



**Hewlett Packard
Enterprise**

HPE 3PAR OS 3.2.2 MU4 Patch 98

Release Notes

Abstract

This release notes document is for Patch 98 and intended for HPE 3PAR Operating System Software 3.2.2.612 (MU4).

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Purpose

The HPE 3PAR OS 3.2.2 MU4 Patch 98 provides several critical quality improvements.

Guidance

This is a critical patch for HPE 3PAR OS 3.2.2 MU4.

Prerequisites

- Minimum SP version: SP-4.4.0.GA-58 + the latest SP patch.
- Base OS: OS-3.2.2.612-MU4. See the Requires field in the Patch details.

Patch details

Patch ID: P98

Synopsis: Provides several critical quality improvements

Date: February 16, 2018, 18:53:26 PST

Affected Packages: tpd-admck, tpd-api, tpd-cachesvr, tpd-kernelpatch, tpd-netc, tpd-nodesvr, tpd-sysmgr, tpd-tocsvr, tpd-prerevert

Obsoletes: None

Requires: OS-3.2.2.612-MU4, OS-3.2.2.612-P59, OS-3.2.2.612-P84, OS-3.2.2.612-P92, OS-3.2.2.612-P94

Build Version: 3.2.2.724

Patches Partially Superseded: OS-3.2.2.612-P59, OS-3.2.2.612-P84, OS-3.2.2.612-P92, OS-3.2.2.612-P94

Patches Obsolete by Combination: None

Revert Supported: Yes

NOTE:

Hewlett Packard Enterprise recommends installing patches in the same sequence as they are released, unless instructed otherwise.

Modifications

Patch 98 provides:

Issue ID	Description
184033	A logical disk (LD) can now be removed even if the LD is in a preserved state provided the LD is empty (none of the LD's regions are mapped to a Virtual Volume).
197465	An unexpected controller node restarts during node down processing regardless of the situation that initially causes the array to restart.
211011	Prevents the CLI from becoming unresponsive while performing an <code>updatevv</code> on a <code>vvset</code> with a large number of VV in the <code>vvset</code> .

Table Continued

Issue ID	Description
211227	When performing a <code>setnet startaddr</code> followed by a network master change, the array will lose its management IP address, rendering the array unmanageable.
211282	Conversion of a TPVV, without a snapshot CPG defined, to a fully provisioned VV leaves internal data structures in an inconsistent state which results in an unexpected array restart.
212190	When large inter-node I/O transfers are split into smaller I/Os, an error on any of the smaller I/O transfers will cause the entire I/O to stall.
215548	An unexpected controller node restart occurs when Remote Copy links go down.
218484 100946	An unexpected controller node restart occurs after making changes to Remote Copy FC (RCFC) ports due to fragmentation of transfers in-flight being removed when the RCFC port is changed.
220823	Prevents diagnostic logs from consuming large amounts of space on the controller node drives when <code>updatevv</code> or defragmentation is running on the array.
221218	In a Remote Copy or Peer Persistence configuration, a missing heartbeat can result in an unexpected controller node restart. This issue is resolved.
221491	Inter-node I/O transfers deplete and do not return CMP resources leading to host I/O stalls.
221881	Replacing an SSD drive causes an incorrect recalculation of the cache limit which can result in a progressive performance impact.
222014	Corrects an issue that incorrectly identifies a failing control cache DIMM on StoreServ 20000 systems.
222711	Prevents a potential deadlock situation during controller node integration.
223365	After properly shutting down the array, if a power regulator issue prevents a controller node from booting, the array will not boot because it is waiting for the missing controller node with the failed regulator to boot.
224354	Deletion of snapshots associated with a deduplicated volume can leave extraneous snapshot deletion entries which prevents subsequent deduplication garbage collection and can result in an unexpected controller node restart.
224575	Prevents an unexpected array restart due to a memory inconsistency when using a 16 Gb FC adapter.
224665 217322 202755	Prevents unexpected node restart when a defrag IO thread incorrectly processes the clean CMP page having dedup information set.

Table Continued

Issue ID	Description
225198	An uninitialized variable used in processing QoS domain rules can lead to repeated restarts of the System Manager.
226306	Prevents an unexpected controller node restart that can occur if the 16Gb FC driver attempts to send Generic Service commands while its local port is in the "offline" state.
226724	While tuning a TDVV the System Manager may restart if the source LD isn't in use by a VV.
227187	Prevents the situation where multiple failed https authentication challenges are not responded to by the client causing the controller node filesystem to become full.
228015 225657 220522	Addresses an issue on arrays that consume a large amount of space in fully provisioned volumes, leading to performance degradation which can eventually result in host I/O timeouts.
228027	Corrects an issue where the array startup configuration information cannot be read after the array has been shutdown.
230086 189152	When inconsistent array startup configuration information is encountered by the System Manager, the System Manager repeatedly restarts preventing the array from starting.

Affected components

Component	Version
System Manager	3.2.2.724 (P98)
TPD Kernel Patch	3.2.2.724 (P98)
CIM Server	3.2.2.724 (P98)
Network Controller	3.2.2.724 (P98)
Per-Node Server	3.2.2.724 (P98)
TOC Server	3.2.2.724 (P98)
VV Check Tools	3.2.2.724 (P98)

NOTE:

- Applying an HPE 3PAR OS patch can cause a restart of the affected OS components. When components are restarted, events and alerts are generated and this is an expected behavior. The system continues to serve data, but existing CLI or SSMC sessions could be interrupted
 - When displaying the `showversion` command output from the SP, the CLI Client version is fixed in the SP code and might differ from the output displayed from any other system.
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Verification

The installation of P98 can be verified from an interactive CLI session. Issue the `showversion -a -b` CLI command to verify that P98 is listed:

Release version 3.2.2.612 (MU4)

Patches: P56, P59, P85, P92, P94, **P98**, P101

Component Name	Version
CLI Server	3.2.2.712 (P94)
CLI Client	3.2.2.712
System Manager	3.2.2.724 (P98)
Kernel	3.2.2.612 (MU4)
TPD Kernel Code	3.2.2.642 (P59)
TPD Kernel Patch	3.2.2.724 (P98)
CIM Server	3.2.2.724 (P98)
WSAPI Server	3.2.2.612 (MU4)
Console Menu	3.2.2.612 (MU4)
Event Manager	3.2.2.612 (MU4)
Internal Test Tools	3.2.2.612 (MU4)
LD Check Tools	3.2.2.612 (MU4)
Network Controller	3.2.2.724 (P98)
Node Disk Scrubber	3.2.2.612 (MU4)
PD Scrubber	3.2.2.612 (MU4)
Per-Node Server	3.2.2.724 (P98)
Persistent Repository	3.2.2.612 (MU4)
Powerfail Tools	3.2.2.612 (MU4)
Preserved Data Tools	3.2.2.612 (MU4)
Process Monitor	3.2.2.626 (P56)
Rolling Upgrade Tools	3.2.2.612 (MU4)
Software Updater	3.2.2.712 (P94)
TOC Server	3.2.2.724 (P98)
VV Check Tools	3.2.2.724 (P98)
File Persona	1.2.4.3-20170601 (P85)
SNMP Agent	1.8.0
SSH	6.6p1-4~bpo70+1
VASA Provider	2.2.10
Firmware Database	3.2.2.718 (P101)
Drive Firmware	3.2.2.718 (P101)
UEFI BIOS	04.08.38
MCU Firmware (OKI)	4.8.29
MCU Firmware (STM)	5.2.53
Cage Firmware (DC1)	4.44
Cage Firmware (DC2)	2.64
Cage Firmware (DC3)	08
Cage Firmware (DC4)	2.64

Cage Firmware (DCN1)	4078
Cage Firmware (DCN2)	4078
Cage Firmware (DCS1)	4078
Cage Firmware (DCS2)	4078
Cage Firmware (DCS5)	1.93
Cage Firmware (DCS6)	1.93
Cage Firmware (DCS7)	4078
Cage Firmware (DCS8)	4078
QLogic QLA4052C HBA Firmware	03.00.01.77
QLogic QLE8242 CNA Firmware	04.15.08
QLogic 8300 HBA FC Firmware	08.01.05
QLogic 8300 HBA FCoE Firmware	08.01.05
QLogic 8300 HBA iSCSI Firmware	05.07.06
Emulex LP11002 HBA Firmware	02.82.x10
Emulex LPe12002 HBA Firmware	02.03.x11
Emulex LPe12004 HBA Firmware	02.03.x11
Emulex LPe16002 HBA Firmware	10.6.248.4
Emulex LPe16004 HBA Firmware	10.6.248.4
3PAR FC044X HBA Firmware	200A8
LSI 9201-16e HBA Firmware	17.11.00
LSI 9205-8e HBA Firmware	17.11.00
LSI 9300-8e HBA Firmware	07.00.00

Websites

General websites

Hewlett Packard Enterprise Information Library

www.hpe.com/info/EIL

Single Point of Connectivity Knowledge (SPOCK) Storage compatibility matrix

www.hpe.com/storage/spock

Storage white papers and analyst reports

www.hpe.com/storage/whitepapers

For additional websites, see **[Support and other resources](#)**.

Support and other resources

Accessing Hewlett Packard Enterprise Support

- For live assistance, go to the Contact Hewlett Packard Enterprise Worldwide website:
<http://www.hpe.com/assistance>
- To access documentation and support services, go to the Hewlett Packard Enterprise Support Center website:
<http://www.hpe.com/support/hpesc>

Information to collect

- Technical support registration number (if applicable)
- Product name, model or version, and serial number
- Operating system name and version
- Firmware version
- Error messages
- Product-specific reports and logs
- Add-on products or components
- Third-party products or components

Accessing updates

- Some software products provide a mechanism for accessing software updates through the product interface. Review your product documentation to identify the recommended software update method.
- To download product updates:

Hewlett Packard Enterprise Support Center

www.hpe.com/support/hpesc

Hewlett Packard Enterprise Support Center: Software downloads

www.hpe.com/support/downloads

Software Depot

www.hpe.com/support/softwaredepot

- To subscribe to eNewsletters and alerts:
www.hpe.com/support/e-updates
- To view and update your entitlements, and to link your contracts and warranties with your profile, go to the Hewlett Packard Enterprise Support Center **More Information on Access to Support Materials** page:

! IMPORTANT:

Access to some updates might require product entitlement when accessed through the Hewlett Packard Enterprise Support Center. You must have an HPE Passport set up with relevant entitlements.

Customer self repair

Hewlett Packard Enterprise customer self repair (CSR) programs allow you to repair your product. If a CSR part needs to be replaced, it will be shipped directly to you so that you can install it at your convenience. Some parts do not qualify for CSR. Your Hewlett Packard Enterprise authorized service provider will determine whether a repair can be accomplished by CSR.

For more information about CSR, contact your local service provider or go to the CSR website:

<http://www.hpe.com/support/selfrepair>

Remote support

Remote support is available with supported devices as part of your warranty or contractual support agreement. It provides intelligent event diagnosis, and automatic, secure submission of hardware event notifications to Hewlett Packard Enterprise, which will initiate a fast and accurate resolution based on your product's service level. Hewlett Packard Enterprise strongly recommends that you register your device for remote support.

If your product includes additional remote support details, use search to locate that information.

Remote support and Proactive Care information

HPE Get Connected

www.hpe.com/services/getconnected

HPE Proactive Care services

www.hpe.com/services/proactivecare

HPE Proactive Care service: Supported products list

www.hpe.com/services/proactivecaresupportedproducts

HPE Proactive Care advanced service: Supported products list

www.hpe.com/services/proactivecareadvancedsupportedproducts

Proactive Care customer information

Proactive Care central

www.hpe.com/services/proactivecarecentral

Proactive Care service activation

www.hpe.com/services/proactivecarecentralgetstarted

Warranty information

To view the warranty for your product or to view the *Safety and Compliance Information for Server, Storage, Power, Networking, and Rack Products* reference document, go to the Enterprise Safety and Compliance website:

www.hpe.com/support/Safety-Compliance-EnterpriseProducts

Additional warranty information

HPE ProLiant and x86 Servers and Options

www.hpe.com/support/ProLiantServers-Warranties

HPE Enterprise Servers

www.hpe.com/support/EnterpriseServers-Warranties

HPE Storage Products

www.hpe.com/support/Storage-Warranties

HPE Networking Products

www.hpe.com/support/Networking-Warranties

Regulatory information

To view the regulatory information for your product, view the *Safety and Compliance Information for Server, Storage, Power, Networking, and Rack Products*, available at the Hewlett Packard Enterprise Support Center:

www.hpe.com/support/Safety-Compliance-EnterpriseProducts

Additional regulatory information

Hewlett Packard Enterprise is committed to providing our customers with information about the chemical substances in our products as needed to comply with legal requirements such as REACH (Regulation EC No 1907/2006 of the European Parliament and the Council). A chemical information report for this product can be found at:

www.hpe.com/info/reach

For Hewlett Packard Enterprise product environmental and safety information and compliance data, including RoHS and REACH, see:

www.hpe.com/info/ecodata

For Hewlett Packard Enterprise environmental information, including company programs, product recycling, and energy efficiency, see:

www.hpe.com/info/environment

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