



**Hewlett Packard**  
Enterprise

# **HPE 3PAR OS 3.3.1 MU1 Upgrade Instructions**

## **Abstract**

The instructions in this guide are for qualified technicians authorized by Hewlett Packard Enterprise to upgrade storage system software. Authorized technicians include Hewlett Packard Enterprise field engineers, partners and channel partners, certified self-maintaining customers, and authorized third-party field technicians. This document is for Hewlett Packard Enterprise internal and partner use only.

Part Number: QL226-99684  
Published: August 2017  
Edition: 1

## Notices

The information contained herein is subject to change without notice. The only warranties for Hewlett Packard Enterprise products and services are set forth in the express warranty statements accompanying such products and services. Nothing herein should be construed as constituting an additional warranty. Hewlett Packard Enterprise shall not be liable for technical or editorial errors or omissions contained herein.

Confidential computer software. Valid license from Hewlett Packard Enterprise required for possession, use, or copying. Consistent with FAR 12.211 and 12.212, Commercial Computer Software, Computer Software Documentation, and Technical Data for Commercial Items are licensed to the U.S. Government under vendor's standard commercial license.

Links to third-party websites take you outside the Hewlett Packard Enterprise website. Hewlett Packard Enterprise has no control over and is not responsible for information outside the Hewlett Packard Enterprise website.

## Acknowledgments

Google™ is a trademark of Google Inc.

Linux® is a trademark of Linus Torvalds in the U.S. and other countries.

Microsoft®, Windows®, and Hyper-V® are either registered trademarks or trademarks of Microsoft Corporation in the United States and/or other countries.

Mozilla® and Firefox® are trademarks of Mozilla Incorporated.

Red Hat® is a trademark of Red Hat, Inc. in the United States and other countries.

UNIX® is a registered trademark of The Open Group.

VMware®, VMware® ESX®, VMware® ESXi™, VMware® vCenter™, and VMware vSphere® are U.S. registered trademarks of VMware, Inc.

## Documentation

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

# Contents

- Introduction ..... 4**
  
- Supported Update Types and Paths..... 8**
  
- Update the HPE 3PAR OS from versions 3.2.1, 3.2.2..... 11**
  - Pre-installation requirements..... 11
    - Verify the SP software version ..... 11
    - Update the SP..... 13
  - Stage the HPE 3PAR OS onto the SP via Physical Media..... 13
  - Stage HPE 3PAR OS through the 3PAR Service Tools and Technical Support (STaTS)..... 13
  - Deploy the HPE 3PAR OS to the SP via Secure Service Architecture..... 14
  - HPE 3PAR OS Update Task Overview..... 14
  - Pre-update tasks..... 15
    - Verify the HPE 3PAR OS Software Level..... 15
    - Verify the storage system health..... 15
    - Perform Validation Routines..... 16
  - Update the HPE 3PAR OS Online..... 18
  - Update the HPE 3PAR OS Offline..... 20
  - Update the HPE 3PAR OS using SPOCC..... 23
  - Update the SP from version 4.5 to 5.0.1..... 25
  - Update back-end components using SP 5.0.1..... 26
  - HPE 3PAR OS update checklist from 3.2.1, 3.2.2..... 26
  
- Update the HPE 3PAR OS from versions 3.3.1 GA, EGA ..... 28**
  - Pre-installation requirements..... 28
  - Verify the SP software version ..... 28
  - Update the SP..... 28
  - Stage HPE 3PAR OS through the 3PAR Service Tools and Technical Support (STaTS)..... 28
  - Deploy the HPE 3PAR OS to the SP via Secure Service Architecture..... 29
  - HPE 3PAR OS Update Task Overview..... 30
  - Pre-update tasks..... 30
    - Verify the HPE 3PAR OS release level..... 30
    - Verify the storage system health ..... 30
  - Update the HPE 3PAR OS Online, Offline..... 31
  - HPE 3PAR OS update checklist from 3.3.1..... 33

# Introduction

The purpose of this document is to provide instructions to complete a field upgrade to HPE 3PAR OS 3.3.1 Maintenance Update 1 with the *HPE 3PAR OS Release 3.3.1 MU1* media. Performing an online update requires extensive planning. Review the latest version *HPE 3PAR Upgrade Planning Guide* before performing an online update. This and other documents can be viewed at the Hewlett Packard Enterprise Support Center at [www.hpe.com/support/hpesc](http://www.hpe.com/support/hpesc).

Customer Self Upgrade (CSU) from HPE 3PAR OS 3.2.1 or 3.2.2 to OS 3.3.1 is not supported due to the complexity of the upgrade process.

The HPE 3PAR OS version running on a storage system can be upgraded onsite with physical media by a service technician. The service technician can remotely access Secure Service Architecture (SSA) to deploy a self-install package and upgrade the storage system software.

---

## CAUTION:

A File Persona patch installation is required immediately following the HPE 3PAR OS upgrade to use File Persona. Do not perform file services related tasks or administrative operations until this patch is installed.

---

## NOTE:

All references to SPMAINT are using SSH or serial port connectivity. SPMAINT on the web [Service Processor Onsite Customer Care (SPOCC) interface] might have different menu options.

---

The Service Processor (SP) must be upgraded to and running SP 4.5 MU1 to perform an upgrade to HPE 3PAR OS 3.3.1 MU1 from 3.2.1 or 3.2.2.

1. If the SP version is less than 4.1.0:

Upgrade to SP 4.1.0 (MU2) using *HPE 3PAR Service Processor Software 2.5.x Upgrade Instructions* and proceed to steps 2 and 3.

2. If the SP version is greater than 4.1.0 (MU2) and less than 4.3.0:

Upgrade to SP 4.3.0 using *HPE 3PAR Service Processor Software 4.3.0 Upgrade Instructions* and proceed to step 3.

3. If the SP version is greater 4.3.0 or 4.4.0:

Upgrade to version 4.5 MU1 first and then to version 5.0.1.

---

## NOTE:

HPE 3PAR StoreServ Management Console must be at version 2.2. HPE 3PAR Management Console must be at version 4.7.1.

A Service Processor enabled with Secure Network Mode can be updated onsite either by using a physical media or by a self-install package type available via SSA.

---

HPE 3PAR OS update packages include updates for components including the OS, BIOS, cage firmware, and drive firmware. Individual component updates are applied if the current software and hardware configuration is operating below the version levels included in the update package.

This OS update package includes the following versions of the OS components and BIOS.

**Table 1: Components and Versions**

<b>Component</b>	<b>Version</b>
Maintenance Update	3.3.1.269 (MU1)
Patches	P07
CLI Server	3.3.1.269 (MU1)
CLI Client	3.3.1.269
System Manager	3.3.1.269 (MU1)
Kernel	3.3.1.269 (MU1)
TPD Kernel Code	3.3.1.269 (MU1)
CIM Server	3.3.1.269 (MU1)
WSAPI Server	3.3.1.269 (MU1)
Console Menu	3.3.1.269 (MU1)
Event Manager	3.3.1.269 (MU1)
Internal Test Tools	3.3.1.269 (MU1)
LD Check Tools	3.3.1.269 (MU1)
Network Controller	3.3.1.269 (MU1)
Node Disk Scrubber	3.3.1.269 (MU1)
PD Scrubber	3.3.1.269 (MU1)
Per-Node Server	3.3.1.269 (MU1)
Persistent Repository	3.3.1.269 (MU1)
Powerfail Tools	3.3.1.269 (MU1)
Preserved Data Tools	3.3.1.269 (MU1)
Process Monitor	3.3.1.269 (MU1)
Software Updater	3.3.1.269 (MU1)
TOC Server	3.3.1.269 (MU1)
VV Check Tools	3.3.1.269 (MU1)

*Table Continued*

<b>Component</b>	<b>Version</b>
Upgrade Check Scripts	170811.U008
File Persona	1.4.0.78-20170713 (P07)
SNMP Agent	1.10.0
SSH	6.0p1-4+deb7u5
VASA Provider	3.0.14 (MU1)
Firmware Database	3.3.1.269 (MU1)
Drive Firmware	3.3.1.269 (MU1)
UEFI BIOS	05.02.54 (MU1)
MCU Firmware (OKI)	4.8.60 (MU1)
MCU Firmware (STM)	5.3.17 (MU1)
Cage Firmware (DC1)	4.44 (MU1)
Cage Firmware (DC2)	2.64 (MU1)
Cage Firmware (DC3)	08 (MU1)
Cage Firmware (DC4)	2.64 (MU1)
Cage Firmware (DCN1)	4082 (MU1)
Cage Firmware (DCN2)	4082 (MU1)
Cage Firmware (DCS1)	4082 (MU1)
Cage Firmware (DCS2)	4082 (MU1)
Cage Firmware (DCS5)	2.79 (MU1)
Cage Firmware (DCS6)	2.79 (MU1)
Cage Firmware (DCS7)	4082 (MU1)
Cage Firmware (DCS8)	4082 (MU1)
QLogic QLA4052C HBA Firmware	03.00.01.77 (MU1)
QLogic QLE8242 CNA Firmware	04.15.27
QLogic 260x HBA FC Firmware	174.03.70

*Table Continued*

Component	Version
QLogic 27xx/268x HBA FC Firmware	174.03.70
QLogic 83xx HBA FCoE Firmware	08.01.05
QLogic 8300 HBA iSCSI Firmware	05.07.35
Emulex LP11002 HBA Firmware	02.82.x10
Emulex LPe12002 HBA Firmware	02.10.x03
Emulex LPe12004 HBA Firmware	02.10.x03
Emulex LPe16002 HBA Firmware	11.1.220.9
Emulex LPe16004 HBA Firmware	11.1.220.9
3PAR FC044X HBA Firmware	200A8
LSI 9201-16e HBA Firmware	17.11.03
LSI 9205-8e HBA Firmware	17.11.03
LSI 9300-8e HBA Firmware	10.10.01

---

**NOTE:**

- After completing the HPE 3PAR OS update, apply any relevant patches.
- Any system using the CLI or SNMP clients must be upgraded to the new levels.
- For information about using the SP and the SPMAINT utility, see the *HPE 3PAR Service Processor User Guide*.
- After completing the SP update from 4.5 MU1 to 5.0.1.0, apply the latest patch for SP-5.0.1.0.



**WARNING:**

After upgrading the HPE 3PAR OS to 3.3.1.MU1, upgrade the SP from version SP-4.5.0.GA-55 to 5.0.1 and perform post update tasks using SP-5.0.1.

---

# Supported Update Types and Paths

HPE 3PAR OS updates can be performed either online or offline. Online updates allow the hosts connected to the system to continue I/O activity, but for offline updates host I/O activity must be stopped. The following types of updates are supported:

- **Simple Update**
  - Used when the OS maintenance level changes. An update is applied to all the nodes and nodes reboot, one at a time, automatically.
- **Advanced Update**
  - Used when the OS maintenance level changes. An update is applied to all the nodes and user needs to reboot each node, one at a time, manually. Advanced update is only used in cases where a customer chooses to validate their environment before rebooting the next node. The duration of the pause between node reboots must be limited to 30 minutes.
- **Offline Update**
  - Used when the customer requests an offline update, or when the system is operating several levels below the update package version. An offline update requires that all hosts connected to the storage system be shut down before the OS update. All nodes are updated and then rebooted at the same time. The storage system is unavailable to the hosts during this operation.

**Table 2: Update Paths Supported**

Update from Current OS Level	Update to New OS Level
3.2.1.46 (GA) + P01	3.3.1.269 (MU1)
3.2.1.46 (GA) + P01 + Patches	3.3.1.269 (MU1)
3.2.1.46 (EGA)	3.3.1.269 (MU1)
3.2.1.46 (EGA) + Patches	3.3.1.269 (MU1)
3.2.1.120 (MU1)	3.3.1.269 (MU1)
3.2.1.120 (MU1) + Patches	3.3.1.269 (MU1)
3.2.1.120 (EMU1)	3.3.1.269 (MU1)
3.2.1.120 (EMU1) + Patches	3.3.1.269 (MU1)
3.2.1.200 (MU2)	3.3.1.269 (MU1)
3.2.1.200 (MU2) + Patches	3.3.1.269 (MU1)
3.2.1.200 (EMU2)	3.3.1.269 (MU1)
3.2.1.200 (EMU2) + Patches	3.3.1.269 (MU1)
3.2.1.292 (MU3)	3.3.1.269 (MU1)

*Table Continued*

<b>Update from Current OS Level</b>	<b>Update to New OS Level</b>
3.2.1.292 (MU3) + Patches	3.3.1.269 (MU1)
3.2.1.292 (EMU3)	3.3.1.269 (MU1)
3.2.1.292 (EMU3) + Patches	3.3.1.269 (MU1)
3.2.1.356 (MU4)	3.3.1.269 (MU1)
3.2.1.426 (MU5)	3.3.1.269 (MU1)
3.2.1.426 (MU5) + Patches	3.3.1.269 (MU1)
3.2.2.290 (EGA)	3.3.1.269 (MU1)
3.2.2.290 (EGA) + Patches	3.3.1.269 (MU1)
3.2.2.326 (MU1) + P16	3.3.1.269 (MU1)
3.2.2.326 (MU1) + P16 + Patches	3.3.1.269 (MU1)
3.2.2.390 (MU2)	3.3.1.269 (MU1)
3.2.2.390 (MU2) + Patches	3.3.1.269 (MU1)
3.2.2.390 (EMU2)	3.3.1.269 (MU1)
3.2.2.390 (EMU2) + Patches	3.3.1.269 (MU1)
3.2.2.530 (MU3)	3.3.1.269 (MU1)
3.2.2.530 (MU3) + Patches	3.3.1.269 (MU1)
3.2.2.612 (MU4)	3.3.1.269 (MU1)
3.2.2.612 (MU4) + Patches	3.3.1.269 (MU1)
3.2.2.612 (EMU4)	3.3.1.269 (MU1)
3.2.2.612 (EMU4) + Patches	3.3.1.269 (MU1)
3.3.1.215 (GA) + Patches	3.3.1.269 (MU1)
3.3.1.215 (EGA)	3.3.1.269 (MU1)

---

**NOTE:**

- Upgrade to HPE 3PAR OS 3.3.1 MU1 is supported on HPE 3PAR StoreServ 7000, 8000, 9000, 10000, 20000, and 20000 R2 Storage systems only.
- Direct upgrades from HPE 3PAR OS earlier than HPE 3PAR OS 3.2.1.46 (GA) are not supported.
- Direct upgrade from HPE 3PAR OS 3.2.1 (MU3) or later is supported on File Persona (FP) enabled systems.
- 9000 and 20000 R2 Storage systems are supported from HPE 3PAR OS 3.3.1 (EGA).
- The minimum Service Processor version that supports upgrading from HPE 3PAR OS 3.3.1.215 (GA)+P01+P02 or 3.3.1.215 (EGA) to 3.3.1 MU1 is Service Processor (SP) 5.0.1.0 + latest SP patch.

See the *HPE 3PAR Service Processor Support Matrix* available at Single Point of Connectivity Knowledge (SPOCK) website at <http://www.hpe.com/storage/spock>. Select **3PAR** under the **Other Hardware** menu. Locate **Other HPE 3PAR Support Matrices**. The *HPE 3PAR Service Processor Support Matrix* is located under this menu.

---

# Update the HPE 3PAR OS from versions 3.2.1, 3.2.2

## Pre-installation requirements

Before updating to HPE 3PAR OS 3.3.1, stop all system administration activities and leave them stopped while performing an HPE 3PAR OS online upgrade. This includes any provisioning activity, physical or virtual copy activity, and snap removal and dynamic optimization, but excludes stopping Remote Copy or Remote Copy groups. All active tasks must complete or be stopped before proceeding.

Minimum prerequisite patches:

- 3.2.2-MU4 P56 and P59
- 3.2.2-MU3+P52, P55, and P70
- 3.2.2-MU2+P38, P46, and P71
- 3.2.1-MU5+P53 and P55
- 3.2.1-MU3 + P52
- 3.2.1-MU2+P13 and P36
- 3.2.1-MU1 P15

---

### NOTE:

- HPE 3PAR 3.2.2 EGA Patch 43 must be installed prior to upgrading from HPE 3PAR 3.2.2 EGA to a later version.
  - HPE 3PAR 3.2.2 MU1 Patch 37 must be installed prior to upgrading from HPE 3PAR 3.2.2 MU1 to a later version.
  - Not all prerequisite patches may be available at the time of this document's publication.
- 

After upgrading to HPE 3PAR OS 3.3.1 MU1, you must upgrade the SP to version 5.0.1.0.

## Verify the SP software version

The SP must be updated to the required SP software. To verify the version of SP software running on the SP for the system you are updating, log on to the SPMAINT utility to display the SP version.

---

### NOTE:

The SP version must be at SP 4.5.0.GA-55 or later to continue with this HPE 3PAR OS update.

---

## Procedure

1. Connect to the SP.
2. From the SPMAINT main menu, enter: =1.1 (Display SP Version).
3. Verify that the SP version entry displays **SP-4.5.0.GA-55** plus the latest patch (if applicable).
4. Example output for SP software:

```
SP Software Version
```

```
SP-4.5.0.GA-55
```

```
SP Base Image Version: Red Hat Enterprise Linux Server release 6.7 (Santiago)
SP Version: 4.5.0.GA-55
```

```
SP Patches:
HP 3PAR OS release (3.2.2):
HP 3PAR OS patches (3.2.2):
HP 3PAR OS release (3.3.1):      3.3.1.269-MU1
More detail is available in the latest SPLOR or spconfig data.
```

Press <enter/return> to continue

5. If the SP software version does not meet the requirements for this HPE 3PAR OS update, you must update the SP software before continuing with the HPE 3PAR OS update installation.
6. From the SPMAINT main menu, enter =1.13 (Display SP Status). Save the SP status output by logging the session. You will require this output to compare it with the post-upgrade SP status after you install the OS.
7. Confirm that the following basic processes are running.

### Table 3: Example of Basic SP Processes

The following global procedures are running:

```
/sp/prod/code/csst/bin/spcollect
/sp/prod/code/csst/bin/SPcommctlr
/sp/prod/code/csst/bin/spevent
/sp/prod/code/csst/bin/SPnetmon
/sp/prod/code/csst/bin/SPtransfer
/sp/prod/code/csst/bin/stAnalyze
/sp/prod/code/csst/bin/stBackDoor
/sp/prod/code/csst/bin/stGrpNot
/sp/prod/code/csst/bin/STlogger
/sp/prod/code/csst/bin/stMonitor
/sp/prod/code/csst/bin/stNotify
```

There are 10 httpd server processes running

spevent is running for the following clusters:  
<StoreServ\_serial\_number> (<StoreServ\_name>)

spcollect processes are running as follows:

```
adlc      for <StoreServ_serial_number> (<StoreServ_name>)
biosmsg   for <StoreServ_serial_number> (<StoreServ_name>)
config    for <StoreServ_serial_number> (<StoreServ_name>)
eeprom    for <StoreServ_serial_number> (<StoreServ_name>)
environ   for <StoreServ_serial_number> (<StoreServ_name>)
evtlog    for <StoreServ_serial_number> (<StoreServ_name>)
memdata   for <StoreServ_serial_number> (<StoreServ_name>)
perfdb    for <StoreServ_serial_number> (<StoreServ_name>)
perform   for <StoreServ_serial_number> (<StoreServ_name>)
status    for <StoreServ_serial_number> (<StoreServ_name>)
```

SSAgent run status -  
agent is running

Press <enter/return> to continue

8. To return to the previous menu, press the **Enter** key.

## Update the SP

To update the SP software level before installing the maintenance update, install it from physical media.

## Stage the HPE 3PAR OS onto the SP via Physical Media

To stage the HPE 3PAR OS update from *HPE 3PAR OS Release 3.3.1 MU1* media onto the SP:

### Procedure

1. Insert the media into the SP media drive.
2. From the SPM<sub>MAINT</sub> main menu, enter: `=1.16.2` (Update SP Software Revision).
3. Enter the number corresponding to the media drive and then enter: `y` at the prompt.
4. After the message `Stage successfully completed` is displayed, press **Enter** to return to the SPM<sub>MAINT</sub> main menu.
5. Enter: `=1.1` (Display SP Version).
6. Verify that the `HP 3PAR OS release (3.3.1)` entry displays **3.3.1.269-MU1**.
7. Enter: `=1.13` (Display SP status).
8. Compare the post-upgrade SP processes with the pre-upgrade SP processes listed before you applied the OS. For an example of the basic list, see Table 3 in [Verify the SP software version](#).
9. If the basic SP processes are running, you can now install the OS on the storage system.
10. If the basic SP processes differ after the installation, see the *HPE 3PAR Service Processor Software Troubleshooting Guide*.
11. Remove the media from the media drive and store it in a safe place.

## Stage HPE 3PAR OS through the 3PAR Service Tools and Technical Support (STaTS)

### Procedure

1. Connect to STaTS by providing the following address in a supported browser: <https://stwebint.houston.hpecorp.net>. Log in with valid STaTS HPE credentials.
2. Locate and click the **SUPPORT** tab.
3. Click **Deployment Manager**.
4. Select **RDA as Deployment Channel** from the drop-down list.
5. Click **Start a New Deployment**.
6. On the Deployment Manager — Launch a New Deployment page, select **OS-3.3.1.269-MU1-auto\_deploy** from the Package to Deploy drop-down list.
7. Select **SP** from the Deployment Target drop-down list.
8. To display the list of all available assets, click **Search/Refresh**.
9. From the Available Assets table, select the asset to which you wish to deploy the package, and then click **Deploy**.
10. Review the confirmation information, and then click **OK** to install the update on the SP.
11. To check the status of the update deployment, use the Deployment Manager — View Deployment History page of the STaTS. To refresh the page, click **Filter/Refresh**.
12. (Optional) Click **RDA Deployment ID** to get more log information about the ongoing deployment.
13. (Optional) Click **Device ID** to get more details about the selected asset.
14. Repeat the steps 4 to 13 for Upgrade Tool OS-4.2.0.17-U008.
15. After verifying that the deployment is complete, exit the session and log off from STaTS.

# Deploy the HPE 3PAR OS to the SP via Secure Service Architecture

---

## NOTE:

The following procedure is only for internal use and must be performed by an authorized administrator.

---

The OS-3.3.1.269-MU1 can be staged to the SP via the HPE 3PAR Secure Service Architecture database.

---

## ⚠ CAUTION:

Do NOT use a collector server remote session to connect the SP to perform an update. The connection resets during the update and might result in failure. The SP might require a rebuild of the software when an update fails.

Ensure that all SPMAINT sessions are terminated before deploying a package. Otherwise, the deployment will fail.

---

## NOTE:

Close SPMAINT consoles before deploying Secure Service Collector packages.

---

## Procedure

1. Establish a connection and log on to SSA.
  2. Click the **Software** tab in the top right corner.
  3. Click **Deploy packages to assets over the internet**.
  4. Search and select the package for HPE 3PAR OS 3.3.1.269-MU1 and click **Next**.
  5. In the Select Assets table, select the MP device to which you want to download the package, and then click **Add Checked**.
  6. Click **Next**.
  7. Select the **Schedule package for immediate deployment** option, and then click **Next**.
- 

**NOTE:** Select the **Schedule for later deployment** option only when specified by the customer. Ensure that a proper date and time values are specified.

---

8. To receive notifications as the package deploys, select the appropriate notification options, enter your contact information, and then click **Next**.
  9. Review the confirmation information, and then click **Deploy**.
  10. To check the status of the deployment, use the Package Deployment Manager. To refresh the page, press F5.
- 

## NOTE:

It can take several hours to deliver the package from SSA to the SP.

---

11. Repeat the steps 2 to 10 for Upgrade Tool OS-4.2.0.17-U008.
12. After the deployment is complete, exit the session and log off.

## HPE 3PAR OS Update Task Overview

The HPE 3PAR OS update process includes the following phases:

Pre-update tasks:

1. [Verify the HPE 3PAR OS Software Level](#) on page 15
2. [Verify the storage system health](#) on page 15
3. [Perform Validation Routines](#) on page 16

Update tasks:

1. [Update the HPE 3PAR OS Online](#)
2. [Update the HPE 3PAR OS Offline](#)
3. [Update the HPE 3PAR OS using SPOCC](#)

Post-update tasks:

1. [Update the SP from version 4.5 to 5.0.1](#) on page 25
2. [Update back-end components using SP 5.0.1](#) on page 26

A task checklist is available, see the [HPE 3PAR OS update checklist from 3.2.1, 3.2.2](#).

---

**NOTE:**

Connections between CLI clients and the system might terminate during the update process. To maintain a CLI connection with the system during the update process, you must start an interactive CLI session with the SPMAINT utility.

---

For more information, see the *HPE 3PAR Service Processor Software 5.0.x User Guide* available at the [Hewlett Packard Enterprise Information Library](#) website.

## Pre-update tasks

The following tasks must be performed before starting the HPE 3PAR OS update process.

### Verify the HPE 3PAR OS Software Level

The current HPE 3PAR OS level must meet the supported update path requirements.

To verify the HPE 3PAR OS level currently running on the storage system:

1. Start a CLI session from the SPMAINT main menu, enter =7 and then press **Enter**.
2. Select the desired storage system (StoreServ).
3. To display the HPE 3PAR OS version, patch information, and the version numbers of other system components, enter `showversion -a -b`. Verify that the HPE 3PAR OS version in the output meets the supported update path requirements in [Supported Update Types and Paths](#).
4. Enter `exit` and then press **Enter** to return to the SPMAINT main menu.

### Verify the storage system health

Before starting the HPE 3PAR OS update, determine the current status and verify the overall health of the system with the SPMAINT utility.

#### Procedure

1. From the SPMAINT main menu, enter =4 . 4, and then press **Enter**.
2. Enter the number corresponding to the HPE 3PAR StoreServ Storage system you want to run the Health Check on, and then press **Enter**.
3. Enter `y` to retrieve and transfer the check health data, and then press **Enter**.

```
Are you sure you want to retrieve and transfer
the check health data for StoreServ <StoreServ_Name>?
```

```

(y or n)
y
...
16:44.51 Checking health of alert
16:44.52 Checking health of cabling
16:44.52 Checking health of cage
16:44.53 Checking health of date
16:44.54 Checking health of file
16:44.55 Checking health of ld
16:44.56 Checking health of license
16:44.56 Checking health of network
16:44.57 Checking health of node
16:44.59 Checking health of pd
16:45.05 Checking health of pdch
16:45.06 Checking health of port
16:45.14 Checking health of rc
16:45.14 Checking health of snmp
16:45.15 Checking health of sp
16:45.15 Checking health of task
16:45.16 Checking health of vlun
16:45.16 Checking health of vv

```

4. After the health check completes gathering the data, the SP displays a list of files to view.

```

4.4.2 Show latest health check status from StoreServ

Available files

1      ==>    /sp/prod/data/files/1300338/status/110420.101029.all
2      ==>    /sp/prod/data/files/1300338/status/110420.101029.det
3      ==>    /sp/prod/data/files/1300338/status/110420.101029.err
4      ==>    /sp/prod/data/files/1300338/status/110420.101029.sum

0      ==>    Abort Operation

Please select a file to display

```

5. To view the available files, type the corresponding number and then press **Enter** to continue.
6. Select the number corresponding to the data file with the `.all` extension and press **Enter**. After the file is reviewed, press **Enter** to continue, and then select option 0 to exit health check.

---

**NOTE:**

The SPMAINT utility uses the `more` command to view files. Press the **spacebar** to move to the next page. After viewing the contents of the file, to exit press **Enter** then select 0 (Abort Operation) to return to the previous menu. After you return to the previous menu, the report is discarded. To view the health status again, run the health check again.

---

7. Review and correct any exceptions before performing an HPE 3PAR OS update.

## Perform Validation Routines

---



**WARNING:**

In case of a failure of any test, a case must be escalated to HPE 3PAR Authorized Support Provider so that issues, if any, might be corrected before the HPE 3PAR OS update. Failure to resolve an issue before the software update might cause unpredictable results.

---

To perform validation routines:

## Procedure

1. From the SPMAINT main menu, check the status of the system on which validation routines are to be performed. To check the status of the system, enter: =4 . 7 . 1 on the SPMAINT main menu and press **Enter**.

```
4.7.1 StoreServ Upgrade Status
      Configured StoreServs
1      ==> <StoreServ_name> --> <StoreServ_serial_number>
0      ==> Abort Operation

Please select a StoreServ to operate on
```

2. Select the system and press **Enter**.

```
4.7.1 StoreServ Upgrade Status

StoreServ: <StoreServ_name>
Current Version: 3.2.1.46

Upgrade Status:

System is not currently undergoing an online upgrade.
First node to be rebooted is node 3
Which will be followed by node 0
Which will be followed by node 2
Which will be followed by node 1

**MESSAGE: START State, No TPD upgrade in progress
**STATE:0
```

3. Press **Enter** to continue.
4. From the SPMAINT main menu, validate the system to ensure it is capable of performing an online update. To validate the system, enter: =4 . 7 . 2 on the SPMAINT main menu and press **Enter**.

```
4.7.2 Validate Upgrade Status
      Configured StoreServs
1      ==> <StoreServ_name> --> <StoreServ_serial_number>
0      ==> Abort Operation

Please select a StoreServ to operate on
```

5. Select the system to perform the pre-validation scripts on, and then press **Enter**.
6. Any problems discovered during the pre-validation checks must be resolved and then pre-validation checks must be repeated.

```
4.7.2 Validate Upgrade Status
The StoreServ will perform a series of checks to verify that it is ready to be updated.
Please be patient, this process will take approximately 30 seconds to 20 minutes.

-- Test Name ----- [ RESULT ] -
Check Local          [ PASSED ]
Check PD             [ PASSED ]
Check Upgrade        [ PASSED ]
Check VV            [ PASSED ]
Check Cluster Name Exists [ PASSED ]
```

```
<system_name> is in an acceptable state to perform a software upgrade
total_scripts: 5 passed: 5 failed: 0
```

Press <enter/return> to continue

7. Press **Enter** to continue.

## Update the HPE 3PAR OS Online

This procedure updates the HPE 3PAR OS while the customer is actively using the storage system. A complete understanding of all the host connectivity is required and proper planning must be completed before performing an online update.

For planning assistance, review the *HPE 3PAR OS Upgrade Planning Guide*. To obtain a copy of this documentation, go to the Storage Information Library.

---

### NOTE:

- Verify all pre-update tasks are completed before proceeding with the online update.
- All hosts must meet the online update requirements in the *HPE 3PAR OS Upgrade Planning Guide* for 3.3.1 version. Any hosts not meeting the requirements must be shut down or logically disconnected before attempting an online update.
- All hosts must be compatible to the current applicable *HPE 3PAR Host Implementation Guide* and *HPE 3PAR Configuration Matrix*.
- For hosts using Veritas VxVM as the multi-pathing solution, the Veritas link restore interval needs to be set before attempting an online update. For more information about this, see the *HPE 3PAR Upgrade Planning Guide*.

---

To update the HPE 3PAR OS running on a storage system:

### Procedure

1. From the SPMAINT main menu, enter: **=4 . 7 . 3**, and select the storage system to be upgraded.
2. Select the appropriate option for *Simple Upgrade* or *Advanced Upgrade*, and then press **Enter**.
3. Hewlett Packard Enterprise recommends that *Advanced Upgrade* be used only by qualified technicians authorized by Hewlett Packard Enterprise to upgrade storage system software.
4. Select the new HPE 3PAR OS version to use to update the system, select menu option for *3.3.1.269-MU1* and press **Enter**. To proceed with the update, enter: **y** and enter the five digit number when prompted.

---

### NOTE:

On FP enabled StoreServ, enter answer **y**, when prompted as follows:

The HPE 3PAR File Persona is enabled on this system. Depending on the file protocols and features in use, proceeding with a simple upgrade may result in the disconnection of client sessions.

Are you certain you wish to proceed?

(y or n)

After you answer **y** and enter the five-digit number, you can not stop the update process.

- 
5. The online update tests run and display the results.
  6. If any tests fail, you must enter the displayed five digit number to confirm and continue.

---

**NOTE:**

Any test failure must be corrected before proceeding with the HPE 3PAR OS upgrade. Bypassing any test error is not recommended, and may only be done if the test results, and any potential impact on the system upgrade and hosts is clearly understood and acknowledged.

---

7. Read all prompts. Answer *yes* at the final prompt to begin the update process.
- 

**NOTE:**

CLI connections are terminated in either of the following scenarios:

- A controller node with the active Ethernet interface reboots and another controller node takes over the active Ethernet interface
- Transition to a new workspace

CLI connectivity is automatically reestablished by the SP.

---

**NOTE:**

If onsite, monitor the controller node LED indicators for the cluster status.

---

8. After the update process is completed, press **Enter** to return to the SPMAINT menu. Verify the health of the storage system.
9. To start a CLI session from the SPMAINT main menu, enter: **7**, select the number associated with the StoreServ and press **Enter**.
10. To set the maintenance mode, answer *y* or *n* at the following prompt:

```
Do you wish to turn ON maintenance mode for StoreServ before performing any
CLI operations?
```

11. To verify that all nodes are in an OK state and InCluster, enter: `shownode`.

```
cli% shownode
Node --Name- -State- Master InCluster -Service_LED -LED- Control Mem(MB) Data Mem(MB) Cache Available(%)
0 <StoreServ_serial_number>-0 OK Yes Yes off GreenBlnk 4096 12288 100
1 <StoreServ_serial_number>-1 OK No Yes off GreenBlnk 4096 12288 100
2 <StoreServ_serial_number>-2 OK No Yes off GreenBlnk 4096 12288 100
3 <StoreServ_serial_number>-3 OK No Yes off GreenBlnk 4096 12288 100
```

12. Issue `showversion -a -b` command to verify the system is running HPE 3PAR OS 3.3.1.269 (MU1).

```
cli% showversion -a -b
Release version 3.3.1.269 (MU1)
Patches: P07

Component Name          Version
CLI Server              3.3.1.269 (MU1)
CLI Client              3.3.1.269
System Manager          3.3.1.269 (MU1)
Kernel                 3.3.1.269 (MU1)
TPD Kernel Code        3.3.1.269 (MU1)
CIM Server              3.3.1.269 (MU1)
WSAPI Server           3.3.1.269 (MU1)
Console Menu           3.3.1.269 (MU1)
Event Manager          3.3.1.269 (MU1)
Internal Test Tools    3.3.1.269 (MU1)
LD Check Tools         3.3.1.269 (MU1)
Network Controller     3.3.1.269 (MU1)
Node Disk Scrubber     3.3.1.269 (MU1)
PD Scrubber            3.3.1.269 (MU1)
Per-Node Server        3.3.1.269 (MU1)
Persistent Repository  3.3.1.269 (MU1)
Powerfail Tools        3.3.1.269 (MU1)
Preserved Data Tools   3.3.1.269 (MU1)
Process Monitor        3.3.1.269 (MU1)
Software Updater       3.3.1.269 (MU1)
```

```

TOC Server 3.3.1.269 (MU1)
VV Check Tools 3.3.1.269 (MU1)
Upgrade Check Scripts 170811.U008
File Persona 1.4.0.78-20170713 (P07)
SNMP Agent 1.10.0
SSH 6.0p1-4+deb7u5
VASA Provider 3.0.14 (MU1)
Firmware Database 3.3.1.269 (MU1)
Drive Firmware 3.3.1.269 (MU1)
UEFI BIOS 05.02.54 (MU1)
MCU Firmware (OKI) 4.8.60 (MU1)
MCU Firmware (STM) 5.3.17 (MU1)
Cage Firmware (DC1) 4.44 (MU1)
Cage Firmware (DC2) 2.64 (MU1)
Cage Firmware (DC3) 08 (MU1)
Cage Firmware (DC4) 2.64 (MU1)
Cage Firmware (DCN1) 4082 (MU1)
Cage Firmware (DCN2) 4082 (MU1)
Cage Firmware (DCS1) 4082 (MU1)
Cage Firmware (DCS2) 4082 (MU1)
Cage Firmware (DCS5) 2.79 (MU1)
Cage Firmware (DCS6) 2.79 (MU1)
Cage Firmware (DCS7) 4082 (MU1)
Cage Firmware (DCS8) 4082 (MU1)
QLogic QLA4052C HBA Firmware 03.00.01.77 (MU1)
QLogic QLE8242 CNA Firmware 04.15.27
QLogic 260x HBA FC Firmware 174.03.70
QLogic 27xx/268x HBA FC Firmware 174.03.70
QLogic 83xx HBA FCoE Firmware 08.01.05
QLogic 8300 HBA iSCSI Firmware 05.07.35
Emulex LP11002 HBA Firmware 02.82.x10
Emulex LPe12002 HBA Firmware 02.10.x03
Emulex LPe12004 HBA Firmware 02.10.x03
Emulex LPe16002 HBA Firmware 11.1.220.9
Emulex LPe16004 HBA Firmware 11.1.220.9
3PAR FC044X HBA Firmware 200A8
LSI 9201-16e HBA Firmware 17.11.03
LSI 9205-8e HBA Firmware 17.11.03
LSI 9300-8e HBA Firmware 10.10.01
s1101 cli%

```

---

**NOTE:**

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 on another system.

- 
13. Enter: `exit`, and then press **Enter** to return to the SPMAINT main menu.
  14. Wait at least five minutes to ensure that the upgrade fully completes all associated tasks.

---

**NOTE:**

For hosts using Veritas VxVM as the multipathing solution, the Veritas link restore interval can be set back to the original value. For more information see the *HPE 3PAR Upgrade Planning Guide*.

---

**⚠ CAUTION:**

Update the SP to version 5.0.1 before proceeding. You cannot update back-end components while the SP is still at SP 4.5.0. Back-end components can be updated using SP 5.0.1 only.

- 
15. **Update the SP from version 4.5 to 5.0.1** on page 25
  16. **Update back-end components using SP 5.0.1** on page 26

## Update the HPE 3PAR OS Offline

The offline update checks the HPE 3PAR OS versions for update compatibility requirements and installs any required patches. The update script is interactive and requires user input before performing the update. All nodes are updated and then rebooted at the same time.

---

**NOTE:**

- Verify all tasks are completed before proceeding with the offline update.
  - No host I/O activity is permitted during an offline update.
- 

To update the HPE 3PAR OS running on the storage system:

**Procedure**

1. To start a CLI session from the SPMAINT main menu, enter: **7**, select the number associated with the StoreServ and press **Enter**.
2. To set the maintenance mode, answer **y** or **n** at the following prompt:
3. Do you wish to turn ON maintenance mode for StoreServ before performing any CLI operations?
4. To verify that the host is inactive, enter: **statport -host -ni**. There should not be any Host ports entry in the list.

```
cli% statport -host -ni
r/w   I/O per second      KBytes per sec      Svt ms      IOSz KB
Port  D/C      Cur  Avg  Max  Cur  Avg  Max  Cur  Avg  Cur  Avg  Qlen
-----
total Data t      0   0      0   0      0.0  0.0  0.0  0.0  0.0  -
Press the enter key to stop...
```

5. To verify that physical copies are not in progress, enter: **showtask -all**.

```
cli% showtask -all
Id Type      Name                               Status Phase Step StartTime----- FinishTime----- Priority User---
2 system_task remove_expired_vvs               done   ---   --- 2015-07-31 10:27:00 PDT 2015-07-31 10:27:00 PDT n/a 3parsvc
3 system_task check_slow_disk                 done   ---   --- 2015-07-31 11:07:00 PDT 2015-07-31 12:03:01 PDT n/a 3parsvc
4 system_task checkIperfServer      done   ---   --- 2015-07-31 11:15:00 PDT 2015-07-31 11:15:00 PDT n/a 3parsvc
5 system_task remove_expired_vvs               done   ---   --- 2015-07-31 11:27:00 PDT 2015-07-31 11:27:01 PDT n/a 3parsvc
6 system_task check_slow_disk                 done   ---   --- 2015-07-31 12:07:00 PDT 2015-07-31 13:03:01 PDT n/a 3parsvc
7 system_task checkIperfServer      done   ---   --- 2015-07-31 12:15:00 PDT 2015-07-31 12:15:00 PDT n/a 3parsvc
8 system_task remove_expired_vvs               done   ---   --- 2015-07-31 12:27:00 PDT 2015-07-31 12:27:01 PDT n/a 3parsvc
9 system_task check_slow_disk                 done   ---   --- 2015-07-31 13:07:00 PDT 2015-07-31 14:03:01 PDT n/a 3parsvc
```

6. To return to the SPMAINT main menu, enter: **exit**.
    - a. Type **=4 . 5** and select the storage system (StoreServ) to reboot.
    - b. Type **a** to reboot all controller nodes and press **Enter**.
    - c. Type **y** to confirm system reboot and press **Enter**.
    - d. Type **y** to stop all I/O and reboot the system and press **Enter**.
- 

**NOTE:**

The CLI connection is terminated when the system reboots. Exit and restart the interactive CLI after the Storage Server reboots to establish a new session and then continue the process.

---

7. After the system successfully reboots, enter: **7** and press **Enter** to start a CLI session from the SPMAINT main menu.
8. Issue the **statport -host -ni** command to verify host is inactive. Host ports should not be listed.

```
cli% statport -host -ni
r/w   I/O per second      KBytes per sec      Svt ms      IOSz KB
Port  D/C      Cur  Avg  Max  Cur  Avg  Max  Cur  Avg  Cur  Avg  Qlen
-----
total Data t      0   0      0   0      0.0  0.0  0.0  0.0  0.0  -
Press the enter key to stop...
```

9. Type **exit** and press **Enter** to exit the interactive CLI and return to SPMAINT main menu to begin the HPE 3PAR OS offline update.
10. From the SPMAINT main menu, type **=4 . 7 . 3**, select the upgrade type as offline, then select the menu number corresponding to the system to update and press **Enter**.
11. Choose the option **3** for offline upgrade type and press **Enter**.

12. Select the menu number corresponding to 3.3.1.269-MU1 and press **Enter**.

```
4.7      StoreServ Upgrade

          Available OS levels

          1      ==>      3.3.1.269-MU1
          2      ==>      3.2.2.612-MU4
          3      ==>      3.2.2.530-MU3

          Select 0 to abort

          Please select an Software level to apply
```

13. The following confirmation message is displayed:

```
We are about to commence the offline upgrade on StoreServ <StoreServ_name>
to 3.3.1.269-MU1.

Offline updates require that all hosts connected to the StoreServ Storage
Server should be shutdown before the HP 3PAR OS update. Offline updates
are achieved by installing the new software on all the nodes in an
alternate location designated as the new software repository. During
this process the StoreServ will NOT be available.

Are you certain you wish to proceed?
(y or n)
y
```

14. Type **y** and then press **Enter**.
15. Type the five-digit number that is displayed to confirm update and press **Enter**.
16. For example: The duration of the update process varies depending on the system configuration.

```
Please re-enter the following number - 35789 (x to quit) :35789
```

17. When the update process is completed, press **Enter** to return to the SPMAINT main menu.
18. Verify the health of the storage system.
19. From the SPMAint menu, enter: =7 and then press **Enter** to start a CLI session from the SPMAINT main menu. Issue the `shownode` command to verify all controller nodes have rejoined the cluster.
20. Issue the `showversion -a -b` command to verify the system is running HPE 3PAR OS 3.3.1.269 (MU1).

```
cli% showversion -a -b
Release version 3.3.1.269 (MU1)
Patches: P07
Component Name          Version
CLI Server              3.3.1.269 (MU1)
```

21. Type `exit` and press **Enter** to exit the CLI session and return to the SPMAINT main menu.
22. At this point, wait at least five minutes to ensure the upgrade fully completes all associated tasks.



**WARNING:**

You must update the SP to version 5.0.1 before proceeding. You cannot update back-end components while the SP is still at SP 4.5.0. Back-end components can be updated using SP 5.0.1 only.

23. **Update the SP from version 4.5 to 5.0.1** on page 25
24. **Update back-end components using SP 5.0.1** on page 26

## Update the HPE 3PAR OS using SPOCC

The 3PAR OS can be updated to version 3.3.1.269-MU1 by using SPOCC. For information about supported browsers for SP, see SPOCK at <http://www.hpe.com/storage/spock>.

### Procedure

1. Connect to SPOCC with the SP IP address. Enter the SP IP address into a supported browser and login with a valid username and password.  
  
`https://<SP_IP_address>`
2. Click the **Support** tab and then click **Health Check**. A system health check is performed. View the report and resolve issues, if any.
3. To return to the SPOCC main page, click the **Home** tab.
4. Click the **Update** tab and then click **Update HP 3PAR OS**.
5. On the **Start** step click **Next**.

---

**NOTE:**

To exit the update interface at any time, click any of the tabs in the left navigation pane, or click Cancel to return to the SPOCC home page.

6. On the **Select OS version** step, select one of the following options, depending on the location of the OS version that you want to upgrade to:
  - **Pre-loaded**  
—By default, this option is selected and populated with the latest OS version that is available. The list includes all loaded updates and patches in addition to a Revert last patch option.
  - **ISO image**  
—This option enables you to browse to a local ISO image file.
  - **Service Processor DVD drive**  
—This option enables you to import the update from the SP's physical media drive.
  - **Location path**  
—(Hewlett Packard Enterprise authorized users only) This option enables Hewlett Packard Enterprise authorized users to specify the location path of a directory that contains the software RPMs.
7. Click **Next**.

---

**NOTE:**

If you selected the ISO image, Service Processor DVD drive, or Location path option, the load operation occurs automatically, and the OS software version is displayed as the Pre-loaded default option.

8. The review documentation and responsibilities page appears with links to the current 3PAR OS release notes, and the Support Center. Review the recommended documentation and best practices information. After reviewing the information, click the acknowledgment check box and then click **Next**.
9. On the **Select update method** step, select either **Online** or **Offline**, and then click **Yes** when prompted as follows:

Do you wish to continue with the upgrade?

---

**NOTE:**

- Hewlett Packard Enterprise recommends to use the online update method. The offline update method will cause service to be interrupted.
- The Offline option is unavailable, when applying a patch to the OS or reverting a patch. The Online option is unavailable, when reverting to the prior OS version.

- 
10. On the **Check hosts** step, review the persistent ports setting to verify that it is configured, and then click **Next**.

---

**NOTE:**

- The persistent ports feature helps to ensure that connectivity is not lost as nodes are rebooted during the online upgrade process. Hewlett Packard Enterprise recommends that this feature be configured.
- If the persistent ports feature is not configured correctly and you are performing an online update, you will need to compare your host configuration to the supported configurations that are listed on the SPOCK website.
- To export host data information in a CSV format that can be loaded into a spreadsheet, click **Export Host Data**.
- For more information about your persistent ports configuration, click **More on Persistent Ports**.

- 
11. On the **Validate StoreServ readiness** step, allow the checks to run, and review the results. You can view detailed results of the checks by clicking the **details** links. If issues are detected, you can resolve them and then click **Re-run Validation** to run the checks again without exiting this update interface.

12. Click **Next**.

13. On the **Install update** step, review the update version and options you selected, and then click **Install**.

**IMPORTANT:**

An update procedure cannot be canceled after it starts.

---

**NOTE:**

If an update installation is currently in progress, you will receive the following message:

```
The update process cannot proceed because an update is already in progress
```

In this case, click **OK** and you are redirected to the **Updating HP 3PAR OS** status page.

- 
14. On the **Updating HP 3PAR OS** status page, you can monitor the status of the update: in progress, successful, or failed. If the update fails, contact Hewlett Packard Enterprise support.

**WARNING:**

You must update the SP to version 5.0.1 before proceeding. You cannot update back-end components while the SP is still at SP 4.5.0. Back-end components can be updated using SP 5.0.1 only.

- 
15. **Update the SP from version 4.5 to 5.0.1** on page 25

16. **Update back-end components using SP 5.0.1** on page 26

# Update the SP from version 4.5 to 5.0.1

---

## CAUTION:

The upgrade will completely wipe the system's disk drives. Make sure that you have access to a 4.3 or 4.4 rescue file and a copy of the spconfig output. If the upgrade fails, your only option will be to rescue the 4.3 or 4.4 SP or perform a manual installation of the SP 5.0.1 release.

---

## IMPORTANT:

If firewall permissive mode is disabled, HTTPS port 8443 will be blocked after the upgrade to SP 5.0.0 or later. If the SP 4.5 firewall allowed access to specific hosts, only those hosts will be allowed access after the upgrade to 5.0.0 or later. To enable firewall permissive mode after the update, log in to the console as admin. The password will be the same as your current `3parcust` password.

---

## Prerequisites

- The SP must have file transfer enabled using Secure Network Mode unless configured as a Secure Site.
- If you are using a weekly scrubber, the scrubber must be disabled in SPOCC before doing the upgrade.
- The SP must be running SP-4.5.0.GA-55.
- The attached 3PAR StoreServ Storage system must be running 3PAR OS 3.3.1 MU1 or higher
- Hyper-V VSPs must be hosted by Windows Server 2012, 2012 R2, or 2016.
- All VSPs (Hyper-V and ESXi) must be configured with at least 4 GB of memory and at least 4 Virtual CPU cores.
- Upgrading the SP from 4.5 to 5.0.1 is only supported from SPMAINT using options 1->16->6.
- If you are using a Virtual SP, take a snapshot (ESXi) or a checkpoint (Hyper-V) of the system before you start the upgrade.
- Log in to the system console prior to starting the upgrade so you can monitor the upgrade process and view any error messages.

## Procedure

1. Use a serial or SSH connection to establish a connection to the SP.
2. From the SPMAINT main menu, enter **1** for **SP Control/Status**, and then press **Enter**.
3. Enter **16** for **Maintain SP Software**, and then press **Enter**.
4. Enter **6**, and then press **ENTER** to start the upgrade.
5. Enter **y** to begin the upgrade process.
6. After the system passes all checks required for the SP 5.0.1 upgrade, you will be prompted to confirm or cancel the upgrade. Enter **y** to upgrade the Service Processor.

Before any modifications are made to the 4.x system, the upgrade process will collect final SPCONFIG and RESCUE files and, if remote support is enabled, attempt to upload the two files to HPE support.

Several minutes will elapse and the SP will reboot itself three times.

---

## NOTE:

If you have a CLI session running, the session will terminate when the last controller node reboots. Reconnect to the StoreServ to reestablish a CLI session.

---

Upon a successful upgrade to SP 5.0.1, you will be able to access the HPE 3PAR Service Console at `https://<sp_ip_address>:8443`.

**!** **IMPORTANT:**

If there is not an explicit firewall rule to allow access to port 8443, then permissive firewall mode must be enabled. After permissive firewall mode is enabled, you can add a firewall rule to allow access, and then disable permissive mode.

To enable permissive mode:

1. Log in to the console as `admin` to access the Text-based User Interface (TUI).
2. Press **6** for the option `6 == Enable firewall permissive mode`.
3. Press **Enter**.

**More information:**

*HPE 3PAR Service Processor Software 4.3 and 4.4 to 5.0 Upgrade Instructions*

*HPE 3PAR Service Processor Software 5.0 User Guide*

## Update back-end components using SP 5.0.1

### Run `admithw`

Admit hardware admits new hardware into the system and updates firmware on new and existing hardware. It should be run after software updates are complete.

1. On the Service Console main menu, select **Systems**.
2. On the **Actions** menu, select **Admit Hardware**.
3. On the dialog that opens, click **Yes, Admit Hardware** to start the `admithw` task.

### Run `checkhealth`

1. On the Service Console main menu, select **Systems**.
2. On the **Actions** menu, select **Check health**.
3. Verify that the system does not have any issues.

**More information:**

*HPE 3PAR Service Processor Software 4.3 and 4.4 to 5.0.1 Upgrade Instructions*

*HPE 3PAR Service Processor Software 5.0.x User Guide*

### Prerequisites

The `admin` user-id cannot run Admit hardware on the selected system. You must be logged in as `hpepartner` or `hpesupport` to run Admit hardware on the storage system.

## HPE 3PAR OS update checklist from 3.2.1, 3.2.2

This checklist is provided as an assurance tool for the service technician. This checklist does not include important information about the update process. Do not attempt to update a storage system before reading the entire document.

Task	Description	Done
Pre-installation Requirements		
1	<u>Verify the SP software version</u>	

*Table Continued*

<b>Task</b>	<b>Description</b>	<b>Done</b>
2	<u><b>Update the SP</b></u>	
HPE 3PAR OS pre-update tasks		
3	<u><b>Verify the HPE 3PAR OS Software Level</b></u>	
4	<u><b>Verify the storage system health</b></u>	
5	<u><b>Perform Validation Routines</b></u>	
Update tasks		
6	<u><b>Update the HPE 3PAR OS Online</b></u>	
7	<u><b>Update the HPE 3PAR OS Offline</b></u>	
8	<u><b>Update the HPE 3PAR OS using SPOCC</b></u>	
Post-update tasks		
9	<u><b>Update the SP from version 4.5 to 5.0.1</b></u> on page 25	
10	<u><b>Update back-end components using SP 5.0.1</b></u> on page 26	

# Update the HPE 3PAR OS from versions 3.3.1 GA, EGA

## Pre-installation requirements

Before updating to HPE 3PAR OS 3.3.1 MU1, stop all system administration activities and leave them stopped while performing an HPE 3PAR OS online upgrade. This includes any provisioning activity, physical or virtual copy activity, and snap removal and dynamic optimization, but excludes stopping Remote Copy or Remote Copy groups. All active tasks must complete or be stopped before proceeding.

The minimum prerequisite patch is 3.3.1.GA+P01+P02.

---

**NOTE:**

Not all prerequisite patches may be available at the time of this document's publication.

---

## Verify the SP software version

If the minimum SP software level requirements are not met, update the SP software level before updating the HPE 3PAR OS.

1. Connect to **3PAR Service console** with [https://<sp\\_ip\\_address>:8443](https://<sp_ip_address>:8443) on a supported browser.

Enter the user name and password, then click **Login**. The **Service Processor Overview** screen appears.

---

**NOTE:**

The following browsers are supported:

- Microsoft Internet Explorer
- Microsoft Windows Edge
- Mozilla Firefox
- Google Chrome

To access the most current browser version information, see the *HPE 3PAR Service Processor Software 5.0 Release Notes* available at Single Point of Connectivity Knowledge for Hewlett Packard Enterprise Storage Products website at <https://h20272.www2.hpe.com/SPOCK/>.

---

2. Verify that in the **General** panel on the **Service Processor Overview** screen, the **Current Version** entry displays SP-5.0.1.0-23799 or later.

## Update the SP

To update the SP software level before installing the maintenance update, install it from physical media.

## Stage HPE 3PAR OS through the 3PAR Service Tools and Technical Support (STaTS)

### Procedure

1. Connect to STaTS by providing the following address in a supported browser: <https://stwebint.houston.hpecorp.net>. Log in with valid STaTS HPE credentials.
2. Locate and click the **SUPPORT** tab.
3. Click **Deployment Manager**.

4. Select **RDA as Deployment Channel** from the drop-down list.
5. Click **Start a New Deployment**.
6. On the Deployment Manager — Launch a New Deployment page, select **OS-3.3.1.269-MU1-auto\_deploy** from the Package to Deploy drop-down list.
7. Select **SP** from the Deployment Target drop-down list.
8. To display the list of all available assets, click **Search/Refresh**.
9. From the Available Assets table, select the asset to which you wish to deploy the package, and then click **Deploy**.
10. Review the confirmation information, and then click **OK** to install the update on the SP.
11. To check the status of the update deployment, use the Deployment Manager — View Deployment History page of the STaTS. To refresh the page, click **Filter/Refresh**.
12. (Optional) Click **RDA Deployment ID** to get more log information about the ongoing deployment.
13. (Optional) Click **Device ID** to get more details about the selected asset.
14. Repeat the steps 4 to 13 for Upgrade Tool OS-4.2.0.17-U008.
15. After verifying that the deployment is complete, exit the session and log off from STaTS.

## Deploy the HPE 3PAR OS to the SP via Secure Service Architecture

---

### NOTE:

The following procedure is only for internal use and must be performed by an authorized administrator.

---

The OS-3.3.1.269-MU1 can be staged to the SP via the HPE 3PAR Secure Service Architecture database.

---

### CAUTION:

Do NOT use a collector server remote session to connect the SP to perform an update. The connection resets during the update and might result in failure. The SP might require a rebuild of the software when an update fails.

Ensure that all SPMaint sessions are terminated before deploying a package. Otherwise, the deployment will fail.

---

### NOTE:

Close SPMaint consoles before deploying Secure Service Collector packages.

---

### Procedure

1. Establish a connection and log on to SSA.
2. Click the **Software** tab in the top right corner.
3. Click **Deploy packages to assets over the internet**.
4. Search and select the package for HPE 3PAR OS 3.3.1.269-MU1 and click **Next**.
5. In the Select Assets table, select the MP device to which you want to download the package, and then click **Add Checked**.
6. Click **Next**.
7. Select the **Schedule package for immediate deployment** option, and then click **Next**.

---

**NOTE:** Select the **Schedule for later deployment** option only when specified by the customer. Ensure that a proper date and time values are specified.

---

8. To receive notifications as the package deploys, select the appropriate notification options, enter your contact information, and then click **Next**.

9. Review the confirmation information, and then click **Deploy**.
10. To check the status of the deployment, use the Package Deployment Manager. To refresh the page, press F5.

---

**NOTE:**

It can take several hours to deliver the package from SSA to the SP.

---

11. Repeat the steps 2 to 10 for Upgrade Tool OS-4.2.0.17-U008.
12. After the deployment is complete, exit the session and log off.

## HPE 3PAR OS Update Task Overview

The HPE 3PAR OS update process includes the following phases:

Pre-update tasks:

1. **Verify the OS release level**
2. **Verify the storage system health**

Update tasks:

- **Update the HPE 3PAR OS Online, Offline**

A task checklist is available, see the **HPE 3PAR OS update checklist from 3.3.1**.

---

**NOTE:**

Connections between CLI clients and the system might terminate during the update process. To maintain a CLI connection with the system during the update process, you must start an interactive CLI session with the SPMAINT utility.

---

**More information:**

*HPE 3PAR Service Processor Software 5.0.x User Guide*

## Pre-update tasks

The following tasks must be performed before starting the HPE 3PAR OS update process.

### Verify the HPE 3PAR OS release level

#### Procedure

1. On the 3PAR Service Console main menu, select Systems. A list of all the storage systems available is displayed.

---

**NOTE:**

As of now, only one available system is displayed in this list.

---

2. Select the storage system to upgrade. An overview of the storage system selected is displayed.
3. Verify that for the selected storage system, in the General panel, the Current HPE 3PAR OS version entry displays 3.3.1.215 (GA)+P01+P02.

### Verify the storage system health

#### Procedure

1. On the **3PAR Service Console** main menu, select **Systems**.

The list of all the storage systems available is displayed.

---

**NOTE:**

As of now, only one available system is displayed in this list.

2. Select the storage system you want to upgrade. The overview of the storage system selected is displayed.
3. Click **Actions**, and then select **Check health**. Verify the health of the storage system.

Resolve health issues, if any, and then click **Close**.

## Update the HPE 3PAR OS Online, Offline

### Procedure

1. Open the **3PAR Service Console** main menu, and select **Systems**.

The list of all the storage systems available is displayed.

---

**NOTE:**

As of now, only one available system is displayed in this list.

2. Select the storage system you want to upgrade. It provides the overview of the storage system selected.
3. Load the Upgrade Tool OS-4.2.0.17-U008. Click **Actions**, and then select **Update HPE 3PAR OS**. The **Select Update** window appears. Select **Load a different update package**.

It provides the following three options to load the package:

- **ISO image**— Click the **Choose file** button and browse to a local ISO image file and click **Start upload** to upload the file.
- **Service Processor DVD drive**—This option enables you to import the update from the SP's physical media drive. Insert the media into the SP media drive and click **Start upload**.
- **Remote path**—(Hewlett Packard Enterprise authorized users only) This option enables Hewlett Packard Enterprise authorized users to specify the location of a directory that contains the software RPMs. Enter the remote path to the software package you want to load and click **Start upload**.

---

**NOTE:**

If you select the ISO image, Service Processor DVD drive, or Remote path option, after the load operation, the OS software package is displayed as the default in Available update package(s).

After the OS-4.2.0.17-U008 loads successfully, go to step 4.

---

**NOTE:**

OS-4.2.0.17-U008 is automatically installed when selected OS version that you want to upgrade to and Run Checks in step 6.

4. Click **Actions**, and then select **Update HPE 3PAR OS**. The **Select Update** window appears.
5. Select the OS version that you want to upgrade to from the **Available update package(s)**.

If the package is not available in the menu, select **Load a different update package**.

It provides the following three options to load package 3.3.1.269-MU1:

- **ISO image**— Click the **Choose file** button and browse to a local ISO image file and click **Start upload** to upload the file.
- **Service Processor DVD drive**— This option enables you to import the update from the SP's physical media drive. Insert the media into the SP media drive and click **Start upload**.
- **Remote path**— (Hewlett Packard Enterprise authorized users only) This option enables Hewlett Packard Enterprise authorized users to specify the location of a directory that contains the software RPMs. Enter the remote path to the software package you want to load and click **Start upload**.

---

**NOTE:**

If you select the ISO image, Service Processor DVD drive, or Remote path option, after the load operation; the OS software package is displayed as the default in **Available update package(s)**.

---

6. On the **Select Update** window, select **Online (default)**, **Advanced** or **Offline**.

**Online Update**

- Click **Run Checks** to load and run checks.
- After all of the checks complete successfully, click **Update**.
- If File Persona is enabled, it will prompt for confirmation. Enter **ONLINE** and click **Yes, Update**.

**Advanced Update**

- Click **Run Checks** to load and run checks.
- After all of the checks complete successfully, click **Update**.
- If File Persona is enabled, it will prompt for confirmation. Enter **ADVANCED** and click **Yes, Update**.

---

**NOTE:**

The Advanced Update method is not supported with customer user.

---

**Offline Update**

- Click **Run Checks** to load and run checks.
- After all of the checks complete successfully, click **Update**.
- At the confirmation screen, enter **OFFLINE** and click **Yes, Update**.

---

**NOTE:**

OS checkupgrade patch is automatically installed when you click on **Run Checks**. The check upgrade patch version will be obtained from the **Upgrade Check Scripts** component of the output from `showversion -a -b`.

---

---

 **IMPORTANT:**

An online or offline update procedure cannot be canceled after it starts.

---

**NOTE:**

- Hewlett Packard Enterprise recommends the online update method. The offline update method will cause service to be interrupted.
- Only the online option is available, when applying a patch to the OS or reverting a patch. Only the offline option is available, when reverting to the prior OS version.

- 
7. The **Customer Self Update Agreement** page is displayed. Read the agreement, and click **Agree** to proceed with the update.

The update starts. The status of the update is displayed on the screen. View the Details in the Update Dialogue. In Advanced update, click the **Resume** link before each node reboot and after all nodes reboot.

8. Monitor the progress of the update in the **Update View** window: Running, Completed, or Failed. If the update fails, contact Hewlett Packard Enterprise support.
9. After the update is completed successfully and **admithw** is completed, from the 3PAR Service Console menu, click **Systems** and select the system which is upgraded. Click **Actions** and then select **Start CLI session**. Enter **showversion -a -b** in the CLI command field and verify to verify the system is running 3.3.1.269 (MU1).

```
Release version 3.3.1.269 (MU1)
Patches: P07

Component Name          Version
CLI Server               3.3.1.269 (MU1)
CLI Client               3.3.1.269
System Manager           3.3.1.269 (MU1)
Kernel                   3.3.1.269 (MU1)
TPD Kernel Code          3.3.1.269 (MU1)
```

10. Verify the health of the storage system. To check health status, click **Actions** and then select **Check health**. Verify that the system does not have any issues and click **Close**. This completes the HPE 3PAR OS Update.

## HPE 3PAR OS update checklist from 3.3.1

This checklist is provided as an assurance tool for the service technician. This checklist does not include important information about the update process. Do not attempt to update a storage system before reading the entire document.

Task	Description	Done
Update the SP		
1	<u>Verify the SP software version</u>	
2	<u>Update the SP</u>	
HPE 3PAR OS pre-update tasks		
3	<u>Verify the OS release level</u>	
4	<u>Verify the storage system health</u>	
Update tasks		
5	<u>Update the HPE 3PAR OS Online, Offline</u>	