UX 11.31 Release Notes, October 2006* details the new features. Additionally, the SGeRAC manual has a May 2006 update available at <http://docs.hp.com>.
- The manpages in the product are also updated to reflect the new features and functionality.

## Obsolescence

Not applicable.

## Ignite-UX

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

- Install HP-UX 11i v1 (B.11.11), 11i v2 (B.11.23), and 11i v3 (B.11.31) on multiple PA-RISC and/or Itanium®-based clients on your network.
- Create custom installation configurations, or golden images, for use in multiple installations on clients.
- Recover HP-UX clients from tape or network, both locally and remotely.
- Manage and monitor multiple client installation sessions.

## Summary of Change

Ignite-UX version C.7.3 contains the following new features:

- Pre-enable support for Veritas VxVM and VxFS 5.0 products by Symantec.
- Support for HP-UX 11.00 has been dropped.
- Supports new hardware enabled by the HP-UX release.
- This release also includes defect fixes.

## Impact

There are no known impacts other than those previously listed.

## Compatibility

There are no known compatibility issues.

## Performance

There are no known performance issues.

## Documentation

The Ignite-UX product Web site containing information and documentation can be found at <http://www.docs.hp.com/en/IUX/>.

The following documents, including a new *Ignite-UX Quick Start Guide*, are available on the Information Library page at <http://www.docs.hp.com/en/IUX/infolib.html>:

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

The following white papers are available on the Information Library page at <http://www.docs.hp.com/en/IUX/infolib.html>:

- *Ignite-UX and SAS Devices*
- *Ignite-UX and MirrorDisk/UX*
- *Successful System Cloning using Ignite-UX*
- *Configuring Bastille to Operate with Ignite-UX*
- *Successful System Recovery using Ignite-UX*
- *Installing and Updating Ignite-UX*

## Obsolescence

Not applicable.

## Update-UX and SW-GETTOOLS

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

## Summary of Change

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

## Impact

There is no impact.

## Compatibility

There are no known compatibility issues.

## Performance

There are no known performance issues.

## Documentation

For further information, see the following:

- The latest *HP-UX 11i v3 Installation and Update Guide*, available at <http://www.docs.hp.com/en/oshpux11iv3.html>
- The `update-ux(1M)` manpage
- The `swm-oeupdate(1M)` manpage
- The `swm(1M)` manpage

## Obsolescence

Not applicable.

## Software Utilities

### Software Distributor

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

### Summary of Change

SD has been updated to incorporate defect fixes.

### Impact

There are no known impacts other than those previously listed.

### Compatibility

There are no known compatibility issues.

### Performance

There are no known performance issues.

### Documentation

For further information, see the SD Documentation Web site at <http://docs.hp.com/en/SD>.

## Obsolescence

Not applicable.

## Software Package Builder

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

The SPB graphical user interface (GUI) provides a window into the software package structure, showing attributes that can be set for each package element. SPB dynamically loads packaging policies and validates software package attributes against these policies. The 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

Updated to incorporate defect fixes. These include quality improvements to the manpage and graphical user interface (GUI), a new option to suppress notes/warnings/errors from the command line interface and improved adherence to the packaging policies.

## Impact

There are no impacts other than those previously listed.

## 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 SPB Web site at <http://www.docs.hp.com/en/SPB/>
- the *Software Package Builder 2.0 User's Guide* found at <http://www.docs.hp.com>

## Obsolescence

Not applicable.

## HP Partitioning and Virtual Server Environment

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

The HP-UX Operating Environments include WBEM providers and agent software that enable your systems to operate in the VSE. The VSE Management Software is not included in the Operating Environments, but is available for download from the following Web site:

<http://docs.hp.com/en/vsemgmt/>.

## Dynamic nPartitions, cell online activation

Cell online activation applies only to a cellular complex (see "Hardware Affected" section below for the list of machines that can be considered a cellular complex).

The cell online activation operation is used to activate an inactive cell while the nPartition containing it continues to run. For this operation to be possible, an nPartition must be running HP-UX 11i v3 with the September 2007 Operating Environment Update Release and that nPartition must contain a cell in the inactive state. Upon completion of the cell online activation operation, the processor and memory resources on the activated cell are available for use by the operating system and applications, and any I/O resources will be ready to be activated.

When the new cell is activated, any memory on the cell is configured as Cell Local Memory (CLM), regardless of the `clm_value` attribute established by the `parmodify` command. The activated cell may optionally have an I/O expander attached to it. If so, the host bus adapter is configured into the nPartition, but the individual I/O adapters are not configured unless the system administrator issues a separate subsequent `olrad` command to do so.

## Summary of Change

A new command `parolrad` is enabled. The `-a` option to the command permits a cell to be online activated.

## Impact

You have been able to partition a cellular complex into nPartitions and add a new cell to an existing nPartition. However, prior to HP-UX 11i v3 (11.31), the new cell would not be integrated into the nPartition until such time as it was rebooted. With cell online activation, the new cell is integrated into the nPartition immediately upon command while it continues to run the operating system.

## Compatibility

There are no compatibility issues for source files, scripts, makefiles, executables and data.

There are no tunable changes.

Tunable values that are proportional to the amount of memory in an nPartition are adjusted automatically as part of the cell online addition operation.

There are no differences in behavior or functionality between PA and IPF.

There are no regressions from previous releases of HP-UX.

## Hardware Affected

Dynamic nPartitions is supported on the following servers: rp7420, rp7440, rp8420, rp8440, rx7620, rx7640, rx8620, rx8640, HP 9000 Superdome servers, including the SD16A, SD32A, and SD64A models (but not the SD16000, SD32000, and SD64000 models), and HP Integrity Superdome (SD16A, SD32A, and SD64A, SD16B, SD32B, and SD64B)

This is the set of machines that appear as a cellular complex. Each of these machines requires a minimum firmware revision to support Dynamic nPartitions, as described in the table *System Firmware Matrixes: HP-UX 11i v3, HP-UX11i v2, and PCI I/O Adapters* located at <http://docs.hp.com/en/SFWM1/index.html>.

## Performance

For nearly every customer workload, performance will improve after performing a cell online activation event. The increase in performance may not be as great as it would be if the system were rebooted. The gap between realized performance and potential performance after a reboot should be less than 5%. However, the potential performance gap may increase as more cells are activated online, and could be significant if the number of added cells exceeds the number of cells in the nPartition at the time it booted.

## Documentation

For detailed information, see the following:

Manpages:

- `parcreate(1M)`
- `parmodify(1M)`
- `parstatus(1M)`
- `parolrad(1M)`

Documents (available at <http://docs.hp.com/en/hw.html#System%20Administration>):

- *nPartition Administrator's Guide*
- *HP-UX 11i v3 Dynamic nPartitions: Features and Configuration Recommendations*

## Obsolescence

Not applicable.

## Dynamic nPartitions, cell online deactivation

Cell online deactivation applies only to a cellular complex (see “Hardware Affected” section below for the list of machines that can be considered a cellular complex).

The cell online deactivation operation is used to deactivate an active cell while the nPartition containing it continues to run. For this operation to be possible, an nPartition must be running HP-UX 11i v3 with the September 2007 OEUR, that nPartition must contain a cell that is eligible for deactivation, and any I/O resources on that cell must be inactive. Upon completion of the cell online deactivation operation, the processor and memory resources on the deactivated cell will no longer be used by the operating system or applications.

All of these conditions must be satisfied for the cell online deactivation operation to succeed:

- The cell to be deactivated must have been designated as a floating cell at the time it was integrated into the nPartition.
- If the cell to be deactivated is attached to an I/O expander, all of the PCI cards in that I/O expander must have been deactivated using the `o1rad` command.

## Summary of Change

A new command `parolrad` is enabled. The `-d` option to the command permits a cell to be online deactivated.

## Impact

You have been able to partition a cellular complex into nPartitions and delete a cell from the nPartition. However, prior to HP-UX 11i v3 (11.31), the cell would not be deleted from the nPartition until such time as it was rebooted. With cell online deactivation, the new cell is deleted from the nPartition immediately upon command while it continues to run the operating system.

## Compatibility

There are no compatibility issues for source files, scripts, makefiles, executables and data.

There are no tunable changes.

Tunable values that are proportional to the amount of memory in an nPartition are adjusted automatically as part of the cell online deletion operation.

There are no differences in behavior or functionality between PA and IPF.

There are no regressions from previous releases of HP-UX.

## Hardware Affected

Dynamic nPartitions is supported on the following servers: rp7420, rp7440, rp8420, rp8440, rx7620, rx7640, rx8620, rx8640, HP 9000 Superdome servers, including the SD16A, SD32A, and SD64A models (but not the SD16000, SD32000, and SD64000 models), and HP Integrity Superdome (SD16A, SD32A, and SD64A, SD16B, SD32B, and SD64B).

This is the set of machines that appear as a cellular complex. Each of these machines requires a minimum firmware revision to support Dynamic nPartitions, as described in the table *System Firmware Matrixes: HP-UX 11i v3, HP-UX11i v2, and PCI I/O Adapters* located at <http://docs.hp.com/en/SFWM1/index.html>.



## Performance

Since the online cell deletion operation reduces the resources in an nPartition, its performance capacity will be diminished in proportion to the amount of resources deleted. Therefore, it is not recommended to perform a cell deletion operation unless the nPartition has sufficient idle or underutilized resources.

## Documentation

For detailed information, see the following:

Manpages:

- *parcreate*(1M)
- *parmodify*(1M)
- *parstatus*(1M)
- *parolrad*(1M)

Documents (available at <http://docs.hp.com/en/hw.html#System%20Administration>):

- *nPartition Administrator's Guide*
- *HP-UX 11i v3 Dynamic nPartitions: Features and Configuration Recommendations*

## Obsolescence

Not applicable.

## HP-UX nPartition Configuration Commands

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

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

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

## Summary of Change

- Introduced a new command `parolrad`. This command is used for Dynamic nPartitions support (cell online activation and cell online deactivation).
- Defect fixes.

## Impact

There are no known impacts other than those previously listed.

## Compatibility

There are no known compatibility issues.



## Performance

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

## Documentation

For detailed information, see the following:

Manpages:

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

Documents (available at <http://docs.hp.com/en/hw.html#System%20Administration>):

- *nPartition Administrator's Guide*
- *HP-UX 11i v3 Dynamic nPartitions: Features and Configuration Recommendations*

## Obsolescence

Not applicable.

## nPartition Provider

The nPartition Provider version B.31.01.07.02 is the HP-UX WBEM Services provider for nPartition-related information on partitionable systems. 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 is only used through a WBEM interface. It is not invoked directly by a user.

## Summary of Change

- The interpretation of Dynamic nPartitions capability bit is changed. The interpretation of the bits had to be changed because SPPA definition for Dynamic nPartitions capable changed.
- Defect fixes.

## Impact

There are no known impacts other than those previously listed.

## Compatibility

There are no known compatibility issues.

## Performance

There are no known performance issues.

## Documentation

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

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

## Obsolescence

Not applicable.

## Partition Manager (parmgr)

Partition Manager v2.0, version B.31.02.04.00 provides system administrators with a convenient graphical user interface for configuration and management of nPartitions on HP server systems. In addition, Partition Manager enhances the reliability and performance of HP partitioning products by providing automatic detection of several types of configuration problems.

## Summary of Change

This release of Partition Manager includes support for Dynamic nPartitions (cell online activation and cell online deactivation).

Online cell operations are supported only on servers based on the HP sx1000 or sx2000 chipset. The cell being activated or deactivated must be assigned to an nPartition running HP-UX 11i v3 (B.11.31) September 2007 or later.

## Impact

There are no known impacts other than those previously listed.

## Compatibility

There are no known compatibility issues.

## Performance

There are no known performance issues.

## Documentation

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

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

Additional information about Partition Manager, including links to download all currently available versions, can be found at <http://docs.hp.com/en/PARMGR2/>.

## Obsolescence

Not applicable.

## HP-UX Virtual Partitions

vPars A.05.02 enables multiple instances of the HP-UX 11i v3 Operating Environment (OE) to run simultaneously on one server or within one nPartition, with each OE instance hosting its own set of applications in a isolated environment.

vPars A.05.02 also supports a mixed HP-UX 11i v2/v3 vPars environment. A mixed HP-UX 11i v2/v3 vPars environment allows you to have a vPars A.05.0x Monitor and database that simultaneously supports virtual partitions running vPars A.05.0x on HP-UX 11i v3 (11.31) and virtual partitions running vPars A.04.02 or later on HP-UX 11i v2 (11.23). Virtual partitions running vPars A.03.xx on HP-UX 11i v1 (11.11) are not supported in a mixed HP-UX 11i v2/v3 vPars environment.

When vPars A.05.02 is available, it can be purchased at the HP-UX Virtual Partitions (T1335CC) Web site at the Software Depot: <http://software.hp.com/portal/swdepot/displayProductInfo.do?productNumber=T1335CC>.

## Summary of Change

vPars A.05.02 provides support for the following:

- HP 9000 servers based on the HP sx2000 chipset, including rp7440, rp8440, and HP 9000 Superdome (sx2000).
- Pre-enablement for SCSI tape boot and recovery within a vPars A.05.02 environment for supported HP Integrity servers.
- For detailed information, see the *HP-UX Virtual Partitions Release Notes for A.05.02*.

## Impact

There are no known impacts other than those previously listed.

## Compatibility

There are no known compatibility issues.

## Performance

There are no known performance issues.

## Documentation

For detailed information, see the following:

Software Depot Web Site:

<http://software.hp.com/portal/swdepot/displayProductInfo.do?productNumber=T1335CC>

Documents:

<http://docs.hp.com/en/oshpux11iv3.html#Virtual%20Partitions>

## Obsolescence

Not applicable.

## HP Application Discovery

Application Discovery (amgr)

HP Application Discovery, version 3.1.00.01, provides system administrators and operators with a convenient graphical user interface for browsing an inventory of applications and processes running within a computing network. Screens show the data by host and by application, and you can monitor resource usage at the level of individual processes within an application. In addition, Application Discovery provides automatic detection of several types of application events, and it provides a template editor so that you can expand the scope of discovery to include third-party and custom applications. Application Discovery is integrated with VSE Virtualization Manager, gWLM, and Capacity Advisor to allow VSE workloads to be defined based on discovered applications.

## Summary of Change

Version 3.1.00.01 of Application Discovery contains defect fixes to improve performance, reliability, and quality of the collected data. The Application Discovery agent (AppDiscAgent) is available with Virtual Server Environment software from HP Software Depot (<http://software.hp.com/>) and here on the OE media.

AppDiscAgent

The Application Discovery agent is default-installed on the OE media, and is also available from the AR media. Note that the Application Discovery agent is not automatically started without explicit user action from HP System Insight Manager.

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

## Impact

You can expect improvements in application performance and data quality.

## Compatibility

Using AppDiscAgent 3.1.00.01 with previous versions of Application Discovery 3.x server is fully supported. Using the Application Discovery server 3.1.00.01 (not in the OE) with previous versions of the Application Discovery 3.x agents is also supported.

AppDiscAgent 3.1.00.01 requires the presence of Web-Based Enterprise Management (WBEM) services, Secure Shell (SSH), and OpenSSL for correct operation and secure data transmission. Consult the *VSE Management Software Installation and Update Guide, Version A.03.00.00* for details (included with the software or available online at <http://docs.hp.com/en/vse.html>).

## Performance

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

## Documentation

For detailed information, see the following documentation:

- You can access the online help through the context-sensitive help button [?] in the Application Discovery user interface. A subset of this content is available in the *HP Application Discovery Getting Started Guide, Version 3.0.00*, which is available with the software and online at <http://docs.hp.com/en/vse.html>.
- The following manpages are included for installation with the product:
  - *agent\_config*(1M) for controlling Application Discovery certificates from the managed node
  - *amgr\_remote\_config*(1M) for configuring Application Discovery certificates from the CMS
  - *amgrd*(1M) for controlling or modifying the operation of Application Discovery agent

Only English versions of the man pages and other documentation are included at this time.

## Obsolescence

Not applicable.

## HP Global Workload Manager

HP Global Workload Manager (gWLM), a component of the HP Virtual Server Environment (VSE) Suite, allows you to centrally define resource-sharing policies that you can use across multiple HP servers. These policies increase system utilization and facilitate controlled sharing of system resources. In addition, gWLM provides both real-time and historical monitoring of the resource allocation.

gWLM has three components:

- VSE Central Management Server, or CMS (VSEMgmt)

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

versions of SIM supported, see the VSE Management Software Installation and Update Guide.)

- Agent (T2743AA)

Install the gWLM agent software on each system where you have workloads you want gWLM to manage. These systems are known as managed nodes.

On HP-UX managed nodes, you place each workload in an nPartition(npar), a virtual partition (vpar), a virtual machine (created using HP Integrity Virtual Machines), a processor set (pset), or an fssgroup.

gWLM manages your workloads by controlling the resource allocations to the npars, vpars, virtual machines, psets, or fss groups.

- License to Use, or LTU (T2762AA)

You can obtain the CMS and the agent free of charge. The A.03.00.01.x agent works for a period of 120 days. After the 120 days, the agent:

- Cannot be restarted once it is stopped
- Refuses changes to deployed SRD configurations
- Refuses to deploy new SRD configurations

To continue using gWLM agents after a free-use period has ended, you must install a license on each managed node. It is also available as part of the VSE LTU (T2786AC), which enables you to use gWLM and all the other components of the VSE suite.

## Summary of Change

This release of gWLM includes the following changes:

- Conditional policies that take effect based on Serviceguard events
- Enablement of use of Temporary Instant Capacity (TiCAP) resources on the policy level
- Support for Hyper-Threading
- New `gwlmsstatus` command
- Usability and performance enhancements
- Integration with GlancePlus
- Integration with the Application Discovery and Process Maps features of HP Integrity Essentials Virtualization Manager
- Support for Linux virtual machine guests
- Support for Linux managed nodes has been removed

## Impact

gWLM A.03.00.01.x provides more flexibility in managing your systems.

## Compatibility

Linux managed nodes are no longer supported.

## Performance

System utilization performance is improved when gWLM is properly configured.

## Documentation

For detailed information, see the following:

- Manpages:  
The *gwlmm(5)* manpage provides an overview of gWLM and points to all the other manpages.
- The gWLM Web site:  
<http://www.hp.com/go/gwlm>
- Documents (available at <http://docs.hp.com/en/netsys.html#HP%20Global%20Workload%20Manager>):
  - *HP Integrity Essentials Global Workload Manager User's Guide*
  - *VSE Management Software Installation and Update Guide*
  - *VSE Management Software Quick Start Guide*

## Obsolescence

Not applicable.

## HP Process Resource Manager

HP PRM C.03.03.01 provides an efficient and flexible way to manage resource allocation at times of peak system load. It gives the system administrator the ability to group users or processes together and guarantee each group minimum amounts of the total CPU, real memory, and disk bandwidth available.

## Summary of Change

HP PRM has been updated to version C.03.03.01 with the following changes:

- provides an interface inside HP Systems Insight Manager
- *xprm* interface has been removed

## Impact

You must now use the SMH interface or the SIM interface instead of *xprm*.

## Compatibility

There are no known compatibility issues.

## Performance

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

## Documentation

For detailed information, see the following:

- The *prm(5)* manpage provides an overview of PRM and points to all the other PRM manpages.
- HP's PRM Information Library provides white papers (<http://www.hp.com/go/prm>).
- The following PRM documents available at <http://docs.hp.com/hpux/ha/index.html#Process%20Resource%20Manager>:
  - *HP Process Resource Manager User's Guide*
  - *HP PRM Version C.03.03.01 Release Notes*

## Obsolescence

Not applicable.

## PRMKernelSW

This fileset allows PRM and other related products to control system resources from inside the kernel.

### Summary of Change

The PRM Libraries (B7697BA) is now known as PRMKernelSW.

PRMKernelSW (version C.03.03.01) contains only the PRM kernel fileset, PRM-Sw-Krn.

### Impact

There are no known impacts other than those previously listed.

### Compatibility

There are no known compatibility issues.

### Performance

There are no known performance issues.

### Documentation

For detailed information see the following documents:

- *HP Process Resource Manager User's Guide*
- *HP PRM Version C.03.03.01 Release Notes*

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

### Obsolescence

Not applicable.

## PRMLibraries

This bundle includes the PRM API required by PRM (Process Resource Manager).

### Summary of Change

The PRMLibraries (B7697BA) product that contained only the PRM kernel fileset (PRM-Sw-Krn) is now known as PRMKernelSW.

The PRMLibraries product (version C.03.03.01) now contains the PRM API.

### Impact

There are no known impacts other than those previously listed.

### Compatibility

There are no known compatibility issues.

### Performance

There are no known performance issues.

### Documentation

For detailed information, see the following PRM documents:

- *HP Process Resource Manager User's Guide*
- *HP PRM Version C.03.03.01 Release Notes*

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

## Obsolescence

Not applicable.

## HP Integrity Virtual Machines Provider (VM Provider)

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

## Summary of Change

VM Provider is upgraded to version A.03.00 to support the new features of HP Integrity Virtual Machines A.03.00.

## Impact

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

## Compatibility

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

## Performance

There are no known performance issues.

## Documentation

For more information, see the following (available at <http://docs.hp.com>):

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

## Obsolescence

Not applicable.

## HP Integrity Virtual Machines (VMGuestLib)

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

## Summary of Change

VMGuestLib is upgraded from version A.02.00 includes support for the new features of HP Integrity Virtual Machines A.03.00.

## Impact

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



## Compatibility

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

## Performance

There are no known performance issues.

## Documentation

For more information, see the following (available at <http://docs.hp.com>):

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

## Obsolescence

Not applicable.

## Utilization Provider

The Utilization Provider version A.01.06.02.xx is a lightweight daemon (`utild`) that records system-utilization data on a 5-minute interval. System-utilization data includes CPU, memory, disk, and network. This product also includes a WBEM provider for access to the utilization data.

## Summary of Change

The Utilization Provider has been updated to a new version number to include defect fixes. This version addresses a problem with incorrectly reporting the clock speed of Dual Core Intel® Itanium® processors. Detailed information about this problem and its resolution is available on the VSE Management Software Web site at

<http://docs.hp.com/en/vsemgmt/>

The latest updates to the VSE Management Software agents and providers, including the Utilization Provider, can be downloaded from the HP VSE Managed Node Software Update Web site at

<http://vsemgmt.external.hp.com/>

## Impact

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

The Virtual Server Environment (VSE) Management Software, running on an HP Systems Insight Manager Central Management Server, requires the Utilization Provider to be running on all managed systems. If the Utilization Provider is removed, the system cannot be managed by the VSE Management Software.

## Compatibility

This version of the Utilization Provider depends on HP WBEM Services for HP-UX version A.02.00.11 or later.

## Performance

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

## Documentation

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

`/opt/util/mof`

For more information about the VSE Management Software and Utilization Provider, see the VSE Management Software Web site at

<http://docs.hp.com/en/vsegmt/>

## Obsolescence

Not applicable.

## System Management GUIs

### HP System Management Homepage

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

### Summary of Change

HP System Management Homepage for HP-UX has been updated to version A.2.2.6 to incorporate defect fixes. For more information, see the *HP System Management Homepage Release Notes*, available at <http://www.docs.hp.com/en/netsys.html>.

### Impact

There are no known impacts other than those previously listed.

### Compatibility

There are no known compatibility issues.

### Performance

There are no known performance issues.

## Documentation

For detailed information, see the following:

- HP System Management Homepage manpages included with product:
  - `hpsmh.1m`
  - `smhstartconfig.1m`
- HP System Management Homepage Online Help included with product.
- The following documents available at <http://www.docs.hp.com/en/netsys.html> (navigate to **System Administration**):
  - *HP System Management Homepage Installation Guide*
  - *HP System Management Homepage Release Notes*
  - *Next generation single-system management on HP-UX 11i v2 (B.11.23)*

## Obsolescence

Not applicable.

# HP Systems Insight Manager

HP Systems Insight Manager (HP SIM) is the foundation for HP's unified server-storage management strategy. It is a multiple operating system, hardware level management product that supports HP ProLiant, Integrity and HP 9000 servers, HP StorageWorks MSA, EVA, XP arrays, and third-party arrays. Through a single management view of Microsoft® Windows®; HP-UX 11i v1, HP-UX 11i v2, and HP-UX 11i v3; and Red Hat and SuSE Linux, HP SIM provides the basic management features of system discovery and identification, single event view, inventory data collection, and reporting. The core HP SIM software uses Web Based Enterprise management (WBEM) to deliver the essential capabilities required to manage all HP server platforms.

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

## Summary of Change

HP SIM 5.1 with Update 1 for HP-UX includes:

- Support for HP VSE Management Software 3.0 products.



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**WARNING!** When migrating from HP SIM 5.0 to 5.1 and you are using HP VSE Management Software 2.5 or earlier, you must migrate to HP VSE Management Software 3.0 *before* migrating to HP SIM 5.1.

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**NOTE:** This release of HP SIM does not support HP VSE Management Software 2.5 or earlier.

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- Enhancements to better identify associations between systems when those systems convert to a different type, for example, a standalone system that becomes a Virtual Machine, while retaining the same hostname and IP address.
- The name of orphan systems has changed from `Orphan-devKey` to `Orphan-devKey-oldName` for better recognizing which system becomes orphan, where `devKey` will be replaced with the `devKey` of the system and `oldName` is the old system name.

## Impact

There are no known impacts other than those previously listed.

## Compatibility

HP Systems Insight Manager, version 5.1 with Update 1 supports the following:

- Central management server on:
  - HP-UX 11i v1
  - HP-UX 11i v2 (September 2004 or later)
  - HP-UX 11i v3



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**NOTE:** The required patches must be installed for each of these operating systems. Refer to HP-UX patches for more information.

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- Hardware:
  - Any HP System (PA-RISC 2.0 or Integrity) server with a minimum of 2 GB RAM (3 GB for HP-UX 11i v3)
- Any HP System with Oracle installed with a minimum of 4 GB RAM

- Free disk space:
  - 20 MB for CMS (/)
  - 600 MB for CMS and DTF agent (/opt)
  - 500 MG minimum recommended for data (/var/opt)
- Swap space:
  - 3 GB minimum total swap space for PA-RISC systems, 4 GB minimum total swap space for Intel® Itanium®-based systems
- Software:
  - OpenSSH installed
  - HP WBEM Services for HP-UX, installed and active
  - (Optional) Oracle 9i Release 2
  - Oracle 10g
  - Java Out-of-Box installed (shipped as optional selectable software as part of the operating system)
- Networking:
  - Properly configured and working Domain Name System (DNS)
- Operating systems:
  - HP-UX managed systems:
    - HP-UX 11.0 as a managed node running the DMI agents on that platform
    - HP-UX 11i v1
- Managed system requirements and recommendations:
  - HP-UX 11i v2 (September 2004 or later)
  - HP-UX 11i v3
- UNIX managed systems:
  - HP Tru64 UNIX
  - HP NSK
- Hardware For HP-UX:
  - HP PA-RISC system
  - HP Itanium®-based system
- Required web browsers For HP-UX:
  - Firefox 1.5 or later
- Managed storage system:
  - To view the latest information regarding HP SIM support for a particular storage system, including Fibre Channel disk arrays, switches, tape libraries, or hosts (with Fibre Channel host bus adapters), refer to the HP SIM SMI-S Provider Web page at <http://www.hp.com/go/hpsim/providers>. This Web page also offers information on obtaining and installing SMI-S providers.

## Performance

There are no known performance issues.

## Documentation

For more information, see the following:

- The HP Systems Insight Manager documentation, available on the Web and bundled with the software:

- *HP Systems Insight Manager Installation and Configuration Guide for HP-UX*
- *HP Systems Insight Manager Release Notes*
- *HP Systems Insight Manager README*

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

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

## Obsolescence

HP Systems Insight Manager replaces ServiceControl Manager 3.0.

## Distributed Systems Administration Utilities (DSAU)

Distributed Systems Administration Utilities (DSAU) provides tools that simplify managing groups of systems and Serviceguard clusters. DSAU is based on open source tools cfengine, pdsh, and syslog-ng. DSAU adds several commands and provides extensive documentation for use of DSAU in a Serviceguard environment or on standalone systems. Wizards can be launched from HP SMH/HP SIM.

## Summary of Change

This version has addressed a few usability issues in System Log Viewer.

## Impact

There are no known impacts other than those previously listed.

## Compatibility

There are no known compatibility issues.

## Performance

There are no known performance issues.

## Documentation

These documents are available on <http://docs.hp.com> in the **Network and Systems Management** collection, among the **System Administration** products:

- *Distributed Systems Administration Utilities V1.5 Release Notes*
- *Distributed Systems Administration Utilities User's Guide*

DSAU manpages are available in the 1M and 1 manual page volumes as follows:

- *cexec(1M)*
- *cwall(1M)*
- *clog\_wizard(1M)*
- *clog(1M)*
- *csync\_wizard(1)*
- *ccp(1)*
- *cexec(1)*
- *ckill(1)*

- *cps(1)*
- *csshsetup(1)*
- *cuptime(1)*

Open source manpages for *cfengine*, *pdsh* and *syslog-ng* are available on `/opt/dsau/doc` with the installed product.

## Obsolescence

Not applicable.

## Network Interfaces Configuration and Network Services Configuration (ncweb)

This product (bundle name: *NetworkConfig*) is used to configure network interfaces and network services on a HP-UX system. It has a Web-based graphical user interface and a terminal user interface. The two HP SMH plug-ins that are available on installing this product are:

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

This product is an enhanced version of the Networking and Communications functional area of System Administration Manager (SAM).

## Summary of Change

The Network Interfaces Configuration tool is enhanced to provide the following new features.

Additional IPV6 configuration support:

- The user can specify the private and forward flags while configuring IPv6 primary interface.
- The user can specify any additional modules to be pushed between IPv6 module and DLPI.
- The user can specify any additional modules to be pushed between IPv4 module and DLPI.

Tunnel configuration support

- You can now view information about tunnels, configure a tunnel interface, add a logical tunnel interface, enable and disable a tunnel interface, and remove a tunnel interface. All these features are provided in the `Tunnels` tab.
- The `Tunnels` tab also displays various information about all the tunnels configured for the system. For each tunnel interface, the `Tunnels` tab displays the Tunnel Name, Tunnel type (`ip6inip`, `ipinip6`, `ip6inip6` or `6to4`), Tunnel Local Address, Tunnel Remote Address, Tunnel Encapsulation Source Address, Tunnel Encapsulation Destination Address, Encapsulation Limit, and the Status of the tunnel interface.

## Impact

You can perform more tasks using the graphical user interface (GUI).



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**IMPORTANT:**

- In the NIC (Network Interface Cards) module graphical user interface (GUI) and text user interface (TUI), while modifying IP attributes, the Modules that are added or modified are not displayed in the window. However, the modules that the user specifies are added to the IP configuration attributes. This is a known issue. Currently, there is no workaround for this issue.
  - In the Tunnels module text user interface (TUI), while adding a secondary (logical) tunnel interface, the encapsulation source address and the encapsulation destination address which is inherited from the primary tunnel interface is not automatically displayed in the Add IP Logical (Secondary) Interface window. This is a known issue. Currently, there is no workaround for this issue.
- 



**NOTE:** System Administration Manager (SAM) has been deprecated in HP-UX 11i v3 and will be unavailable onwards. The Networking and Communications functional area of SAM is available as the Network Interfaces Configuration tool and the Network Services Configuration tool in the System Management Homepage (SMH).

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## Compatibility

There are no known compatibility issues.

## Performance

There are no known performance issues.

## Documentation

GUI and TUI Online Help is integrated with the tool.

## Obsolescence

Not applicable.

## Disks and File Systems (fsweb)

The Disks & File Systems (`fsweb`) tool is the primary interface for file system and disks system administration tasks. The tool provides both web-based Graphical User Interface (GUI) and Text User Interface (TUI). The Disks & File Systems tool can be launched from the HP System Management Homepage (HP SMH) and HP Systems Insight Manager (HP SIM). In the 11i v3 release, the tool can also be launched using the `fsweb` command.

The Disks & File Systems tool supports system administration tasks, including management of logical volumes and volume groups, disk management tasks, and file system tasks. The tool supports these file systems: Cache File System (CFS), Compact Disc File System (CDFFS), Common Internet File System (CIFS), Hierarchical File System (HFS), Network File System (NFS), and Veritas File System (VxFS).

The Disks & File Systems tool is available on the HP-UX 11i v2 and HP-UX 11i v3 Operating Environments. It is not supported on Linux and Windows operating systems.

The name of the `fsweb` bundle is `FileSystems`. The `FileSystems` bundle is available on the Operating Environment DVD and the Applications DVD. When you install an HP-UX 11i v3 Operating Environment, HP recommends that you install `FileSystems`.

## Summary of Change

This release of Disks and File Systems provides the following new features:

- Volume Group (VG) creation for Serviceguard (SG) Clusters

The user can create a volume group required for SG clusters. The user can select the nodes, select common disks across selected nodes, create VG on the local working node and then distribute the created VG across all the selected nodes. This feature is available in the GUI as the menu “Create Cluster VG” in the Volume Group tab.

When the user creates Veritas File Systems for Serviceguard packages using the Disks and File Systems tool, the File Systems tab in the FSweb tool does not automatically display the file systems. To be able to view the Veritas File Systems in the File Systems tab, the user or a Serviceguard package must explicitly mount the Veritas File Systems at the time of startup or failover.

- Automatic Cluster Volume Group Distribution

The tool supports automatic distribution of Logical Volume Manager (LVM) changes to all the nodes in a cluster, without the user having to manually perform the Distribute operation. For example, operations such as VG extend can be performed and distributed automatically in an SG cluster using FSweb tool. This applies to all VG, LV, and FS related operations in a SG cluster.

This feature is supported only for volume groups created in exclusive mode. For volume groups created in a shared read/write mode this functionality is not supported.

Also to note is that the term *SLVM* in the FSweb tool is not to be confused with the SLVM feature available from LVM for Serviceguard Extension for RAC (SGeRAC). In the FSweb tool Shared Logical Volume Manager (SLVM) is a generic term for volume groups that are available in a Serviceguard cluster in shared or exclusive mode. The SLVM feature available from LVM for SGeRAC is a mechanism that permits multiple systems in a Serviceguard cluster to share (read/write) disk resources in the form of volume groups.

- Paging Space Configuration

The tool supports configuring and managing paging space on devices, LVM logical volumes, and file systems. This was earlier available as the “swap” feature in System Administration Manager (SAM).

The new features are currently available only in the graphical user interface.

## Impact

There are no known impacts other than those previously listed.

## Compatibility

There are no known compatibility issues.

## Performance

There are no known performance issues.

## Documentation

For detailed information, see the following:

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

## Obsolescence

Not applicable.



## HP-UX Accounts for Users and Groups (ugweb)

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

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

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

### Summary of Change

The Accounts for Users and Groups (ugweb) tool now supports managing POSIX users and group accounts from LDAP database. This new feature is currently available only in the web-based GUI.

The new feature enables you to:

- View list of POSIX user and group accounts from LDAP database based on search filters
- Add, modify, and delete POSIX user and group accounts from LDAP database
- View details of POSIX user and group accounts

The LDAP support is available only if the LDAP-UX Client Services is installed and configured. For information on how to install and configure the LDAP-UX Client Services, see the most recent *LDAP-UX Integration Release Notes* available at <http://www.docs.hp.com>.

### Impact

There are no known impacts other than those previously listed.

### Compatibility

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

- The `/etc/sam/rmuser.excl` and `/etc/sam/rmfiles.excl` files are not supported. These files were used earlier to add users and directories that must be excluded from removal using the HP SAM application.
- UID and passwd are passed as empty strings to task customization scripts.
- Currently, you cannot use the Accounts for Users and Groups (ugweb) tool to add/modify passwords of NIS users when the system is configured for alternate password files in NIS+ Shadow mode. You can use appropriate commands to manipulate the passwords of NIS users.
- Templates created using the legacy SAM application will not work with the Accounts for Users and Groups tool.

### Performance

There are no known performance issues.

### Documentation

For detailed information, see the following:

- Accounts for Users and Groups Online Help
- *ugweb*(1M)
- *smh*(1M)
- *sam*(1M)

## Obsolescence

Not applicable.

## HP-UX Kernel Configuration (*kcweb*)

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

Use the HP-UX Kernel Configuration tool for:

- Tuning the kernel tunables
- Loading and unloading kernel modules
- Configuring alarms
- Viewing change logs

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

## Summary of Change

Defects are fixed.

## Impact

There are no known impacts other than those previously listed.

## Compatibility

There are no known compatibility issues.

## Performance

There are no known performance issues.

## Documentation

For detailed information, see the following:

- Kernel Configuration Online Help
- Manpages:
  - *kcweb*(1M)
  - *sam*(1M)
  - *smh*(1M)
  - *kcalarm*(1M)
  - *kcmond*(1M)
  - *kconfig*(5)
  - *kconfig*(1M)
  - *kcmodule*(1M)
  - *kctune*(1M)
  - *kclog*(1M)
  - *kcpath*(1M)

- *kcusage*(1M)
- *system*(4)

## Obsolescence

Not applicable.

## HP-UX Peripheral Devices Manager (pdweb)

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

The software allows a user to add/replace/delete an OLRAD-capable card online. The tool allows the user to view the devices reported by *ioscan* command and allows to re-install the Device Special Files (DSF) where possible.

## Summary of Change

Defects are fixed.

## Impact

There are no known impacts other than those previously listed.

## Compatibility

There are no known compatibility issues.

## Performance

There are no known performance issues.

## Documentation

For detailed information, see the following:

- Peripheral Devices Manager Online Help
- The following manpages
  - *pdweb*(1M)
  - *sam*(1M)
  - *smh*(1M)

## Obsolescence

Not applicable.

## Printer Management (Web-based)

Printer Management tool is used to manage and configure printers on HP-UX systems. It has a Web-based Graphical User Interface and a Text User Interface.

This product is an enhanced version of the Printers and Plotters functional area of System Administration Manager (SAM).

## Summary of Change

Printer Management tool is a new Web-based printer management tool available on the HP System Management Homepage (HP SMH) to:

- Manage printers
- Save spooler configuration
- Monitor print requests

The key functional features of Printer Management tool are as follows:

- Start and stop print spooler
- Add local, network, and remote printers
- Enable and disable printers from a standalone system or network
- Accept and reject print requests
- Save and restore print spooler configuration

## Impact

The Printer Management tool in the System Management Homepage (SMH) is a Web-based interface for the Printers and Plotters functional area, in the existing System Administration Manager (SAM).

In this release, the Printers and Plotters functional area in the SAM and the Printer Management tool in the SMH coexist.

## Compatibility

There are no known compatibility issues.

## Performance

There are no known performance issues.

## Documentation

GUI Help is integrated with the tool.

## Obsolescence

Not applicable.

# WBEM Services and Providers

## HP WBEM Services for HP-UX

Web-Based Enterprise Management (WBEM) (<http://www.dmtf.org/>) is a platform and resource independent DMTF (Distributed Management Task Force) standard that defines both a common model (i.e., description) and protocol (i.e., interface) for monitoring and controlling a diverse set of resources.

The HP WBEM Services for HP-UX product is the HP-UX implementation of the DMTF (Distributed Management Task Force) WBEM standard.

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

## Summary of Change

HP WBEM Services for HP-UX has been updated to version A.02.05.06 to incorporate defect fixes.

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

## Impact

There are no known impacts other than those previously listed.

## Compatibility

There are no known compatibility issues.

## Performance

There are no known performance issues.

## Documentation

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

Also, see the HP WBEM Services for HP-UX manpages included with product:

- `cimmof.1`
- `cimprovider.1`
- `osinfo.1`
- `wbemexec.1`
- `cimauth.1m`
- `cimconfig.1m`
- `cimserver.1m`
- `cimtrust.1m`
- `ssltrustmgr.1m`
- `cimserverd.8`

On <http://docs.hp.com> under **Network and Systems Management, HP WBEM Services for HP-UX**:

- *HP WBEM Services for HP-UX Release Notes*
- *HP WBEM Services Software Developer's Kit Release Notes*
- *HP WBEM Services for HP-UX System Administrator's Guide*
- *HP WBEM Services Software Developer's Kit for HP-UX Provider and Client Developer's Guide*

## Obsolescence

Not applicable.

## HP-UX WBEM Fibre Channel Provider

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

This product requires WBEM services version number A.02.05 to be installed on HP-UX 11i v3 system.

## Summary of Change

Version Numbering Changes:

- The provider version changes from 11.31 to 11.31.0709.

Feature Changes:

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

## Impact

There are no known impacts other than those previously listed.

## Compatibility

There are no known compatibility issues.

## Performance

There are no known performance issues.

## Documentation

Complete information is in the Fibre Channel provider product data sheet, available at:  
<http://www.docs.hp.com/en/netsys.html#HP%20WBEM%20Services>.

## Obsolescence

Not applicable.

## HP-UX WBEM IOTree Indication Provider

The IOTree Indication provider is a CIM Indication provider, which enables management clients to subscribe to WBEM indications. Indication consumers can receive indications whenever there is a state change in the hot swappable slots of the PCI-IO sub-system.

## Summary of Change

This provider has been added to the Operating Environments in the September 2007 HP-UX 11i v3 Update. The provider version number is 11.31.0709.

Features: The IOTree Indication Provider works in the Web-Based Enterprise Management (WBEM) environment.

The provider supports the following indications:

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

## Impact

There are no known impacts other than those previously listed.

## Compatibility

There are no known compatibility issues.

## Performance

There are no known performance issues.

## Documentation

For detailed information, see the IOTreeIndication Provider product data sheet, available at  
<http://www.docs.hp.com/en/netsys.html#HP%20WBEM%20Services>.

## Obsolescence

Not applicable.

## HP-UX WBEM KC Providers

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

The HP-UX KC Provider supports `kcmodule` provider and `kctunables` provider.

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

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

### Summary of Change

The HP-UX WBEM KC Providers product is introduced in the HP-UX 11i v3 September 2007 release.

### Impact

There is no impact.

### Compatibility

There are no known compatibility issues.

### Performance

There are no known performance issues.

### Documentation

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

- *HP-UX kcmodule provider datasheet*
- *HP-UX kctunable provider datasheet*
- *HP-UX WBEM KC Providers Release Notes*

### Obsolescence

Not applicable.

## HP-UX WBEM LAN Provider for Ethernet Interfaces (WBEMP-LAN-00)

HP-UX LAN Provider (WBEMP-LAN-00) is a CIM Provider for Ethernet-based LAN technologies on the HP-UX operating system. HP-UX LAN Provider uses CIM Schema v2.7.

It consists of two providers: LAN Instance Provider and LAN Consolidated Status Provider.

- The Instance Provider provides information on LAN interfaces in the system. Client applications can use the LAN Instance Provider to determine all Ethernet LAN links available on the system (registered and known to HP-UX DLPI) and collect information about them.
- The LAN Consolidated Status Provider reports the consolidated health status of the Ethernet subsystem. Client applications can query the collection class and obtain the consolidated health status.

### Summary of Change

A new provider is delivered into this release: HP-UX LAN Consolidated Status Provider.

## Impact

There are no known customer impact issues.

## Compatibility

There are no known compatibility issues.

## Performance

There are no known performance issues.

## Documentation

For more information about the LAN Provider module, see the following documents installed on your system:

- `/opt/lanprovider/doc/HPUX_LANProvider.pdf`
- `/opt/lanprovider/doc/HPUX_LANCSProvider.pdf`

## Obsolescence

Not applicable.

## HP-UX WBEM Online Operations Service Provider (OLOS)

The Online Operations Service (OLOS) Provider, version B.01.01, is the HP-UX WBEM Services provider for online operations on partitionable systems running HP-UX 11i v3 (B.11.31).

This provider is delivered as the `olosProvider` product as part of the `SysMgmtMin` bundle.

To disable the OLOS Provider, use the following command:

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

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

## Summary of Change

This release of the OLOS Provider includes support for Dynamic nPartitions (cell online activation and cell online deactivation).

Dynamic nPartitions operations are supported only on servers based on the HP `sx1000` or `sx2000` chipset. The cell being activated or deactivated must be assigned to an nPartition running HP-UX 11i v3 (B.11.31) September 2007 or later.

## Impact

There are no known impacts other than those previously listed.

## Compatibility

There are no known compatibility issues.

## Performance

There are no known performance issues.

## Documentation

There is no external documentation.

## Obsolescence

Not applicable.



## HP-UX WBEM RAIDSA Provider

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

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

### Summary of Change

This is the first release of the RAIDSA provider for HP-UX 11i v3.

### Impact

There is no impact.

### Compatibility

There are no known compatibility issues.

### Performance

There are no known performance issues.

### Documentation

Complete information of the RAIDSA Provider is in the *RAIDSA Provider Data Sheet*, installed at `/opt/raidsaprovider/doc/RAIDSA_Inst_DataSheet.pdf`

### Obsolescence

Not applicable.

## HP-UX WBEM SAS Provider

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

### Summary of Change

This is the first release of the SAS provider for HP-UX 11i v3.

### Impact

There is no impact.

### Compatibility

There are no known compatibility issues.

### Performance

There are no known performance issues.

### Documentation

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

### Obsolescence

Not applicable.

## HP-UX WBEM SCSI Provider

The SCSI Provider is an HP-UX WBEM provider for SCSI host-bus adapters (HBAs). The WBEM clients use the SCSI Provider to retrieve SCSI host-bus adapter attributes, such as port properties and host-bus adapter parameters. This product requires WBEM services version number A.02.05 to be installed on HP-UX 11i v3 system.

### Summary of Change

Version Numbering Changes:

- The provider version number is changed from 11.31 to 11.31.0709.

Feature Changes:

- Supports Consolidated Status Provider (CSP) feature.  
This feature reports the overall health status of the SCSI subsystem in the managed node.

Other Changes:

- Defect fixes.

### Impact

There are no known impacts other than those previously listed.

### Compatibility

There are no known compatibility issues.

### Performance

There are no known performance issues.

### Documentation

Detailed information is in the SCSI provider product data sheet, available at <http://www.docs.hp.com/en/netsys.html#HP%20WBEM%20Services>.

### Obsolescence

Not applicable.

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# 6 Disk and File Management

## What is in This Chapter?

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

- “HP CIFS Server” (page 140)

## HP CIFS Server

The HP CIFS Server product implements many Windows Server features on HP-UX. The Microsoft Common Internet File System (CIFS) protocol, sometimes called Server Message Block (SMB), is a Windows network protocol for remote file access. Because the HP CIFS Server gives HP-UX access to the CIFS protocol, it enables HP-UX systems to inter-operate with PC clients running Microsoft Windows NT, XP, 2000/2003 and HP-UX machines running HP CIFS Client software. The HP CIFS Server provides file sharing, printer access and authentication services to CIFS clients.

HP CIFS Server 3.0h version A.02.03.02 is included on HP-UX OEUR 11i v3 0709 release.

## Summary of Change

HP CIFS Server 3.0f version A.02.03 was included on the initial HP-UX 11i v3 release. HP CIFS Server 3.0h version A.02.03.02 is delivered in the HP-UX 11i v3 September 2007 release. In addition to the new changes and defect fixes provided in version A.02.03.01, the product version A.02.03.02 mainly delivers two security fixes.

HP CIFS Server A.02.03.01 contains the following changes:

- This version of HP CIFS Server software is based on Samba 3.0.22 with 3.0.24 selected fixes. This release provides some changes and defect fixes.
- The change `notify timeout` parameter in `smb.conf` adds share level capability to the existing global level capability.
- The default value of the `winbind cache time` parameter is changed from 60 to 300 (in seconds).
- Starting with this version, HP CIFS Server no longer maintains the LDAP management scripts, `smbldap-tools`. These scripts are included with the HP CIFS Server product and remain available in the `/opt/samba/LDAP3/smbldap-tools` directory. The latest version of these `smbldap-tools` scripts are maintained by IDEALX Open Source Security Software and are available for download at the following web site: <http://samba.idealx.org>.

HP CIFS Server A.02.03.02 contains the following two security fixes and one enhancement:

- Security Defect CVE-2007-2447, SSRTO71424: Potential remote execution Unfiltered user input could potential permit remote command injection and execution.
- Security Defect CVE-2007-2446, SSRTO71424: Potential heap overflow In certain circumstances, specially crafted MS-RPC requests could potentially result in heap overflow, which permits remote code execution.
- Enhance the `wbinfo` tool with two new options, `-c` and `-C`, which can be used to display the total number of users or groups for a domain.

## Impact

This release of HP CIFS Server provides defect fixes and security fixes.

## Compatibility

There are no known compatibility issues.

## Performance

There are no known performance issues.

## Documentation

For detailed information, refer to the following documentation:

- The following Samba books, which are provided with the HP CIFS Server product and are accessible through the Samba Web Administration Tool (SWAT) home page, or can be

accessed directly at `/opt/samba/docs/Samba-HOWTO-Collection.pdf` and `/opt/samba/swat/help` from an HP CIFS Server system:

- Samba book, *The Official Samba-3 HOW TO and Reference Guide*
- Samba book, *Samba-3 by Example*
- The following HP CIFS Server documents, which can be found at <http://docs.hp.com/en/netcom.html> (navigate to **CIFS**):
  - *HP CIFS Server 3.0g Administrator's Guide version A.02.03.01*
  - *HP CIFS Server 3.0g Release Note version A.02.03.01*
  - *HP CIFS Server 3.0h Release Note version A.02.03.02*

## Obsolescence

Not applicable.



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# 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 v3 release, including:

- “HP-UX Mobile IPv4” (page 144)
- “Internet Services” (page 144)
  - “Multimedia Streaming Protocols (MSP)” (page 145)
- “LDAP-UX Integration” (page 145)
- “Red Hat Directory Server for HP-UX” (page 147)
- “Web Browsers” (page 148)
- Web Servers:
  - “HP-UX NSA (Network Server Accelerator) HTTP ” (page 149)
  - “HP-UX Web Server Suite” (page 149)
  - “HP-UX Apache-based Web Server” (page 150)
  - “HP-UX Tomcat-based Servlet Engine” (page 151)
  - “HP-UX Webmin-based Admin” (page 151)
  - “HP-UX XML Web Server Tools” (page 152)

# HP-UX Mobile IPv4

HP-UX Mobile IPv4, version A.03.01, provides mobility support for mobile devices to migrate from their home network to other networks, either within the same administrative domain or to other administrative domains on the Internet.

## Summary of Change

Updated to version A.03.01.

## Impact

There are no known impacts other than those previously listed.

## Compatibility

There are no known compatibility issues.

## Performance

There are no known performance issues.

## Documentation

Manpages:

- `mipd.1m`
- `mipd.conf.4`
- `miprod.1m`
- `miprod.conf.4`
- `mipconfig.1m`
- `miproconfig.1m`
- `mipadmin.1m`
- `AAAKeyTypes.conf.4`

Documents on <http://docs.hp.com>

- *HP-UX Mobile IPv4 Release Notes A.03.01*
- *HP-UX Mobile IPv4 Administrator's Guide A.03.01*

## Obsolescence

Not applicable.

## Internet Services

Internet Services delivers and supports the networking services considered essential to HP-UX system administrators interoperating in a network based on the TCP/IP framework.

The InternetSrvcs product is split into multiple products based on product functionality. All of these products are part of the HP-UX base operating system in HP-UX 11iv3. According to the new architecture of the Internet Services suite of products, the InternetSrvcs product is split into 12 small products as follows:

- DHCPv6
- DHCPv4
- Sendmail
- NameService
- Gated-Mrouted
- RAMD



- FTP
- NTP
- TCPWrappers
- SLP
- MSP
- InternetSrvcs

These products can be deselected during installation or can be removed individually.

## Multimedia Streaming Protocols (MSP)

Multimedia Streaming Protocols (MSP) enable you to transfer audio and video files to a remote location in real time. Streaming multimedia data is a transaction between the server and client. The client, such as RealPlayer or Winamp, is a user application that accesses the media. The server is an application that provides all the client applications with the multimedia content. Unlike the download-and-play mechanism, the multimedia streaming client starts playing the media packets as soon as they arrive, without holding back to receive the entire file. While this technology reduces the client's storage requirements and startup time for the media to be played, it introduces a strict timing relationship between the server and the client.

### Summary of Change

Starting with the September 2007 release of HP-UX 11i v3, MSP is delivered on the HP-UX 11i v3 Operating Environments as an optional feature.

### Impact

There are no known impacts other than those previously listed.

### Compatibility

There are no known compatibility issues.

### Performance

There are no known performance issues.

### Documentation

The following documentation is available for MSP at <http://www.docs.hp.com>:

- *HP-UX Multimedia Streaming Protocols (MSP) Programmer's Guide*
- *HP-UX Multimedia Streaming Protocols(MSP) Release Notes*

### Obsolescence

Not applicable.

## LDAP-UX Integration

The LDAP-UX Integration product uses the Lightweight Directory Access Protocol (LDAP) to centralize user, group and network information management in an LDAP directory. LDAP-UX integration enables the LDAP directory to be used as a single source repository for HP-UX authentication, authorization, user data and account management. The LDAP-UX Integration product includes the following subcomponents:

- LDAP-UX Client Services
- LDAP-UX Client Administration Tools and Migration Scripts
- NIS/LDAP Gateway Server

LDAP-UX Client Services contains `pam_authz` and the Mozilla LDAP C Software Development Kit (SDK) two subcomponents. LDAP-UX Client Services simplifies HP-UX system administration by consolidating account, group and other configuration information into a central LDAP directory server. The LDAP-UX Client Services software works with a variety of LDAP v3 capable directory servers and is fully tested with Red Hat Directory Server and the Microsoft Windows 2000/2003/2003 R2 Active Directory Server.

The LDAP-UX Client administration tools can help you to manage data in an LDAP directory server. Migration scripts can be used to convert NIS, NIS+ maps or corresponding `/etc` files into LDIF files and import them into an LDAP directory server.

NIS/LDAP Gateway is a Network Information Service (NIS) that allows an NIS client to use an LDAP directory as its repository for NIS maps. This product provides an NIS to LDAP Gateway which converts NIS `rpc` requests into LDAP operations.

The LDAP-UX Integration product B.04.10 is included on the HP-UX 11i v3 0709 release.

## Summary of Change

The LDAP-UX Integration product B.04.00.10 was included on the initial HP-UX 11i v3 release.

The LDAP-UX Integration product B.04.10 is delivered in the HP-UX 11i v3 September 2007 release. The product version B.04.10 provides many new features and defect fixes.

LDAP-UX Integration B.04.10 contains the following major features:

- **Dynamic Group Support.** This release supports dynamic groups, where users are dynamically added to groups based on the conditional settings. The conditions can be specified with an LDAP search filter or an LDAP URL. When a user data matches with the conditions, she/he belongs to the dynamic group
- **PAM\_AUTHZ Enhancements as follows:**
  - `PAM_AUTHZ` supports LDAP account and password security policy enforcement without requiring LDAP-based authentication. This feature supports applications, SSH (Secure Shell) or `r`-commands with `rhost` enabled where authentication is performed by the command itself.
  - `PAM_AUTHZ` provides dynamic variable support for the `ldap_filter` type of the access rule in the `/etc/opt/ldapux/pam_authz.policy` file.
  - This releases introduces a new `PAM_AUTHZ` access rule, `unix_local_user`.
- **TLS Support.** This release supports a new extension operation of TLS (Transport Level Security) protocol called `startTLS` to secure communication between LDAP clients and the LDAP directory server. You can utilize the `startTLS` operation to set the secure connection over a regular (an un-encrypted) LDAP port, such as port 389.
- **Schema Extension Utility.** This release provides a new schema extension utility, `ldapschema`. This utility allows schema developers to define LDAP schemas using a universal XML syntax, greatly simplifying the ability to support different directory server variations.
- **Support for Microsoft Windows 2003 Release 2 Active Directory Server.** Windows 2003 R2 ADS provides the R2's RFC 2307 schema which is compliant with the IETF RFC 2307 standard.

For detailed information about new features and defect fixes, refer to the LDAP-UX Client Services Administrator's Guide and Release Notes.

## Impact

There are no known impacts other than those previously listed.

## Compatibility

There are no known compatibility issues.

## Performance

There are no known performance issues.

## Documentation

For more information, refer to the following documentation available at <http://docs.hp.com/en/internet.html> (navigate to **LDAP-UX Integration**):

- *LDAP-UX Client Services B.04.10 Administrator's Guide*
- *LDAP-UX Client Services B.04.10 with Microsoft Windows Active Directory Server Administrator's Guide*
- *LDAP-UX Integration B.04.10 Release Notes*

## Obsolescence

Not applicable.

## Red Hat Directory Server for HP-UX

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

## Summary of Change

Red Hat Directory Server B.07.10.30 is included in the HP-UX 11i v3 September 2007 release. It mainly contains defect fixes. For detailed information about defect fixes, refer to the *Red Hat Directory Server B.07.10.30 for HP-UX Release Notes and Supplemental Instructions* available at <http://www.docs.hp.com/en/internet.html>.

## Impact

Red Hat Directory Server B.07.10.30 for HP-UX provides defect fixes.

## Compatibility

There are no known compatibility issues.

## Performance

There are no known performance issues.

## Documentation

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

- *Red Hat Directory Server B.07.10.30 for HP-UX Release Notes and Supplemental Instructions*
- *Red Hat Directory Server 7.1 Installation Guide*
- *Red Hat Directory Server 7.1 Configuration, Command, and File Reference*
- *Red Hat Directory Server 7.1 Deployment Guide*
- *Red Hat Directory Server 7.1 Administrator's Guide*
- *Red Hat Directory Server 7.1 Schema Reference*
- *Red Hat Directory Server 7.1 Plug-In Programmer's Guide*
- *Red Hat Directory Server 7.1 Gateway Customization Guide*

## Obsolescence

Not applicable.

## Web Browsers

Mozilla is an open source web and e-mail applications suite.

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

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

Firefox/Thunderbird uses the new open-source windowing toolkit Gnome 2.6 GTK+ libraries for HP-UX on HP PA-RISC 11i v1 (11.11), 11i v2 (11.23), and HP Integrity 11i v2 (11.23). You must install the windowing toolkit before installing Firefox/Thunderbird.

Products are:

- Mozilla, MozillaSrc 1.7.13.01
- Firefox, FirefoxSrc 1.5.0.8
- Thunderbird, ThunderbirdSrc 1.5.0.08
- GTK, GTKSrc 2.6.8.00

## Summary of Change

Update the products to the following versions:

- Mozilla, MozillaSrc 1.7.13.01
- Firefox, FirefoxSrc 1.5.0.8
- Thunderbird, ThunderbirdSrc 1.5.0.08
- GTK, GTKSrc 2.6.8.00

## Impact

This Mozilla version includes improved Asian font support on HP-UX and includes the Japanese Language Pack. Also included are fixes for security vulnerabilities reported in Mozilla 1.7.12.01.

The Firefox 1.5.0.8 open source Web browser includes Firefox 1.5.0.8 changes from the Mozilla Foundation. This version fixes several security vulnerabilities reported by the Mozilla Foundation.

Thunderbird version 1.5.0.8 for HP-UX provides online browsing and searching tools for HP-UX on HP PA-RISC. This version fixes several security vulnerabilities reported by the Mozilla Foundation.

## 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>.

Firefox/Thunderbird uses the new open-source windowing toolkit on both PA and Integrity. You must install the windowing toolkit before installing Firefox/Thunderbird.

Firefox and Thunderbird use the GTK open-source windowing toolkit on both PA and Integrity, which you must install before installing Thunderbird. Additionally, there is a mandatory HP-UX patch, PHSS\_33033, for HP PA-RISC 2.0 (11.11). For more information, see <http://www.hp.com/go/firefox>.

## Performance

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

## Documentation

See the product Release Notes and <http://www.hp.com/go/mozilla> for more information on using Mozilla.

For more information on Firefox/Thunderbird on HP-UX 11i, visit <http://www.hp.com/go/firefox>.

## Obsolescence

The Mozilla application suite will not be updated with any new security fixes. If you are currently using Mozilla or Netscape, we encourage you to upgrade to Firefox 1.5, or later version, to avoid security vulnerabilities.

## Web Servers

### HP-UX NSA (Network Server Accelerator) HTTP

The HP-UX NSA HTTP B.11.31.01.02 product enables NSA functionality for the HTTP protocol on HP-UX 11i version 3 (11.31). NSA HTTP improves Web server performance by maintaining an in-kernel cache of recently accessed web pages.

### Summary of Change

Updated to version B.11.31.01.02.

### Impact

There are no known impacts other than those previously listed.

### Compatibility

There are no known compatibility issues.

### Performance

When NSA HTTP is activated, Web page requests (HTTP GET requests) are serviced directly from the data cache in the kernel. Serving web pages from the in-kernel cache instead of passing the requests to a user-space application tremendously improves web server performance.

## Documentation

For further information, see the following:

- *nsahttp(1)* manpage
- *HP-UX NSA HTTP B.11.31.01.02 Release Notes*
- *Network Server Accelerator HTTP Performance White Paper*

## Obsolescence

Not applicable.

## HP-UX Web Server Suite

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

- HP-UX Apache-based Web Server.
- HP-UX Webmin-based Admin.
- HP-UX Tomcat-based Servlet Engine.
- HP-UX XML Web Server Tools.

## Summary of Change

- Apache upgraded to 2.0.58.01.
- Tomcat upgraded to 5.5.20.00.
- Webmin upgraded to 1.070.09.
- Xml Tools upgraded to 2.03.

## Impact

There are no known impacts other than those previously listed.

## Compatibility

There are no known compatibility issues.

## Performance

There are no known performance issues.

## Documentation

Please see *HP-UX Web Server Suite Release Notes* for details.



**NOTE:** 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](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](http://yourserver.com:10000/hp_docs)).

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>.

## Obsolescence

Not applicable.

## HP-UX Apache-based Web Server

HP-UX Apache-based Web Server version 2.0.58.01 combines Apache with numerous popular modules from other Open Source projects and provides HP value-added features for the HP-UX platform:

- Scripting capabilities: PHP, `mod_perl`, CGI
- Content management: WebDAV, FrontPage Server Extensions 2002
- Security: authentication through an LDAP server, Webproxy, Chrooted environment, SSL and TLS support

## Summary of Change

This release of HP-UX Apache-based Web Server is primarily a security/bug fix release.

## Impact

There are no known impacts other than those previously listed.

## Compatibility

This release is binary-compatible with Apache 2.0.50 and greater. All the modules compiled with Apache 2.0.50 or greater will continue to work with this version since the Apache API has not changed.

## Performance

There are no known performance issues.

## Documentation

Please see *HP-UX Web Server Suite Release Notes* for details.

## Obsolescence

Not applicable.

## HP-UX Tomcat-based Servlet Engine

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

## Summary of Change

Tomcat version upgrade to 5.5.20.00:

- Tomcat version 5 implements the Servlet 2.4 and JavaServer Pages 2.0 specifications.
- Tomcat 5.5.x is designed to run on JDK 1.5 and later versions.

## Impact

There are no known impacts other than those previously listed.

## Compatibility

There are no known compatibility issues.

## Performance

There are no known performance issues.

## Documentation

Please see *HP-UX Web Server Suite Release Notes* for details.

## 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

This release of HP-UX Webmin-based Admin is primarily a bug fix release. Webmin upgraded to version 1.070.09.

## Impact

There are no known impacts other than those previously listed.

## Compatibility

There are no known compatibility issues.

## Performance

There are no known performance issues.

## Documentation

Please see *HP-UX Web Server Suite Release Notes* for details.

## 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

- XML Web Server tools upgraded to version 2.03.
- Xerces upgraded to version 2.8.0.

## Impact

There are no known impacts other than those previously listed.

## Compatibility

There are no known compatibility issues.

## Performance

There are no known performance issues.

## Documentation

Please see *HP-UX Web Server Suite Release Notes* for details.

## Obsolescence

Not applicable.



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# 8 Security

## What is in This Chapter?

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

- “HP-UX Auditing and Security Attributes Configuration (secweb)” (page 154)
- “HP-UX Bastille and Install-Time Security” (page 155)
- “HP-UX Host Intrusion Detection System” (page 156)
- “HP-UX IPFilter” (page 157)
- “HP-UX Secure Shell” (page 159)
- “HP-UX Software Assistant” (page 159)
- “OpenSSL” (page 160)

# HP-UX Auditing and Security Attributes Configuration (secweb)

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

The HP-UX Auditing and Security Attributes Configuration tool provides both web-based Graphical User Interface (GUI) and Text User Interface (TUI). You can launch the tool from HP System Management Homepage (HP SMH) or HP Systems Insight Manager (HP SIM), or by using the *secweb* command.

## Summary of Change

The Audit Configuration functional area of the legacy System Administration Manager (SAM) is now available with a new Graphical User Interface (GUI) as part of HP-UX Security Attributes Configuration tool in HP SMH.

In the GUI the auditing functionality is integrated with the security attributes configuration functionality. As a consequence, the HP-UX Security Attributes Configuration tool (GUI) is now called HP-UX Auditing and Security Attributes Configuration tool. In the Text User Interface (TUI) the auditing functionality continues to be available as is and is not integrated with the security attributes configuration tool.

## Impact

You will have access to both the Audit Configuration functional area of legacy SAM and the auditing functionality in the HP-UX Auditing and Security Attributes Configuration tool in HP SMH.

When you click the Audit Configuration tool in HP SMH, the tool opens in the legacy SAM. When you click Auditing and Security Attributes Configuration in HP SMH the tool opens the new web-based Graphical User Interface (GUI).

Legacy SAM is deprecated and will be obsolete in a future HP-UX release.

## Compatibility

There are no known compatibility issues.

## Performance

There are no known performance issues.

## Documentation

For detailed information, see the following:

- Auditing and Security Attributes Configuration Online Help
- Manpages:
  - *secweb*(1M)
  - *audit*(5)
  - *sam*(1M)
  - *smh*(1M)

## Obsolescence

Not applicable.

# HP-UX Bastille and Install-Time Security

**HP-UX Bastille** HP-UX Bastille is a security hardening/lockdown tool which can be used to enhance the security of the HP-UX operating system. It provides customized lockdown on a system-by-system basis by encoding functionality similar to the Bastion Host and other hardening/lockdown checklists.

Bastille was originally developed by the open source community for use on Linux systems. HP contributed significantly to Bastille on Linux and also offers a high-quality, content-rich, and supported, HP-UX Bastille.

This tool, along with Install-Time Security (ITS) and Software Assistant (SWA) introduces new, out-of-the-box security functionality.

**Install Time Security** Install-Time Security (ITS) version 1.0.4 adds a security step to the install/update process that allows you to run the Bastille security lockdown engine during system Installation with one of four configurations ranging from default security to DMZ.

ITS includes the following levels, selectable in the Ignite-UX “System” tab during the installation process:

- Sec00Tools (security-level pre-enablement)
- Sec10Host (Host-Based Lockdown, without IPFilter configuration)
- Sec20MngDMZ (Lockdown + block most incoming traffic with IPFilter firewall)
- Sec30DMZ (Host-Based and IPFilter Network Lockdown)

## Summary of Change

Bastille and ITS are the same as they were in the initial release of HP-UX 11i v3, except that they now work with SWA instead of Security Patch Check (SPC).

## Impact

Bastille and ITS are the same as they were in the initial release of HP-UX 11i v3, except now, you will be able to (with Bastille) set up a cron job to get patch and update data that traverses a secure protocol versus the old ftp usage.

## Compatibility

There are no differences between the Itanium®-based and PA-RISC implementation (they are the same). Some products depend on services, system settings, or network ports that Bastille secures. In those cases, products that depend on out-of-box settings that Bastille may change, document their dependency. Where practical, Bastille also documents these dependencies.

*HP-UX 11i v3 Installation and Update Guide*, available at <http://docs.hp.com/en/oshpux11iv3.html>, discusses which particular Bastille settings are applied at each level.

## Performance

Though Bastille does not directly affect performance, its configuration of IPFilter settings (host-based firewall), will cause a slight network performance decrease.

ITS does not impact performance, but if the DMZ or MngDMZ levels are used, there may be a very small network performance slowdown due to the IPFilter packet filtering.

## Documentation

Information can be found in the following documents:

- *HP-UX System Administrator’s Guide: Security Management*, available online at <http://docs.hp.com/en/oshpux11iv3.html> (specifically, Chapter 10)
- *bastille(1M)* manpage (add /opt/sec\_mgmt/share/man/ to MANPATH)

- *Bastille User's Guide*, delivered in `/opt/sec_mgmt/bastille/docs/user_guide.txt`
- HP-UX Bastille Web site at <http://www.hp.com/go/bastille>
- *HP-UX 11i v2 Installation and Update Guide*, available online at <http://docs.hp.com/en/oshpux11iv3.html>
- Support is also offered through HP's IT Resource Center's HP-UX Security Forum at [http://forums1.itrc.hp.com/service/forums/pa?\\_urldo=CURL=%2Fm%2FCategoryHome%2F1%2C%2C155%2C00html&admit=682735245+115768896487+28353475](http://forums1.itrc.hp.com/service/forums/pa?_urldo=CURL=%2Fm%2FCategoryHome%2F1%2C%2C155%2C00html&admit=682735245+115768896487+28353475)

## Obsolescence

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

## HP-UX Host Intrusion Detection System

HP-UX HIDS Release 4.1 is a host-based HP-UX security product for HP computers running HP-UX 11i. HP-UX HIDS Release 4.1 enables security administrators to pro-actively monitor, detect, and respond to attacks targeted at specific hosts. Since there are many types of attacks that can bypass network-based detection systems, HP-UX HIDS Release 4.1 complements existing network-based security mechanisms, bolstering enterprise security.

## Summary of Change

HP-UX HIDS Release 4.1 supports the following new features:

- Supports an alert volume reduction feature that pro-actively suppresses duplicate alerts from being generated, logged and reported to the HIDS administrator console. Using this feature, administrators can manage HIDS alerts with ease, by focusing their attention on fewer and more significant alerts.
- Includes a reporting feature that enables the generation of customized and consolidated alert reports that are easy to view and print. Reports can be generated in html, text, and raw formats.
- Provides a tuning tool that reduces the time and effort to deploy and maintain Surveillance Schedules by:
  - Eliminating the time consuming and error prone process of manually generating filtering rules.
  - Facilitating the review of alerts from multiple agents running the same schedule, by presenting an alert report that consolidates duplicate alerts and groups alerts triggered by the same program.
  - Performing automatic schedule updates and deployments.

This tool effectively automates the process of identifying and filtering file-related alerts that the HIDS administrator consider safe to ignore (i.e., alerts generated because of normal system activity). This tool can be used to perform the following tasks:

- Customize a preconfigured schedule to filter out alerts generated as part of normal system activity during the initial HIDS deployment.
- Fine tune an existing schedule if new alerts that are considered safe to ignore are generated after deployment.

## Impact

There are no known impacts other than those previously listed.

## Compatibility

HP-UX HIDS 4.1 is not backward compatible with Release 1.0 and Release 2.0, Release 2.1, and Release 2.2 (collectively referred to as 2.x). Release 1.0 and 2.x are obsolete and no longer supported by HP.

Schedules created using previous versions of HIDS need to be migrated to HIDS 4.1. For more information on migrating schedules, see the *HIDS Release Notes* available at <http://docs.hp.com> in the **Internet Security Solutions** section.

## Performance

There are no known performance issues.

## Documentation

For detailed information, see the following:

Manpages (with product bits):

- *IDS\_checkAdminCert*(1M)
- *IDS\_checkAgentCert*(1M)
- *IDS\_checkInstall* (1M)
- *IDS\_genAdminKeys*(1M)
- *IDS\_genAgentCerts* (1M)
- *IDS\_importAgentKeys*(1M)
- *idsadmin*(1M)
- *idsagent*(1M)
- *idsgui*(1M)
- *ids.cf* (5)

These are located in `/opt/ids/share/man`

Documents available at <http://docs.hp.com/en/internet.html#HP-UX%20Host%20Intrusion%20Detection%20System>:

- *HP-UX Host Intrusion Detection System Release 4.1 Release Notes*
- *HP-UX Host Intrusion Detection System Administrator's Guide, Software Release 4.1*

*The OpenView Operation Smart Plug-in for HP-UX Administrators and Users Guide* is located at [http://openview.hp.com/products/spi/spi\\_ids/index.html](http://openview.hp.com/products/spi/spi_ids/index.html)

To access this document, do the following:

1. Click on the **To download this gallery SPI, read the SPI gallery terms and conditions** link
2. Agree to the Terms and Conditions
3. Sign in through HP Passport

## Obsolescence

Support for Release 2.x of HP-UX HIDS was discontinued on March 31, 2007. HP recommends anyone using HP-UX HIDS Release 2.x upgrade to Release 4.1. To know more about discontinuance, see <http://www.hp.com/software/releases/releases-media2/discon/index.htm>.

## HP-UX IPFilter

HP-UX IPFilter A.11.31.13 provides system firewall capabilities by filtering IP packets to control traffic in and out of a system.

## Summary of Change

HP-UX IPFilter A.11.31.13 is the same as HP-UX IPFilter product shipped with the initial HP-UX 11i v3 OEs (HP-UX IPFilter A.03.05.13). The only difference is the version number, which was changed to provide OS version information and to make it easier for HP-UX 11i v2 customers with IPFilter A.03.05.14 to install IPFilter when they upgrade to HP-UX 11i v3.

(The initial IPFilter release for HP-UX 11i v3 had the version number A.03.05.13. HP-UX 11i v2 customers with IPFilter A.03.05.14 who upgraded to HP-UX 11i v3 and wanted to install IPFilter A.03.05.13 had to specify the `swinstall option allow_downdate=true`.)

HP-UX IPFilter A.11.31.13 is functionally equivalent to HP-UX IPFilter A.03.05.12 with the following differences and additional features:

- On HP-UX 11i v3, you must enable HP-UX IPFilter using the `/opt/ipf/bin/ipfilter` command after you install IPFilter. Once you enable IPFilter, it will be automatically enabled on subsequent system reboots.
- HP-UX IPFilter A.11.31.13/A.03.05.13 uses `kctune` to view and modify IPFilter tunable kernel values. You can no longer use the `ndd` utility to view or modify IPFilter tunable kernel values.
- HP-UX IPFilter A.11.31.13 does not include IPv6 functionality. The file `/etc/opt/ipf/ipf6.conf` is not supported. The `ipf` and `ipfstat` utilities do not support the `-6` option.

## Impact

You must manually enable IPFilter after installing it.

If you are using IPFilter for IPv6 packets, you will not be able to use this feature.

## Compatibility

Entries in `ndd` scripts that reference the following tunable kernel values (IPFilter tunable kernel values) are no longer supported and must be removed:

- `ipl_buffer_sz`
- `ipl_suppress`
- `ipl_logall`
- `cur_iplbuf_sz`

Refer to the *HP-UX IPFilter A.03.05.13 Administrator's Guide* for information on using `kctune` to view and modify IPFilter tunable kernel values.

The file `/etc/opt/ipf/ipf6.conf` is not supported. The `ipf` and `ipfstat` utilities do not support the `-6` option.

## Performance

The impact on system performance is the same as it is for previous versions of HP-UX IPFilter.

## Documentation

For detailed information, see the following:

Manpages:

- `ipf(4)` packet filtering kernel interface
- `ipf(5)` IP packet filter rule syntax
- `ipf(8)` alters packet filtering kernel's internal lists
- `ipl(4)` data structure for IP packet log device
- `ipmon(8)` monitors `/dev/ipl` for logged packets
- `ipstat(8)` reports on packet filter statistics and filter list
- `iptest(1)` test packet rules with arbitrary input

Documents:

All the documents below are available at <http://docs.hp.com/en/internet.html#HP-UX%20IPFilter>:

- *HP-UX IPFilter A.03.05.13 Administrator's Guide*
- *HP-UX IPFilter A.03.05.13 Release Notes*
- *IPFilter/9000 Sizing and Performance White Paper*

## Obsolescence

Not applicable.

## HP-UX Secure Shell

HP-UX Secure Shell A.04.50.011 (A.04.50) is based on the public domain OpenSSH 4.5p1. The client/server architecture supports the SSH-1 and SSH-2 protocols and provides secured remote login, file transfer, and remote command execution.

## Summary of Change

HP-UX Secure Shell A.04.50.011 is a defect fix release. No new features have been added.

## Impact

There are no known impacts other than those previously listed.

## Compatibility

There are no known compatibility issues.

## Performance

There are no known performance issues.

## Documentation

See the following documents are available on <http://docs.hp.com> in the **Internet and Security Solutions** section:

- *HP-UX Secure Shell Getting Started Guide*
- *HP-UX Secure Shell A.04.50.009, A.04.50.010, and A.04.50.011 Release Notes*

Also, see the following manpages:

- *sshd\_config(5)*
- *ssh\_config(5)*
- *ssh(1)*

## Obsolescence

Not applicable.

## HP-UX Software Assistant

HP-UX Software Assistant C.01.02 is a command-line based tool that consolidates and simplifies patch management and security bulletin management on HP-UX systems.

## Summary of Change

The SWA tool includes Security Patch Check (SPC) and is the HP-recommended utility to use to maintain currency with HP-published security bulletins for HP-UX software. The bundle name is *SwAssistant*. The product number is B6834AA. It incorporates key functionality from the previously available Security Patch Check (*SecPatchCk* bundle name), ITRC patch assessment, and more.

## Impact

SWA

- Is for system administrators who patch and maintain the security of HP-UX systems.
- Is supported on HP-UX 11i systems.

- Provides a Command Line Interface (CLI).
- Is a client-side patch and security analysis/acquisition tool. It has ITRC Patch Assessment Tool and Security Patch Check (SPC) capabilities with a few minor exceptions, namely, patch set analysis.
- Analyzes a system (and some types of depots) for patch warnings, critical defects, security bulletins, missing Quality Pack patch bundle, and user-specified patches and patch chains.
- Uses an HP-supplied catalog file to analyze your system and generate reports.
- Optimizes the automatic selection of patch dependencies by accessing the quality of the dependency, providing the best case scenario for the dependency, minimizing changes to the system, and assessing future patch dependency changes.
- Produces the Action, Issue, and Detail Reports as well as a consolidated HTML report for you to see what issues are relevant to the software on the system or in the depot.
- Provides the ability to download patches and build a Software Distributor (SD-UX) depot which will fix many of the issues in the report. You can also use SWA to see recommended additional actions in the report which you need to take care of manually.
- Verifies patch integrity automatically (using MD5 cryptographic hash) before unpacking downloaded patches.

## Compatibility

There are no known compatibility issues.

## Performance

The performance of SWA is strongly characterized by the network connectivity/performance to get catalogs and get software.

## Documentation

For more information, see the following:

The HP-UX Software Assistant Web site at <https://www.hp.com/go/swa> provides the product overview, download links, and installation instructions.

The SWA manpages describe the commands and provide examples. For HP-UX releases, the manpages are available from the command line using the `man swa` command:

- `swa(1M)`
- `swa-report(1M)`
- `swa-get(1M)`
- `swa-step(1M)`
- `swa-clean(1M)`

The *HP-UX Software Assistant Release Notes* provides the features and functionality of the latest release, and known problems.

The *HP-UX Software Assistant System Administration Guide* provides an introduction to the tool, how to use it, integration with other HP products, how to use the reporting, and troubleshooting.

The documents are available on the HP Technical Documentation Web site at <http://docs.hp.com> (navigate to **11i v3**, then to **Patch Management**).

## Obsolescence

Not applicable.

## OpenSSL

OpenSSL A.00.09.09d is based on the open source OpenSSL 0.9.7l and 0.9.8d products. This bundle contains the following:



- OpenSSL A.00.09.08d in the `/opt/openssl/0.9.8` directory
- OpenSSL A.00.09.071 in the `/opt/openssl/0.9.7` directory

The default version of OpenSSL enabled in HP-UX 11i v3 is OpenSSL A.00.09.08d.002. A toggle script `switchversion.sh` is available in `/opt/openssl`. Use this script to change the default version of OpenSSL between OpenSSL A.00.09.08d and OpenSSL A.00.09.071.

## Summary of Change

There are no new features in this version of OpenSSL.

## Impact

There are no known impacts other than those previously listed.

## Compatibility

There are no known compatibility issues.

## Performance

There are no known performance issues.

## Documentation

For more information, refer to the OpenSSL A.00.09.071.004, A.00.09.071.005 and A.00.09.08d.002 Release Notes at <http://docs.hp.com> under the section **Internet and Security Solutions**.

## Obsolescence

Not applicable.



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# 9 Commands and System Calls

## What is in This Chapter?

This chapter provides information about new and changed commands and system calls, including the following:

- “ioscan Command” (page 164)

## ioscan Command

The *ioscan(1M)* command scans system hardware, usable I/O system devices, or kernel I/O system data structures as appropriate, and lists the result. The `-l` option of this command lists locally connected devices.

### Summary of Change

The `-l` option of *ioscan(1M)* lists locally connected devices. The `-l` option of *ioscan(1M)* has been deprecated and will be obsoleted in a future HP-UX release.

### Impact

There is no known impact.

### Compatibility

There is no known compatibility impact.

### Performance

There is no known performance impact.

### Documentation

For further information, see the manpage of *ioscan(1M)*.

### Obsolescence

The `-l` option of *ioscan(1M)* has been deprecated and will be obsoleted in a future HP-UX release.

---

# 10 Libraries and Programming

## What is in This Chapter?

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

- “HP MPI” (page 166)
- “Perl” (page 167)

## HP MPI

HP MPI Version 2.2.5 is a high-performance implementation of the Message Passing Interface standard. HP MPI complies fully with the 1.2 standard and provides full MPI-2 functionality. 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

The user's guide has been updated from the 10th edition to the 11th edition to include information for the Windows V1.1 release.

### Impact

There is no impact.

### Compatibility

There are no known compatibility issues.

### Performance

There are no known performance issues.

### Documentation

For further information, see the following:

- 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 (Eleventh Edition)* is available at <http://docs.hp.com/en/B6060-96024/index.html>.
- The *HP MPI V2.2.5 for HP-UX Release Note* is available at <http://docs.hp.com/en/B6060-96023/index.html>.

### Obsolescence

Currently, there are no obsolescence plans.

## Java JDK/JRE for HP-UX

HP-UX Software Development Kit and Runtime Environment for the Java 2 Standard Edition Platform (SDK/RTE) provides the Java 2 programming tools and runtime environment which allow you to deploy Java technology with the best performance on systems running HP-UX 11i.

Products are as follows:

- Java15JDK — Java 1.5.JDK
- Java15JDKadd — Java 1.5.JDK Addon
- Java15JRE — Java 1.5 JRE
- Java15JREadd — Java 1.5 JRE Addon
- T1456AA — Java 1.4 SDK
- T1456AAaddon — Java 1.4 SDK Addon
- T1457AA — Java 1.4 RTE
- T1457AAaddon — Java 1.4 RTE Addon
- T1458AA — Java 1.4 Plugin
- ObsJava13 — Obsolescence for Java 1.3 (1.0)

## Summary of Change

Java 1.4.2.13 and Java 5.0.8 are new versions that contain defect fixes.

## Impact

Java 1.4.2.13 and Java 5.0.08 contain defect fixes. There should be no impact to customers.

## Compatibility

There are no known compatibility issues.

## Performance

There are no known performance issues.

## Documentation

For the latest documentation, refer to the Java Technology for HP-UX 11i Web site at <http://hp.com/go/java> and select "information library" in the left navigation bar.

## Obsolescence

SDK/RTE 1.3 has reached end-of-life and is not included in this release. The ObsJava13 (Obsolescence for Java 1.3) bundle removes SDK/RTE 1.3 upon installation of the HP-UX 11i v3 Operating Environments.

## Perl

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

## Summary of Change

Perl version 5.8.8 build 817.1 has been made for some defect fixes.

## Impact

There is no impact.

## Compatibility

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

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

The new safe signals implementation postpones handling of signals until it's safe (in between the execution of low level opcodes). This change may have surprising side effects because signals no longer interrupt Perl instantly.

## Performance

- Weak reference creation is now  $O(1)$  rather than  $O(n)$ . Weak reference deletion remains  $O(n)$ , but if deletion only happens at program exit, it may be skipped completely.
- There are improvements to reduce the memory usage of "sort" and to speed up some cases.

- As much data as possible in the C source files is marked as “static”, to increase the proportion of the executable file that the operating system can share between process, and thus reduce real memory usage on multi-user systems.
- The internal pointer mapping hash used during ithreads cloning now uses an arena for memory allocation. In tests this reduced ithreads cloning time by about 10%.
- “reverse sort ...” is now optimized to sort in reverse, avoiding the generation of a temporary intermediate list.
- “for (reverse @foo)” now iterates in reverse, avoiding the generation of a temporary reversed list.

## Documentation

For further information, see the following Web sites:

- <http://www.perl.org>
- <http://www.activestate.com>
- <http://learn.perl.org>

## Obsolescence

Not applicable.



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# 11 Internationalization

## What is in This Chapter?

This chapter usually describes internationalization functionality. Topics in this chapter are unchanged for the September 2007 release of HP-UX 11i v3.

For a summary of changes in the previous release of HP-UX 11i v3, see “What is New in the Initial (February 2007) HP-UX 11i v3 Release?” (page 48)



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# 12 Other Functionality

## What is in This Chapter?

This chapter usually describes other new and changed operating-system software functionality. Topics in this chapter are unchanged for the September 2007 release of HP-UX 11i v3.

For a summary of changes in the previous release of HP-UX 11i v3, see “What is New in the Initial (February 2007) HP-UX 11i v3 Release?” (page 48)