

HP 3PAR OS 3.2.1

Service Notes

Abstract

This document describes the features and issues included in HP 3PAR OS 3.2.1 and is intended for use by HP 3PAR Sales Representatives, Systems Engineers, Partners, and Support Personnel. This document is applicable to HP 3PAR OS 3.2.1.46. This document is for HP INTERNAL AND PARTNER USE ONLY.



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Warranty

WARRANTY STATEMENT: To obtain a copy of the warranty for this product, see the warranty information website:

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

Documentation

For the latest version of this document, go to the Services Access Workbench at <http://sawpro.atlanta.hp.com/km/saw/search.do>.

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1 HP 3PAR OS 3.2.1 Service Notes

Upgrade Considerations

Direct upgrades from HP 3PAR OS 3.1.1 to HP 3PAR OS 3.2.1.46 are not supported with the initial release of HP 3PAR OS 3.2.1.

Customers running 3.1.1 and wishing to upgrade to 3.2.1 will need to upgrade to 3.1.2 MU3 + P41 prior to upgrading to 3.2.1.

NOTE: Software upgrades to HP 3PAR OS 3.2.1 GA for systems that are in a Remote Copy Synchronous Long Distance Replication relationships are currently not supported. HP 3PAR OS 3.2.1 support for these configuration will be enabled via a future release.

NOTE: Software upgrades to HP 3PAR 3.2.1 GA for systems that use Remote Copy and CLX are currently not supported. HP 3PAR OS 3.2.1 support for these configuration will be enabled via a future release.

Supported Platforms

The HP 3PAR OS 3.2.1 Configuration Matrix contains information about supported hardware and software platforms. To obtain a copy of this documentation, see the Single Point of Connectivity Knowledge for HP Storage Products (SPOCK) website at: <http://www.hp.com/storage/spock>.

OS Components

Component	Version
OS	3.2.1.46
CLI Client	3.2.1.46
SNMP Agent	1.7.0
Drive Cage Firmware:	
DC4 Firmware	2.64
DCN1/DCS1/DCS2 Firmware	3218
NEMOE/MCU Firmware	4.61
HBA Firmware:	
QLogic 8G FC (QLFCX)	04.05.01
QLogic 10G CNA (P3+)	04.11.151
QLogic 1G iSCSI (QLIS)	03.00.01.77
LSI SAS 6G (9205)	17.11.00
Emulex 2-port 4G (Helios)	02.82.x10
Emulex 4-port 8G FC (Saturn)	02.02.x15
Emulex 2-port 16G FC (Lancer)	1.1.65.16
Drive Firmware	
FC 15K HVIPC0300GBFC15K/HUS156030VLF400 (DC4) 300G	3P03
FC 15K HVIPC0600GBFC15K/HUS156060VLF400 (DC4) 600G	3P03
HRALP0100GBFCSSD/HUSS14010ALF400 SSD (DC4) 100G	3P05

Component	Version
HRALP0200GBFCSSD/HUSSL4020ALF400 SSD (DC4) 200G	3P05
ST3300657FC/SEGLE0300GBFC15K FC 15K (DC4) 300G	3P03
ST3600057FC/SEGLE0600GBFC15K FC 15K (DC4) 600G	3P03
SSD HSSC0920S5xnFMRI 150k (DC4/DCN1/DCS2) 920G	3P03
SSD DOPE0480S5xnNMRI 100k (DC4/DCN1/DCS2) 480G	3P01
SSD DOPE1920S5xnNMRI 100k (DC4/DCN1/DCS2) 1920G	3P01
FC HUC101212CSS600/HCEP1200S5xnN010 10k (DC4/DCS2) 1200G	3P00
SSD DOPA0480S5xnNMRI 150 (DC4/DCS2) 480G	3P02
SSD DOPA0920S5xnNMRI 150 (DC4/DCS2) 920G	3P02
SSD HUSMM8040ASS204/HSSC0480S5xnNMRI 150 (DC4/DCS2) 480G	3P02
SSD HUSMM8080ASS204/HSSC0920S5xnNMRI 150 (DC4/DCS2) 920G	3P02
SSD HUSMM8040ASS204/HSSC0400S5xnNMME 150 (DC4/DCS2) 400G	3P02
SSD HUSMM8080ASS204/HSSC0800S5xnNMME 150 (DC4/DCS2) 800G	3P02
NL ST2000NM0023/SMEG2000S5xnN7.2 7.2k (DC4/DCS1) 2000G	3P01
NL ST3000NM0023/SMEG3000S5xnN7.2 7.2k (DCS1) 3000G	3P01
NL ST4000NM0023/SMEG4000S5xnN7.2 7.2k (DC4/DCS1) 4000G	3P01
NL ST2000NM0063/SMEG2000S5xnF7.2 7.2k (DC4/DCS1) 2000G	3P00
NL ST2000NM0063/SMEG4000S5xnF7.2 7.2k (DC4/DCS1) 4000G	3P00
FC ST450MM0036/SLTN0450S5xnF010 10k (DC4/DCS2) 450G	3P00
FC ST600MM0036/SLTN0600S5xnF010 10k (DC4/DCS2) 600G	3P00
FC ST900MM0036/SLTN0900S5xnF010 10k (DC4/DCS2) 900G	3P00
NL HMRP2000S5xnN7.2 7.2k (DC4/DCS1) 2000G	3P00
NL HMRP3000S5xnN7.2 7.2k (DC4/DCS1) 3000G	3P00
NL HMRP4000S5xnN7.2 7.2k (DC4/DCS1) 4000G	3P00
NL HMRP2000S5xnE7.2 7.2k (DC4/DCS1) 2000G	3P00
NL HMRP3000S5xnE7.2 7.2k (DC4/DCS1) 3000G	3P00
NL HMRP4000S5xnE7.2 7.2k (DC4/DCS1) 4000G	3P00
FC SLTNG0450GBAS10K/SLTN0450S5xnN010 10k (DC4/DCS2) 450G	3P01
FC SLTNG0600GBAS10K/SLTN0600S5xnN010 10k (DC4/DCS2) 600G	3P01
FC SLTNG0900GBAS10K/SLTN0900S5xnN010 10k (DC4/DCS2) 900G	3P01
SSD HUSML4040ASS600/HRLP0400S5xnNMLC 150 (DC4/DCS2) 400G	3P02
SSD HUSML4040ASS601/HRLP0400S5xnEMLC 150 (DC4/DCS2) 400G	3P01
FC SLTNG0450GBAS10K/SLTN0450S5xnE010 10k (DCS2) 450G	3P00
FC SLTNG0900GBAS10K/SLTN0900S5xnE010 10k (DCS2) 900G	3P00
FC SAWK1000S5xnN7.2 7.2k (DCS2) 1000G	3P00
NL ST91000640SS/SAWK1000S5xnE7.2 7.2k (DCS2) 1000G	3P00
FC ST9300653SS/SYJKT0300GBAS15K 15k (DC4/DCS2) 300G	3P01

Component	Version
FC HUC109045CSS600/HCBRE0450GBAS10K 10k (DC4/DCS2) 450G	3P02
FC HUC109045CSS600/HCBRE0600GBAS10K 10k (DC4/DCS2) 600G	3P02
FC HUC109090CSS600/HCBRE0900GBAS10K 10k (DC4/DCS2) 900G	3P02
SSD HUSSL4020BSS600/HRALP0200GBASSLC 150 (DCS2) 200G	3P00
SSD HUSSL4010BSS600/HRALP0100GBASSLC 150 (DCS2) 100G	3P00
NL HUS723020ALS640/HMRSK3000GBAS07K 7.2k (DCS1) 3000G	3P02
NL HUS723020ALS640/HMRSK2000GBAS07K 7.2k (DC4/DCS1) 2000G	3P02
NL ST2000NM0011/SMSKP0002TBAT07K 7.2k (DC4) 2000G	3P01
NL ST1000NM0011/SMSKP0001TBAT07K 7.2k (DC4) 1000G	3P01
NL HUA723020ALA640/HMRSK0002TBAT07K 7.2k (DC4) 2000G	3P01

Modifications to the OS

The following items are addressed in this release.

Issue ID	Item	Description
46823	checkhealth reports current FC CRC errors	The <code>checkhealth -svc -full portcrc</code> command compares current LESB error counters to the most recent data in the log. If no errors are reported for a port, the most recent 3:37am samples are compared for errors "yesterday". The sample process creates a small checkhealth PR log with just two days of data. This allows checkhealth to run in less time.
74879	Fixed hidden option -r for showversion	The -r hidden option for the <code>showversion</code> command provides information about the previously installed package. The <code>showversion -r</code> correctly displays all the patches that are previously installed and that correspond to the package installed earlier.
76043	Checkhealth reports current SAS bus errors	The <code>checkhealth -svc -full portpelcrc</code> command compares current PEL error counters to the most recent data in the log. If no errors are reported for a port, the most recent 3:37am samples are compared for errors "yesterday". The sample process creates a small checkhealth PR log with just two days of data. This allows checkhealth to run in less time.
89263	The "Command failed" error message appears during OOTB preserved data LD creation.	If "Command failed" messages appear during OOTB configuration when creating the preserved data storage, run <code>checkhealth</code> command after OOTB finishes. If <code>checkhealth</code> reports that the LDs are healthy it is safe to ignore the Command failed error messages.
98969	The <code>showvmap</code> command provides region count option.	The <code>showvmap</code> command provides region count option. this is hidden option for support.
101357	The <code>checkhealth</code> command tolerates 100 MHz variations in processor speed.	The <code>checkhealth</code> command tolerates 100 MHz variations in processor speed similar to the CPU bus speed check tolerance. It also compares CPU speed of all cores of all CPUs.
108328	New <code>relocatepd</code> command	NOTE: This is a hidden command and is only intended for TS and any approved partners to use. The <code>relocatepd</code> command facilitates the moving of one or more disks from the current location to an empty location. Each location pair is specified using the following <location_pair> format: <src_cage>:<src_slot>-<dst_cage>:<dst_slot>

Issue ID	Item	Description
		It allows up to eight location pairs to be specified in single command. The individual disk relocate operations are executed one at a time and in any order.

Known Issues with the OS

Issue ID	Item	Description
96155	Disable health check of non-active network management interface.	To disable the check for admin link status on the array, a <code>checkhealth_skip_admin_link_check</code> file must be created on all nodes in <code>/common/touchfiles</code> . This file is not reported by <code>checkhealth</code> so that the system continues to report "healthy" but it does not bring up the admin interfaces on non-active nodes to prevent unnecessary monitoring alerts in a very sensitive network monitoring.
103706	If the test after firmware upgrade of a drive using a bridge fails, it leaves the PD in logging and does not turn on LD alloc or move chunklets back to the drive.	<p>When upgrading to HP 3PAR OS 3.2.1, the upgrade process calls <code>admithw</code> automatically as a post upgrade task. This upgrades the HMRSK2000GBAS07K disk drives to the 3P02 firmware. After the new drive firmware is upgraded, the upgraded code will call the <code>checkpd</code> diagnostic which turns off ld allocation and sets the lds in logging mode during the diagnostic. Some of these diagnostics fail leaving the disk with ld allocation turned off and the lds in logging mode.</p> <p>Workaround: To resolve this:</p> <pre>setpd log off [Wait for chunklets to come out of logging] setpd ldalloc on moverelocpd</pre> <p>Example using pdid 12:</p> <pre>root@inodee2dlb:~# setpd log off 12 [Wait for chunklets to come out of logging] root@inodee2dlb:~# setpd ldalloc on 12 root@inodee2dlb:~# showpd -i -p -devid HMRSK2000GBAS07K 12 12 0:3:0 normal 5000CCA01CBA5CFD HITACHI HMRSK2000GBAS07K YGK9H8ZK 3P02,2498 SAS Magnetic root@inodee2dlb:~# moverelocpd 12</pre>
105638	For ESX, upgrade issues occur if "auto_failover" is not set for existing PP group.	<p>To avoid issues while upgrading to HP 3PAR OS 3.2.1 with ESX hosts connected:</p> <ol style="list-style-type: none"> 1. For PP groups, to set <code>auto_failover</code> for all primary groups on both arrays: <code>setrcopygroup pol auto_failover</code> 2. Complete upgrade to HP 3PAR OS 3.2.1. 3. After upgrade is complete, to remove <code>auto_failover</code> for non-auto PP primary group on both arrays: <code>setrcopygroup pol no_auto_failover</code>.

2 Support and Other Resources

Contacting HP

For worldwide technical support information, see the HP support website:

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

Before contacting HP, collect the following information:

- Product model names and numbers
- Technical support registration number (if applicable)
- Product serial numbers
- Error messages
- Operating system type and revision level
- Detailed questions

Specify the type of support you are requesting:

HP 3PAR storage system	Support request
HP 3PAR StoreServ 7200, 7400, and 7450 Storage systems	StoreServ 7000 Storage
HP 3PAR StoreServ 10000 Storage systems HP 3PAR T-Class storage systems HP 3PAR F-Class storage systems	3PAR or 3PAR Storage

HP 3PAR documentation

For information about:	See:
Supported hardware and software platforms	The Single Point of Connectivity Knowledge for HP Storage Products (SPOCK) website: SPOCK (http://www.hp.com/storage/spock)
Locating HP 3PAR documents	The HP Storage Information Library: Storage Information Library (http://www.hp.com/go/storage/docs/) By default, HP 3PAR Storage is selected under Products and Solutions .
Customer Self Repair procedures (media)	The HP Customer Self Repair Services Media Library: Customer Self Repair Services Media Library (http://h20464.www2.hp.com/index.html) Under Product category , select Storage . Under Product family , select 3PAR Storage Systems for HP 3PAR E-Class, F-Class, S-Class, and T-Class Storage Systems, or 3PAR StoreServ Storage for HP 3PAR StoreServ 10000 and 7000 Storage Systems.
HP 3PAR storage system software	
Storage concepts and terminology	<i>HP 3PAR StoreServ Storage Concepts Guide</i>
Using the HP 3PAR Management Console (GUI) to configure and administer HP 3PAR storage systems	<i>HP 3PAR Management Console User's Guide</i>

For information about:	See:
Using the HP 3PAR CLI to configure and administer storage systems	<i>HP 3PAR Command Line Interface Administrator's Manual</i>
CLI commands	<i>HP 3PAR Command Line Interface Reference</i>
Analyzing system performance	<i>HP 3PAR System Reporter Software User's Guide</i>
Installing and maintaining the Host Explorer agent in order to manage host configuration and connectivity information	<i>HP 3PAR Host Explorer User's Guide</i>
Creating applications compliant with the Common Information Model (CIM) to manage HP 3PAR storage systems	<i>HP 3PAR CIM API Programming Reference</i>
Migrating data from one HP 3PAR storage system to another	<i>HP 3PAR-to-3PAR Storage Peer Motion Guide</i>
Configuring the Secure Service Custodian server in order to monitor and control HP 3PAR storage systems	<i>HP 3PAR Secure Service Custodian Configuration Utility Reference</i>
Using the CLI to configure and manage HP 3PAR Remote Copy	<i>HP 3PAR Remote Copy Software User's Guide</i>
Updating HP 3PAR operating systems	<i>HP 3PAR Upgrade Pre-Planning Guide</i>
Identifying storage system components, troubleshooting information, and detailed alert information	<i>HP 3PAR F-Class, T-Class, and StoreServ 10000 Storage Troubleshooting Guide</i>
Installing, configuring, and maintaining the HP 3PAR Policy Server	<i>HP 3PAR Policy Server Installation and Setup Guide</i> <i>HP 3PAR Policy Server Administration Guide</i>

For information about:	See:
Planning for HP 3PAR storage system setup Hardware specifications, installation considerations, power requirements, networking options, and cabling information for HP 3PAR storage systems	
HP 3PAR 7200, 7400, and 7450 storage systems	<i>HP 3PAR StoreServ 7000 Storage Site Planning Manual</i> <i>HP 3PAR StoreServ 7450 Storage Site Planning Manual</i>
HP 3PAR 10000 storage systems	<i>HP 3PAR StoreServ 10000 Storage Physical Planning Manual</i> <i>HP 3PAR StoreServ 10000 Storage Third-Party Rack Physical Planning Manual</i>
Installing and maintaining HP 3PAR 7200, 7400, and 7450 storage systems	
Installing 7200, 7400, and 7450 storage systems and initializing the Service Processor	<i>HP 3PAR StoreServ 7000 Storage Installation Guide</i> <i>HP 3PAR StoreServ 7450 Storage Installation Guide</i> <i>HP 3PAR StoreServ 7000 Storage SmartStart Software User's Guide</i>
Maintaining, servicing, and upgrading 7200, 7400, and 7450 storage systems	<i>HP 3PAR StoreServ 7000 Storage Service Guide</i> <i>HP 3PAR StoreServ 7450 Storage Service Guide</i>
Troubleshooting 7200, 7400, and 7450 storage systems	<i>HP 3PAR StoreServ 7000 Storage Troubleshooting Guide</i> <i>HP 3PAR StoreServ 7450 Storage Troubleshooting Guide</i>
Maintaining the Service Processor	<i>HP 3PAR Service Processor Software User Guide</i> <i>HP 3PAR Service Processor Onsite Customer Care (SPOCC) User's Guide</i>
HP 3PAR host application solutions	
Backing up Oracle databases and using backups for disaster recovery	<i>HP 3PAR Recovery Manager Software for Oracle User's Guide</i>
Backing up Exchange databases and using backups for disaster recovery	<i>HP 3PAR Recovery Manager Software for Microsoft Exchange 2007 and 2010 User's Guide</i>
Backing up SQL databases and using backups for disaster recovery	<i>HP 3PAR Recovery Manager Software for Microsoft SQL Server User's Guide</i>
Backing up VMware databases and using backups for disaster recovery	<i>HP 3PAR Management Plug-in and Recovery Manager Software for VMware vSphere User's Guide</i>
Installing and using the HP 3PAR VSS (Volume Shadow Copy Service) Provider software for Microsoft Windows	<i>HP 3PAR VSS Provider Software for Microsoft Windows User's Guide</i>
Best practices for setting up the Storage Replication Adapter for VMware vCenter	<i>HP 3PAR Storage Replication Adapter for VMware vCenter Site Recovery Manager Implementation Guide</i>
Troubleshooting the Storage Replication Adapter for VMware vCenter Site Recovery Manager	<i>HP 3PAR Storage Replication Adapter for VMware vCenter Site Recovery Manager Troubleshooting Guide</i>
Installing and using vSphere Storage APIs for Array Integration (VAAI) plug-in software for VMware vSphere	<i>HP 3PAR VAAI Plug-in Software for VMware vSphere User's Guide</i>

Typographic conventions

Table 1 Document conventions

Convention	Element
Bold text	<ul style="list-style-type: none">• Keys that you press• Text you typed into a GUI element, such as a text box• GUI elements that you click or select, such as menu items, buttons, and so on
Monospace text	<ul style="list-style-type: none">• File and directory names• System output• Code• Commands, their arguments, and argument values
<Monospace text in angle brackets>	<ul style="list-style-type: none">• Code variables• Command variables
Bold monospace text	<ul style="list-style-type: none">• Commands you enter into a command line interface• System output emphasized for scannability



WARNING! Indicates that failure to follow directions could result in bodily harm or death, or in irreversible damage to data or to the operating system.



CAUTION: Indicates that failure to follow directions could result in damage to equipment or data.

NOTE: Provides additional information.

Required

Indicates that a procedure must be followed as directed in order to achieve a functional and supported implementation based on testing at HP.

HP 3PAR branding information

- The server previously referred to as the "InServ" is now referred to as the "HP 3PAR StoreServ Storage system."
- The operating system previously referred to as the "InForm OS" is now referred to as the "HP 3PAR OS."
- The user interface previously referred to as the "InForm Management Console (IMC)" is now referred to as the "HP 3PAR Management Console."
- All products previously referred to as "3PAR" products are now referred to as "HP 3PAR" products.