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Enterprise

HPE 3PAR OS 3.2.1 MU3 Patch 19 Upgrade Instructions

This upgrade instructions document is for installing Patch 19 on the HPE 3PAR Operating System Software 3.2.1.292 (MU3)+Patch 17+Patch 18. This document is for Hewlett Packard Enterprise INTERNAL AND PARTNER USE ONLY.

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Documentation

For the latest version of this document, go to the Services Access Workbench at <http://sawpro.atlanta.hp.com/km/saw/pmBrowse.do?oid=5044215>.

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1 Installation Checklist

Use this checklist as a guide for your upgrade:

Task	Reference	Done
1. Review the patch details and prerequisites.	“Review the Patch Details” (page 5)	
2. Verify that the service processor (SP) meets the requirements for installing this patch.	“Verify that the SP Meets Requirements” (page 6)	
3. Verify that the 3PAR OS release level supports this patch.	“Verify the OS release level” (page 8)	
4. Perform a health check on the storage system.	“Verify the storage system health” (page 8)	
5. Download and install the patch on the SP.	“Obtain and Install the Patch on the SP” (page 9)	
6. Install the patch on the 3PAR OS.	“Install the Patch on the 3PAR OS ” (page 11)	
7. Examine the patch results and review the patch details.	“Review the Patch Information” (page 17)	
8. Perform a final health check on the system.	“Complete Post-Installation Tasks” (page 18)	

2 Review the Patch Details

-
- △ CAUTION:** Installation and activation of this patch require that special steps be followed in sequence. Please read this entire document before proceeding.
-

The purpose of this patch is to improve drive error handling and drive error monitoring for specific HDD models: SEGLE0300GBFC15K, HVIPC0600GBFC15K, SEGLE0600GBFC15K, HVIPC0300GBFC15K, and SEGLE0450GBFC15K. This functionality is not enabled by default and must be enabled by an authorized Hewlett Packard Enterprise service provider.

Patch details

- SP prerequisite: SP-4.3.0.GA-24
- OS prerequisites: OS-3.2.1.292-MU3, 3.2.1 MU3 Patch 18, 3.2.1 MU3 Patch 17

Included in this patch

- Synopsis: Enhanced error handling reduces probability of multiple concurrent drive failures
- Affected Packages: tpd-kernelpatch, tpd-sysmgr, tpd-libcli, tpd-libhitachi, tpd-libgalaxy, tpd-libstec-mach-8, tpd-prerevert
- Obsoletes: None
- Build Version: 3.2.1.344

For more information, see the *HPE 3PAR OS 3.2.1 MU3 Patch 19 Release Notes*.

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

3 Verify that the SP Meets Requirements

Check the SP release level

1. Establish a connection to the SP.
2. From the SPMAINT main menu, enter: =1.1 (Display SP Version).
3. Verify that the SP Version entry displays **SP-4.3.0.GA-24** and SP Patches entry displays latest SP Patch.

```
1.1      Display SP Version

          SP Software Version

SP-4.3.0.GA-24;003

SP Base Image Version:      Red Hat Enterprise Linux Server release 6.1
(Santiago)

SP Version:                4.3.0.GA-24
SP Patches:                003
HP 3PAR OS release (3.2.1):  3.2.1.292-MU3
HP 3PAR OS patches (3.2.1):
More detail is available in the latest SPLOR or spconfig data.
```

4. From the SPMAINT main menu, enter: =1.13 (Display SP Status).
5. Confirm that the following basic processes are running. Save the SP status output. You will require this output to compare it with the post upgrade SP status after you install the patch.

Table 1 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/SPup2date
/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>)
```

Table 1 Example of Basic SP Processes *(continued)*

```
SSAgent run status -  
agent is running
```

6. To return to the previous menu, press **Enter**.

Update the SP

If the minimum SP software level requirements are not met, to update the SP software level before installing the patch, deploy from the Secure Service Collector server or install it from a physical media source.

4 Verify that the OS Meets Requirements

Before you install this patch, you must ensure that:

1. The 3PAR OS release level is 3.2.1.292.
2. The storage system completes a health check.

Verify the OS release level

1. From the SPMAINT main menu, to start the Interactive CLI, enter: 7.
2. Select the storage system you want to check.
3. Enter: `showversion -a -b`.
4. Verify that the `Release version` entry at the top of the list displays **3.2.1.292**, required for this patch.
5. To return to the SPMAINT main menu, enter: `exit` and then press **Enter**.

Verify the storage system health

Verify the health of the storage system with either Service Processor Onsite Customer Care (SPOCC) or SPMAINT.

- [“Using SPOCC to perform a health check” \(page 8\)](#)
- [“Using SPMAINT to perform a health check” \(page 8\)](#)

Using SPOCC to perform a health check

1. Launch a web browser and connect to an SP.
To connect to the SP Maintenance Ethernet port, enter: `https://<SP_IP_address>`.
2. Log in and click **Support** on the left side of the screen.
3. Click **Health Check** on the right side of the screen and a health check window appears.
4. Review the check health summary and details. If necessary, resolve any health issues.

Using SPMAINT to perform a health check

1. From the SPMAINT main menu, enter: `=4.4` (Perform InServ Health Check).
2. Select the storage system to check.
3. At the confirmation, enter: `y`.
The system lists health data files for each area of the system. Check for the file with the extension `.all`.
4. Enter the number corresponding to the `.all` data file.
5. Review the summary data.
To view each subsequent page, press the spacebar.
6. To exit the file, press the **Enter** key. To return to the previous menu, select 0 (Abort Operation).
After you return to the previous menu, the report is discarded. To view the health status again, run the health check again.
7. Resolve any health issues, if present.

5 Obtain and Install the Patch on the SP

NOTE: Controller node reboot is not required to install this patch.

Install the patch on the SP by using one of the following methods before installing the patch on the OS.

Determine the patch to use:	Obtain and install the patch:
If the SP is operating in Secure Network Mode (SNM), download the selfinstall patch from the Secure Service Collector.	“Deploying the patch from Secure Service Collector (selfinstall package)” (page 9)
If you are on-site, you can install the patch from the patch media.	“Installing the patch from physical media” (page 10)
To install the patch from an ISO image or to install pre-loaded or auto-deployed patch.	“Install the patch from SPOCC” (page 11)

Deploying the patch from Secure Service Collector (selfinstall package)

If the SP is operating in SNM, download and install the selfinstall version of the patch from the Secure Service Collector server.

NOTE: The following procedure must be performed by an authorized administrator.

1. If you are logged into SPMAINT via a DRM SSH session, log off.

⚠ CAUTION: Do **NOT** attempt to deploy a package to an SP while you are simultaneously logged into SPMAINT via DRM SSH.

2. Connect to the Secure Service Collector server and log on.
3. Click the **Software** tab in the upper right corner.
4. Click the **Deploy packages to assets over the Internet** link.
5. Select the OS-3.2.1.292-P19 selfinstall package and click **Next**.
6. In the **Select Assets** table, select the asset to which you want to download the package and click **Add Checked**.

NOTE: A selfinstall package deploys to MP devices.

7. Click **Next**.
8. Select **Schedule package for immediate deployment** and click **Next**.
9. To receive alerts to events as the package deploys, select the appropriate notification options, enter your contact information, and click **Next**.
10. Review the confirmation information. To install the patch on the SP, click **Deploy**.
11. Use the **Package Deployment Manager** to check the status of the patch deployment. To refresh the page, press **F5**.
12. Verify that the patch deployment is complete, and then exit the session and log off from the server.
13. From the SPMAINT main menu, enter: **=1.1** (Display SP Version).
14. Verify that the HP 3PAR OS patches (3.2.1) entry displays **3.2.1.292-P19**.
15. Enter: **=1.13** (Display SP status).

16. Compare the post-upgrade SP processes with the pre-upgrade SP processes listed before you applied the patch. For an example of the basic list, see the table [Example of Basic SP Processes \(page 6\)](#)

If the basic SP processes are running, you can install the patch on the storage system.

If the basic SP processes differ after the patch installation, see the *HPE 3PAR Service Processor Software Troubleshooting Guide*.

17. To return to the previous menu, press **Enter**.
18. To install the patch from SPOCC continue to [“Install the patch from SPOCC” \(page 11\)](#) or continue to [“Install the patch from SPMAINT” \(page 15\)](#).

Installing the patch from physical media

If you are installing the patch onsite, you can install the patch from the patch media.

1. Insert the *HPE 3PAR 3.2.1 MU3 P19 Software* media into the SP.
2. From the SPMAINT main menu, enter: =1.16.2 (Download/Stage SP/StoreServ Software Revision).
3. Enter the number corresponding to the media drive.
4. After the message *Stage successfully completed* is displayed, press **Enter** to return to the SPMAINT main menu.
5. Enter: =1.1 (Display SP Version).
6. Verify that the HP 3PAR OS patches (3.2.1) entry displays **3.2.1.292-P19**.
7. Compare the post-upgrade SP processes with the pre-upgrade SP processes listed before you applied the patch. For an example of the basic list, see the [Example of Basic SP Processes \(page 6\)](#).

If the basic SP processes are running, you can install the patch on the storage system.

If the basic SP processes differ after the patch installation, refer to the *HPE 3PAR Service Processor Software Troubleshooting Guide*.

8. Remove the media from the SP and place it in the storage system cabinet.
9. To install the patch from SPOCC continue to [“Install the patch from SPOCC” \(page 11\)](#) or continue to [“Install the patch from SPMAINT” \(page 15\)](#)

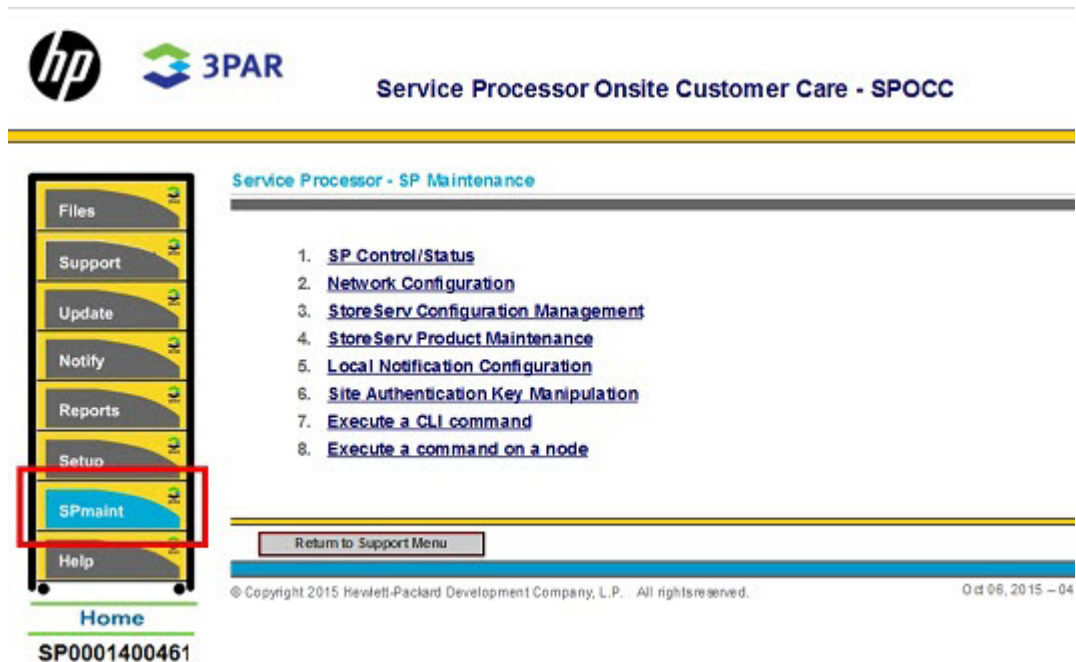
6 Install the Patch on the 3PAR OS

- △ **CAUTION:** Prior to installing this patch, a file must be placed on the StoreServ. This is only required if the customer has requested this patch to be activated. It is not necessary to place the file onto the StoreServ if the patch is not being activated, as is the case if the patch is installed solely as a prerequisite patch.

Install the patch from SPOCC

The 3PAR OS can be updated to version 3.2.1 Patch 19 by using SPOCC. For information about supported browsers for SP, see the Single Point of Connectivity Knowledge (SPOCK) website: <http://www.hpe.com/storage/spock>.

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.
- ① **IMPORTANT:** Before installing the patch from SPOCC, you must enable the CRC counting feature. Steps 5–7 are only required if the customer has requested this patch to be activated.
4. Select *SPmaint*.



5. Select option 8 to execute a command on a node.



Service Processor Onsite Customer Care - SPOCC

Service Processor - SP Maintenance

- 1. [SP Control/Status](#)
- 2. [Network Configuration](#)
- 3. [StoreServ Configuration Management](#)
- 4. [StoreServ Product Maintenance](#)
- 5. [Local Notification Configuration](#)
- 6. [Site Authentication Key Manipulation](#)
- 7. [Execute a CLI command](#)
- 8. [Execute a command on a node](#)

[Return to Support Menu](#)

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Home
SP0001400461

6. Ensure that you choose **all** nodes. Run the command `touch /common/enable_crc_count`.



Service Processor Onsite Customer Care - SPOCC

Service Processor - Execute a Command on a **s461** Node

Select Node: **node all** `touch /common/enable_crc_count` [submit](#)

`touch /common/enable_crc_count` ←

Node 0:
Node 1:

[SPMaint Main Menu](#)

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Home
SP0001400461

7. Verify that `/common/enable_crc_count` exists on **all** nodes.



Service Processor - Execute a Command on a s461 Node

Select Node: node all submit

ls /common/enable_crc_count

Node 0:
/common/enable_crc_count

Node 1:
/common/enable_crc_count

SPmaint Main Menu

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8. Use SPOCC to install P19. Follow normal staging and installation procedures.
9. Click the **Update** tab and then click **Update HP 3PAR OS**.
10. 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.

11. On the *Select OS version* step, select one of the following options, depending on the location of the OS Patch that you want to update to:
 - **Pre-loaded**—By default, this option is selected and populated with the latest OS software 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.

Click **Next**.

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

12. 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 acknowledgement checkbox and then click **Next**.
13. On the *Select update method* step, click **Next**.

NOTE: When you are applying a patch to the OS or reverting a patch, the Offline option is unavailable.

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

Click **Next**.

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

① **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

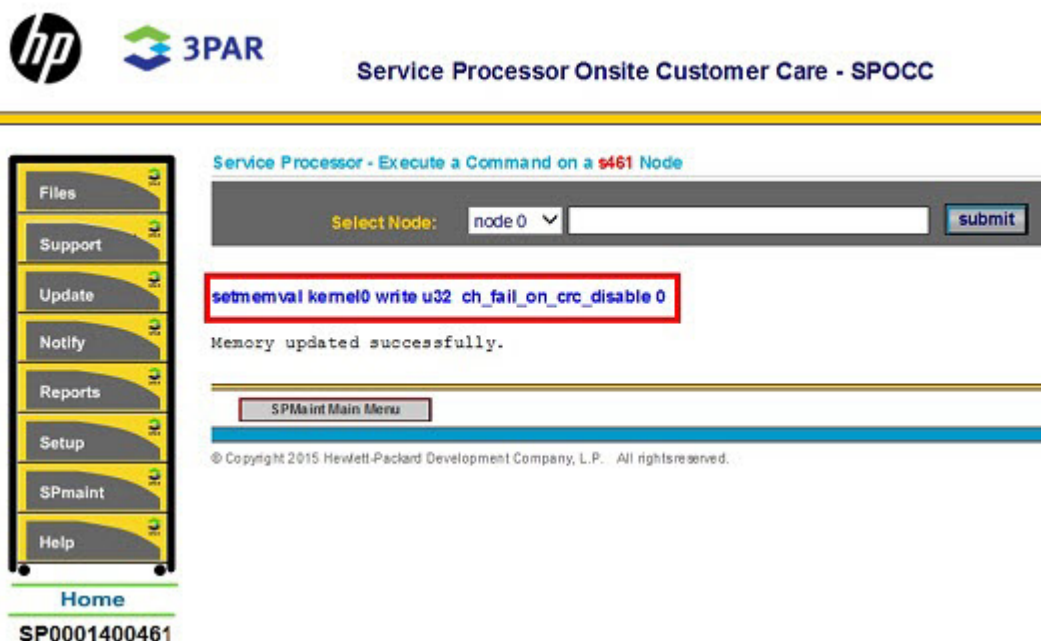
In this case, click **OK** and you are redirected to the **Updating HP 3PAR OS** status page.

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 Support.

16. After successful installation, to return to the SPOCC main page, click the **Home** tab.

△ **CAUTION:** Only perform steps 17 and 18 if the customer has requested that this patch be activated.

17. Select option 8 under SPMAINT. Choose a node and run the following command for each node in the cluster to verify `ch_fail_on_crc_disable` to 0 and turn on CRC counting:
- `setmemval kernel0 write u32 ch_fail_on_crc_disable 0`
 - `setmemval kernel1 write u32 ch_fail_on_crc_disable 0`
 - Where N is the node number, `setmemval kernelN write u32 ch_fail_on_crc_disable 0`
 - Continue to set the value, `ch_fail_on_crc_disable`, to 0 on all nodes in the cluster.



18. Verify P19 is activated. Run the following command for each node in the cluster to verify `ch_fail_on_crc_disable` is set to 0 (0=enabled, 1=disabled):

- `showmemval kernel0 read u32 1 ch_fail_on_crc_disable`
- `showmemval kernel1 read u32 1 ch_fail_on_crc_disable`
- Where N is the node number, `showmemval kernelN read u32 1 ch_fail_on_crc_disable`
- Continue verifying all nodes in the cluster has the value set to 0, then exit.



19. Continue to [“Review the Patch Information”](#) (page 17).

Install the patch from SPMAINT

❗ **IMPORTANT:** Before installing the patch from SPMAINT, you must enable the CRC counting feature. Steps 2–4 are only required if the customer has requested this patch to be activated.

1. Secure Shell (SSH) into the SP using the SPDOOD user account and run SPMAINT.
2. Select option 8 to execute a command on a node. Choose the StoreServ and select “a” for **all nodes**. Run the command `touch /common/enable_crc_count`.
3. Verify the touch file is in place on **all** nodes. Run the following command to verify the file `/common/enable_crc_count` is present: `ls /common/enable_crc_count`.
4. Exit.
5. Use SPMAINT to install P19. Follow normal staging and installation procedures.

Use SPMAINT to install the patch

1. From the SPMAINT main menu, enter: `=4.7.3`, and select the storage system to be upgraded.
2. Select the option for **Patch Upgrade**, and then press **Enter**.
3. Select the number associated with the patch (3.2.1.292-P19) to apply and then press **Enter**. To proceed with the update, enter: `y` and enter the auto-generated five digit number when prompted.

4. After the update process is completed, the output displays: `Update successful`. Verify that the `Patches` entry (under the `Patches :` entry) displays **P19**.

```
Release version 3.2.1.292 (MU3)
Patches: P19

Component Name          Version
System Manager          3.2.1.344 (P19)
TPD Kernel Patch        3.2.1.344 (P19)
CIM Server               3.2.1.312 (P17)
VV Check Tools          3.2.1.320 (P18)
VASA Provider           2.1.8 (P18)
.
.
.
```

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 from any other system.

5. If the correct patch is listed, the patch is successfully applied to the OS.

CAUTION: Only perform steps 6 and 7 if the customer has requested that this patch be activated.

6. In SPMAINT, select option 8 to execute a command on a node. Choose the StoreServ and select a node. Run the following command for each node in the cluster to set `ch_fail_on_crc_disable` to 0:
 - `setmemval kernel0 write u32 ch_fail_on_crc_disable 0`
 - `setmemval kernel1 write u32 ch_fail_on_crc_disable 0`
 - Where N is the node number, `setmemval kernelN write u32 ch_fail_on_crc_disable 0`
 - Continue to set the value, `ch_fail_on_crc_disable`, to 0 on all nodes in the cluster.
7. Verify P19 is activated. Run the following command for each node in the cluster to verify `ch_fail_on_crc_disable` is set to 0 (0=enabled, 1=disabled):
 - `showmemval kernel0 read u32 1 ch_fail_on_crc_disable`
 - `showmemval kernel1 read u32 1 ch_fail_on_crc_disable`
 - Where N is the node number, `showmemval kernelN read u32 1 ch_fail_on_crc_disable`
 - Continue verifying that all nodes in the cluster has the value set to 0, then exit.
8. Continue to [“Review the Patch Information” \(page 17\)](#).

7 Review the Patch Information

1. From the Interactive CLI, enter: `showpatch -d P19`

The output displays these details about the patch:

Entry	Description
Patch ID	P19
Synopsis	Enhanced error handling reduces probability of multiple concurrent drive failures
Date	September 28, 2015, 14:55:17 PDT
Description	See the Release Notes for details about this patch
Affected Packages	tpd-kernelpatch, tpd-sysmgr, tpd-libcli, tpd-libhitachi, tpd-libgalaxy, tpd-libstec-mach-8, tpd-prerevert
Obsoletes	None
Requires	OS-3.2.1.292-MU3+Patch 17+Patch 18
Build Version	3.2.1.344

For more information about the details of this patch, see [“Patch details” \(page 5\)](#).

2. Continue to [“Complete Post-Installation Tasks” \(page 18\)](#).

8 Complete Post-Installation Tasks

1. Complete a post-installation health check. For more information, see [“Verify the storage system health” \(page 8\)](#).
2. Notify the customer that the patch application is complete.