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## **HPE StoreOnce 3660, 5260, and 5660 Systems Maintenance and Service Guide**

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# HPE StoreOnce 3660, 5260, and 5660 Systems Maintenance and Service Guide

## Abstract

This document is the Maintenance and Service guide for the HPE StoreOnce 3660, 5260, and 5660 Systems. These products are single node StoreOnce Systems, running StoreOnce software version 4.3.0 or later. The architecture of StoreOnce systems is based upon established HPE hardware components, which have their own user and maintenance and service guides. This document provides information on only those aspects that are not covered in existing guides and assumes readers are already familiar with maintaining ProLiant servers and HPE Disk Enclosures products. All tasks described in this guide require an Administrator logon.

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## Part numbers lists for replacement parts

This guide is the Maintenance and Service Guide for HPE StoreOnce 3660, 5260, and 5660 systems. This guide supplements the following guides, which are the primary sources of information for hardware issues, and common spares part numbers and procedures:

- HPE ProLiant DL385 Gen 10 Plus Server Maintenance and Service Guide
- Maintaining and Upgrading HPE Primera 600

This HPE StoreOnce guide includes information that is unique to StoreOnce 3660, 5260, and 5660 systems and that is not included in the HPE ProLiant and Disk Enclosure documentation.

### Subtopics

#### [Hardware overview](#)

#### [HPE StoreOnce 3660 base server components](#)

#### [HPE StoreOnce 5260 base server components](#)

#### [HPE StoreOnce 5660 base server components](#)

#### [Optional hardware kit components](#)

#### [Capacity upgrade kit components](#)

## Hardware overview

HPE StoreOnce 3660, 5260, and 5660 systems are based on the following HPE ProLiant DL385 Gen10 Plus server models and HPE disk enclosures.

**Table 1. Identifying the HPE ProLiant server and Disk Enclosure models**

HPE StoreOnce System	ProLiant server model	Disk enclosure model
HPE StoreOnce 3660	DL385 Gen10 Plus 12LFF chassis	HPE Primera 600 LFF Dual IOM 2U Enclosure
HPE StoreOnce 5260	DL385 Gen10 Plus 12SFF chassis	HPE Primera 600 LFF Dual IOM 2U Enclosure
HPE StoreOnce 5660	DL385 Gen10 Plus 12SFF chassis	HPE Primera 600 LFF Dual IOM 2U Enclosure

### Subtopics

#### [Accessing HPE ProLiant server documentation](#)

#### [Accessing HPE disk enclosure documentation](#)

## Accessing HPE ProLiant server documentation

### About this task

For hardware issues on the HPE StoreOnce System server, the HPE ProLiant DL385 Gen10 Plus Server Maintenance and Service Guide is the primary source of information and common spares part numbers and procedures. The ProLiant server documentation provides more information about replaceable components and procedures that are standard for the ProLiant products. This HPE StoreOnce guide supplements the ProLiant server documentation.

### Procedure

1. Go to <http://www.hpe.com/support/hpesc>.

2. In Products & Solutions, select ProLiant Gen10 Plus.
3. In Models/Subcategories, select ProLiant DL385 Gen10 Plus Server .
4. In Information Types / File Types / Languages , select Service & Maintenance Guides .
5. Scroll through the guides and select the HPE ProLiant DL385 Gen10 Plus Server Maintenance and Service Guide .
6. Open the guide and look at the Illustrated Parts Catalogue to find parts that are missing from the standard HPE guide.

## Accessing HPE disk enclosure documentation

### About this task

For hardware issues on the HPE StoreOnce System enclosure, see the Maintaining and Upgrading HPE Primera 600 and for common spares part numbers and procedures. The HPE disk enclosure documentation provides more information about replaceable components and procedures that are standard for the enclosure products.

This HPE StoreOnce guide supplements the HPE disk enclosure documentation. It contains only information that is unique to StoreOnce 3660, 5260, and 5660 systems and not included in the enclosure documentation.

#### IMPORTANT:

If a part appears in both the standard HPE document and this StoreOnce document, the part number in this guide takes precedence as the correct part number for StoreOnce systems.

### Procedure

1. Go to <http://www.hpe.com/support/hpesc>.
2. Use search to locate the required information.
  - a. For information on HPE Primera 600, enter **HPE Primera 600** in the search box.
3. In **Content Type**, select the **Documents** check box.

## HPE StoreOnce 3660 base server components

This model is based on an HPE ProLiant DL385 Gen10 Plus 12LFF server. The following table contains the main components in the server, and spare part numbers that are not listed in the HPE ProLiant DL385 Gen10 Plus Server Maintenance and Service Guide .

Parts	Spares Part Number	Hot plug	CSR
System board	see ProLiant guide	No	No*
System air baffle	P24140-001	N/A	Yes
Processor, AMD EPYC 7262 3.2GHz	see ProLiant guide	No	No
Processor heatsink, standard	see ProLiant guide	No	No
Memory DIMM, 64GB Dual Rank x4 DDR4-3200	see ProLiant guide	No	Yes
Fan, high performance	see ProLiant guide	Yes	Yes
Power supply, 800W Flex Slot Platinum	see ProLiant guide	Yes	Yes
Embedded Smart Array P816i-a controller	804338-B21	No	Yes
HPE Smart Storage Battery, 96W (For P816i-a controller)	878643-001	No	Yes
PCI riser board, 2x8 x16 PCIe	see ProLiant guide	No	Yes
HPE DL Gen10 Plus 2x8 2x16 tertiary riser kit	see ProLiant guide	No	Yes

Parts	Spares Part Number	Hot plug	CSR
HPE Smart Array p408e-p SR Gen 10 12G SAS Controller, slot 6	804405-B21	No	Yes
OS HDD, 4TB SAS 12G 7.2K LFF	see ProLiant guide	Yes	Yes
Data HDD, 8TB SAS 12G 7.2k LFF	P44044-001	Yes	Yes
Drive blank, LFF	707300-001	N/A	Yes
Ball Bearing Rail Kit, 2U LFF	see ProLiant guide	N/A	Yes
OCP NIC 3.0 Adapter (Two 1GBE/10GBE Base-T ports)	P13345-001	No	Yes



**IMPORTANT:**

\* System board replacement requires HPE Support assistance to transfer the base server warranty information to the new component.

## HPE StoreOnce 5260 base server components

This model is based on an HPE ProLiant DL385 Gen10 Plus 12SFF Server. The following table contains the main components in the server, and spare part numbers that are not listed in the HPE ProLiant DL385 Gen10 Plus Server Maintenance and Service Guide .

Parts	Spares Part Number	Hot plug	CSR
System board	see ProLiant guide	No	No*
System air baffle	P24140-001	N/A	Yes
Processor, AMD EPYC 7302, 3.0GHz	see ProLiant guide	No	No
Processor heatsink, standard	see ProLiant guide	No	No
Memory DIMM, 64GB Dual Rank DDR4-3200	see ProLiant guide	No	Yes
Fan, Maximum Performance	see ProLiant guide	Yes	Yes
OCP NIC 3.0 Adapter (two 1GBE/10GBE Base-T ports)	See ProLiant guide	No	Yes
Bezel, 2U	875065-001	No	Yes
Power supply, 800W Flex Slot Platinum	see ProLiant guide	Yes	Yes
Embedded Smart Array P408i-p controller	see ProLiant guide	No	Yes
HPE Smart Storage Battery, 96W (for P408i-p controller)	P01366-B21	No	Yes
PCI riser board, 2x8 x16 PCIe	see ProLiant guide	No	Yes
HPE DL Gen10 Plus 2x8 2x16 tertiary riser kit	see ProLiant guide	No	Yes
HPE Smart Array P408e-p SR Gen 10 Controller, slots 3 and 6	804405-B21	No	Yes
OS SSD, 1.92TB SAS 12G SFF SC	P20834-001	Yes	Yes
Data SSD, 3.2TB SAS 12G SFF SC	P20840-001	Yes	Yes
Drive blank, SFF	875069-001	N/A	Yes
Ball Bearing Rail Kit, 2U SFF	see ProLiant guide	N/A	Yes
OCP NIC 3.0 Adapter (two 1GBE/10GBE Base-T ports)	P13345-001	No	Yes
Bezel, 2U	875065-001	No	Yes



**i IMPORTANT:**

\* System board replacement requires HPE Support assistance to transfer the base server warranty information to the new component.

## HPE StoreOnce 5660 base server components

This model is based on an HPE ProLiant DL385 Gen10 Plus 12SFF server. The following table contains the main components in the server, and spare part numbers that are not listed in the HPE ProLiant DL385 Gen10 Plus Server Maintenance and Service Guide .

Parts	Spares Part Number	Hot plug	CSR
System board	see ProLiant guide	No	No*
System baffle	P24140-001	N/A	Yes
Processor, AMD EPYC 7502 2.5GHz	see ProLiant guide	No	No
Processor heatsink, standard	see ProLiant guide	No	No
Memory DIMM, 64GB Dual Rank DDR4-3200	see ProLiant guide	No	Yes
Fan, Maximum Performance	see ProLiant guide	Yes	Yes
Power supply, 800W Flex Slot Platinum	see ProLiant guide	Yes	Yes
Embedded Smart Array P408i-a controller	see ProLiant guide	No	Yes
Embedded Smart Array P408i-p Controller	see ProLiant guide	No	Yes
HPE Smart Storage Battery, 96W (for P408i-p controller)	871264-001	No	Yes
PCI riser board, 2x8 x16 PCIe	see ProLiant guide	No	Yes
HPE DL Gen10 Plus 2x8 2x16 tertiary riser kit	see ProLiant guide	No	Yes
HPE Smart Array P408e-p SR Gen 10 Controller, slots 3 and 6	804405-B21	No	Yes
OS SSD, 1.92TB SAS 12G SFF SC	P20834-001	Yes	Yes
Data SSD, 6.4TB SAS 12G SFF SC	P20841-001	Yes	Yes
Drive blank, SFF	879065-001	N/A	Yes
Ball Bearing Rail Kit, 2U SFF	see ProLiant guide	N/A	Yes
OCP NIC 3.0 Adapter (two 1GBE/10GBE Base-T ports)	P13345-001	No	Yes
Bezel, 2U	875065-001	No	Yes

**i IMPORTANT:**

\* System board replacement requires HPE Support assistance to transfer the base server warranty information to the new component.

## Optional hardware kit components

The following table lists the spare part numbers for HPE StoreOnce Gen4 optional hardware. All parts listed in the table are supported in HPE StoreOnce 3660, 5260, and 5660 systems. When replacing optional hardware PCIe cards and/or SFP transceivers, only the faulty part must be replaced. For example, if a PCIe card has failed but the SFP transceivers are still good, the SFP transceivers may be reused with the replacement PCIe card.

**i IMPORTANT:**

If the replacement card is of the same type and is installed in the same slot, no reactivation or relicensing of the card is required.

Part	Spares part number	Hot plug	CSR
HPE Ethernet 10/25GbE 2-port 640SFP28 Adaptor	840140-001	No	Yes
HPE 10GbE SR SFP+ Transceiver	456096-001	Yes	Yes
HPE 25GbE SR SFP+ Transceiver	849442-001	Yes	Yes
HPE Ethernet 10GBASE-T 2-port 562T Adaptor	840137-001	No	Yes
HPE SN1100Q 16Gb 2-port FC Adaptor	853011-001	No	Yes
HPE 16Gb FC Transceiver	793443-001	Yes	Yes
HPE SN1600Q 32Gb 2-port FC Adaptor	868141-001	No	Yes
HPE 32Gb FC Transceiver	855071-001	Yes	Yes

## Capacity upgrade kit components

HPE StoreOnce system capacity may be expanded by adding enclosures with additional disks, depending on the configuration and current capacity of your installation.

### **i** IMPORTANT:

If there is a problem adding a Capacity Upgrade Kit for the first time, the whole kit must be replaced, not just the failed component. Unlike older StoreOnce models, StoreOnce Gen4 capacity upgrade kits are factory preconfigured for faster integration with no performance impact from storage parity initialization.

### Subtopics

[HPE StoreOnce 3660 96TB Capacity Upgrade Kit Components](#)

[StoreOnce 5260 and 5660 192TB Capacity Upgrade Kit Components](#)

## HPE StoreOnce 3660 96TB Capacity Upgrade Kit Components

### HPE StoreOnce 3660 96TB Capacity Upgrade Kit (R7M22A)

The HPE StoreOnce 3660 96TB Capacity Upgrade Kit (R7M22A) includes one HPE Primera 600 LFF capacity upgrade enclosure containing dual I/O modules and twelve 8TB HDD preconfigured disks.

Part	Spares part number	Hot plug	CSR
8TB HDD, 12G SAS 7.2k LFF	819199-001	Yes	Yes
SAS Cable, 1.0m	716195-B21	Yes	Yes
SAS Cable, 2.0m	716197-B21	Yes	Yes
I/O Module*	P04033-001	Yes	Yes
2U Enclosure, bare chassis	P04038-001	No	No
Rail Kit, 2U	P04042-001	NA	
Power Cooling Module	P04035-001		

**i** IMPORTANT: For the I/O module and in the HPE StoreOnce 3660 System capacity upgrade kit (R7M22A), only replace one component at a time and ensure that the enclosure is powered up for at least 5 minutes before replacing another component. This procedure is required to preserve the enclosure configuration stored in these components.

**NOTE:** StoreOnce capacity upgrade kits manufactured in the EU beginning on March 1, 2020 have 1200 watt power supplies to ensure that they meet the EU Lot 9 requirement. The change to 1200 watt power supplies has taken place

worldwide in second half of 2020. To ensure that you order the correct part number, check the spares part number and power rating label on the failed power supply.

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## StoreOnce 5260 and 5660 192TB Capacity Upgrade Kit Components

### HPE StoreOnce 5260 and 5660 192TB Capacity Upgrade Kit (R7M23A)

The HPE StoreOnce 5260 and 5660 192TB Capacity Upgrade Kit (R7M23A) includes one capacity HPE Primera 600 LFF upgrade enclosure containing dual I/O modules and twelve 16TB HDD preconfigured disks.

Part	Spares part number	Hot plug	CSR
16TB HDD, 12G SAS 7.2k LFF	P15760-004	Yes	Yes
SAS Cable, 1.0m	716195-B21	Yes	Yes
SAS Cable, 2.0m	716197-B21	Yes	Yes
I/O Module*	P04033-001	Yes	Yes
2U Enclosure, bare chassis	P04038-001	No	No
Rail Kit, 2U	P04042-001	NA	
Power Cooling Module	P04035-001		

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**i IMPORTANT:** For the I/O module and in the HPE StoreOnce 5260 and 5660 System capacity upgrade kit (R7M23A), only replace one component at a time and ensure that the enclosure is powered up for at least 5 minutes before replacing another component. This procedure is required to preserve the enclosure configuration stored in these components.

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**NOTE:** StoreOnce capacity upgrade kits manufactured in the EU beginning on March 1, 2020 have 1200 watt power supplies to ensure that they meet the EU Lot 9 requirement. The change to 1200 watt power supplies has taken place worldwide in second half of 2020. To ensure that you order the correct part number, check the spares part number and power rating label on the failed power supply.

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## Identify problems

When identifying problems, troubleshooting information is available from the following sources:

- The HPE StoreOnce Management Console
- The HPE StoreOnce REST API
- The HPE ProLiant Power-On Self-Test (POST)
- The HPE Integrate Lights Out (iLO)
- The HPE StoreOnce system status LEDs

### Subtopics

[POST messages and troubleshooting](#)

[Using the StoreOnce Management Console to identify a problem](#)

[Using the HPE Integrated Lights Out \(iLO\) to identify a problem](#)

[LEDs and problem diagnosis](#)

[HPE StoreOnce expansion shelf error messages](#)

## POST messages and troubleshooting

The HPE StoreOnce Management Console and REST API are the primary sources of troubleshooting information. However, they do not capture power-on self-test hardware-related issues. Always refer to the HPE ProLiant DL385 Gen10 Plus Maintenance and Service Guide for Power-On Self- Test (POST) information. To view POST messages, you will need to use the iLO Remote Console or a monitor and keyboard console attached to the HPE StoreOnce System.

## Using the StoreOnce Management Console to identify a problem

### About this task

The StoreOnce Management Console is supported on the following browsers:

- Internet Explorer
- Mozilla Firefox
- Google Chrome

For the most current compatibility information, see the [HPE StoreOnce Support Matrix](#). See [StoreOnce websites](#) for the link to this resource.

### Procedure


1. Log in to the StoreOnce Management Console.
2. On the main menu, select **Federation Dashboard** or **System Dashboard**.

These dashboards display status information about all systems (Federation dashboard) or an individual system (System dashboard).

3. Scroll down the dashboard to identify issues and click the links for more information.

The screenshot displays the HPE StoreOnce System Dashboard for system SO272604T4. The interface includes a left-hand navigation menu with options like Federation Dashboard, System Dashboard, Data Services, Reports, Event Log, Settings, and Help. The main content area is divided into several sections:

- Health Status:** A list of system components with their status: Data Services (OK), License (OK), User Storage (Warning), Hardware (Warning), and Remote Support (OK).
- System Information:** A table of system details including Name (SO272604T4), Platform Model (HPE StoreOnce 5650), System Time (6/9/2018 12:39:05), System Time Zone (UTC), Software Version (4.1.0-1830.38), and Serial Number(s) (2M272604T4).
- Data Services:** A section with four circular gauges showing the total count for each service type: Catalyst Stores (1 Store), Cloud Bank Stores (0 Store), VT Libraries (1 Library), and NAS Shares (1 Share). Each gauge is accompanied by a legend indicating the status (OK) and the count.

4. To view details of an event and recommended actions, click the event information icon (  ).
5. To view details of events and recommended actions, on the main menu select **Event Log**, and then click the event information icon.

Event Log		SO272604T4	
Description	Timestamp		
◆ The volume is degraded due to a failed or missing drive.	31/8/2018 17:41:40		(i)
◆ The drive is missing or has failed.	31/8/2018 17:41:40		(i)
◆ The power supply has failed.	30/8/2018 15:50:28		(i)
◆ Too many SCSI timeouts.	19/8/2018 3:24:12		(i)
● SMM: Housekeeping is enabled	17/8/2018 19:29:48		
◆ DNS lookup failed.	17/8/2018 19:22:52		(i)
◆ Due to the use, removal, or failure of a spare drive, there are no longer any spare drives available to the volume.	17/8/2018 19:14:59		(i)
● System SO272604T4 powered up.	16/8/2018 14:03:10		(i)
▲ Maintenance mode has been enabled.	15/8/2018 13:36:30		(i)

## Using the HPE Integrated Lights Out (iLO) to identify a problem

### About this task

HPE StoreOnce systems are built on HPE ProLiant DL385 Gen10 Plus servers with Integrated Lights Out 5 (iLO 5) technology. The iLO interface can be used to remotely monitor, manage, and diagnose issues with the StoreOnce system where the StoreOnce Management Console and REST API are not available. For more information, refer to the HPE iLO 5 User Guide.

### Procedure

1. Log in to the iLO web interface.
2. On the main menu, select System Information.
3. Select the tabs and review the Status on each page to identify issues.

Click the links for more information.

Subsystems and Devices	Status
Agentless Management Service	● OK
BIOS/Hardware Health	● OK
Fan Redundancy	● Redundant
Fans	● OK
Memory	● OK
Network	▲ Degraded
Power Status	● Redundant
Power Supplies	● OK
Processors	● OK
Smart Storage Battery Status	● OK
Storage	● OK
Temperatures	● OK

4. To view details of events and any recommended actions, on the main menu select Information, and then select the iLO Event Log and Integrated Management Log tabs to see the list of events.

Click an event for more information.

ID ↓	Severity	Class	Description	Last Update	Count	Category
44	●	Drive Array	Slot 0 Smart Array - Logical drive status changed to ok	08/31/2018 20:52:34	1	Hardware
<input type="checkbox"/> 43	▲	Drive Array	Slot 0 Smart Array - Logical drive status changed to rebuilding	08/31/2018 18:04:54	1	Hardware
<input type="checkbox"/> 42	▲	Drive Array	Slot 0 Smart Array - Logical drive status changed to recovering	08/31/2018 17:40:54	1	Hardware
41	●	Drive Array	Slot 0 Smart Array - Drive is failed: Port 11 Box 3 Bay 2	08/31/2018 18:04:54	1	Hardware
40	○	Network	HPE Ethernet 1Gb 4-port 331i Adapter - NIC Connectivity status changed to OK for adapter in slot 0, port 2	08/17/2018 19:13:45	1	Hardware
39	○	Network	HPE Ethernet 1Gb 4-port 331i Adapter - NIC Connectivity status changed to OK for adapter in slot 0, port 3	08/17/2018 19:13:41	1	Hardware
38	○	Network	HPE Ethernet 1Gb 4-port 331i Adapter - NIC Connectivity status changed to OK for adapter in slot	08/17/2018 19:13:27	1	Hardware

## LEDs and problem diagnosis

LEDs on StoreOnce hardware components help with troubleshooting.

### Subtopics

[Server LEDs](#)

[Storage enclosure components and LEDs](#)

## Server LEDs

### Subtopics

[HPE StoreOnce 3660 Controller Node LEDs – Front Panel](#)

[LFF Disk Drive LEDs in HPE StoreOnce 3660 System](#)

[HPE StoreOnce 5260/5660 Controller Node LEDs – Front Panel](#)

[SFF Disk Drives in HPE StoreOnce 5260/5660 System](#)

[Rear panel LEDs](#)

[Network card LEDs](#)

[Fibre Channel card LEDs](#)

## HPE StoreOnce 3660 Controller Node LEDs – Front Panel

Figure 1. HPE StoreOnce 3660 controller node LEDs

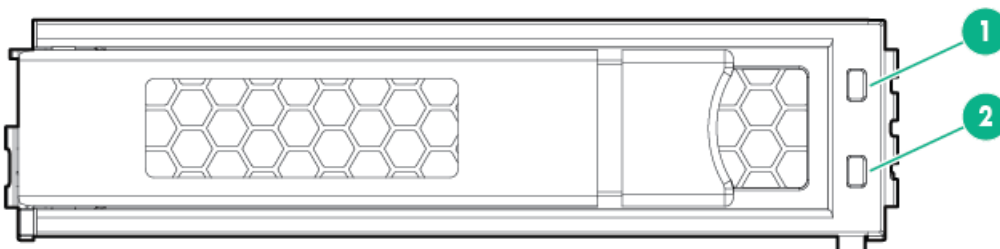


Table 1. HPE StoreOnce 3660 controller node LED statuses

Item	LED	Status
1	UID button/LED	Solid green = System on and normal operation Flashing green = Performing power on sequence Solid amber = Power button= initialized, system on standby Off = No power present
2	Health	Solid green = Normal Flashing amber = System degraded Flashing red = System critical
3	NIC status LED	Solid green = Link to network Flashing green = Network active Off = No network activity
4	Power on LED	Solid blue = Activated Flashing blue = Remote management in progress, iLO-based firmware upgrade in progress, iLO reset in progress, iLO service port activity or error Off= Deactivated

## LFF Disk Drive LEDs in HPE StoreOnce 3660 System

Figure 1. Disk drive LEDs in servers



Item	LED	Status	Definition
1	Fault/Locate	Solid amber	The drive has failed, is unsupported, or is invalid.

Item	LED	Status	Definition
		Solid blue	The drive is operating normally and is being identified by a management application.
		Flashing amber/blue (1Hz)	The drive has failed, or a predictive failure alert has been received for this drive; it also has been identified by a management application.
		Flashing amber (1Hz)	A predictive failure alert has been received for this drive. Replace the drive as soon as possible.
2	Online/Activity	Solid green	The drive is online and has no activity.
		Flashing green (4Hz)	The drive is operating normally and has activity.
		Flashing green (1Hz)	The drive is rebuilding, RAID migration, stripe size migration, capacity expansion, logical drive extension, erasing, or spare activation.
		Off	The drive is not configured by a RAID controller or a spare drive.

## HPE StoreOnce 5260/5660 Controller Node LEDs – Front Panel

Figure 1. HPE StoreOnce 5260/5660 controller node LEDs

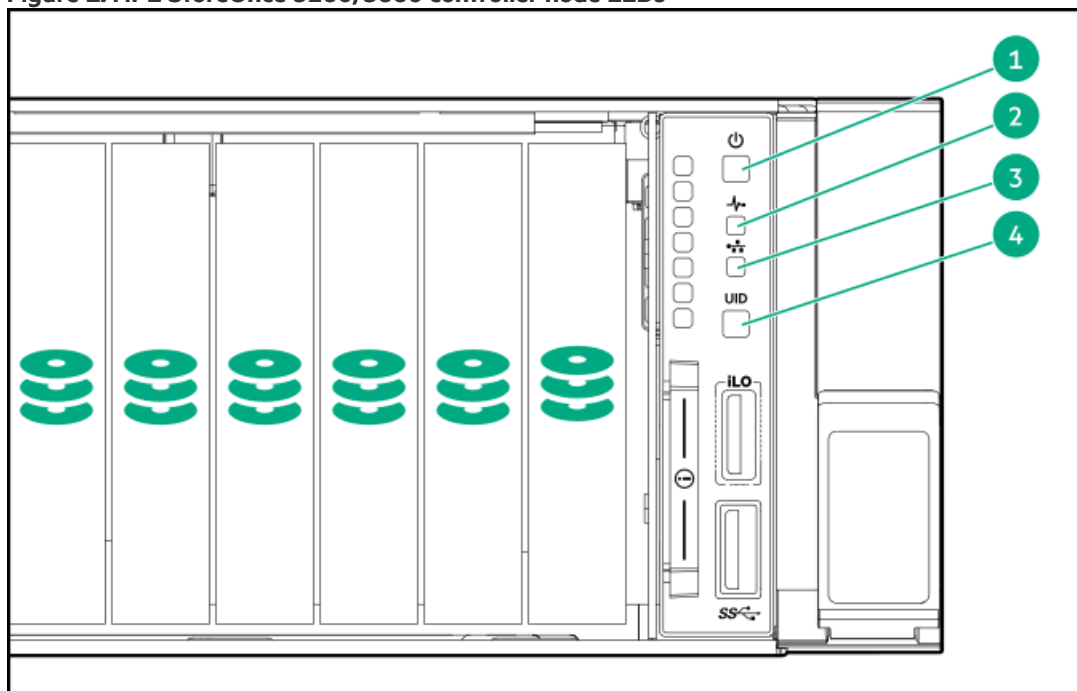


Table 1. HPE StoreOnce 5260/5660 controller node LED statuses

Item	LED	Status
1	Power On/ Standby button and system power LED	<p>Solid blue = Activated</p> <p>Flashing blue = Remote management in progress, iLO-based firmware upgrade in progress, iLO reset in progress, iLO service port activity or error</p> <p>Off= Deactivated</p>
2	Health LED	<p>Solid green = Normal</p> <p>Flashing amber = System degraded</p> <p>Flashing red = System critical</p>

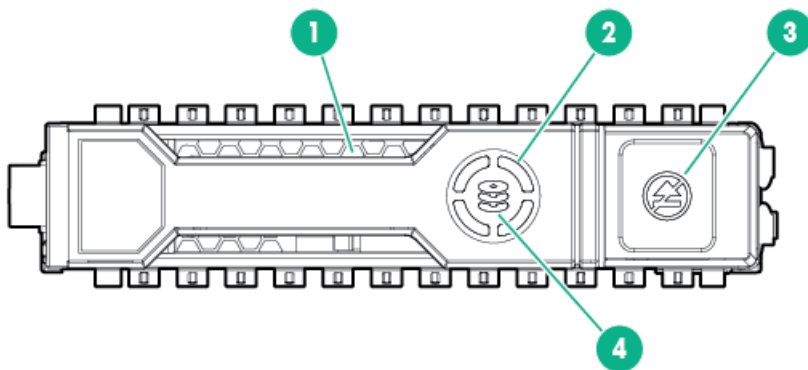


Item	LED	Status
3	NIC Status LED	Solid green = Link to network Flashing green = Network active Off = No network activity
4	UID button/LED	Solid green = System on and normal operation Flashing green = Performing power on sequence Solid amber = Power button= initialized, system on standby Off = No power present

## SFF Disk Drives in HPE StoreOnce 5260/5660 System

StoreOnce 5260 and 5660 System SFF SSD Disk Drive LEDs

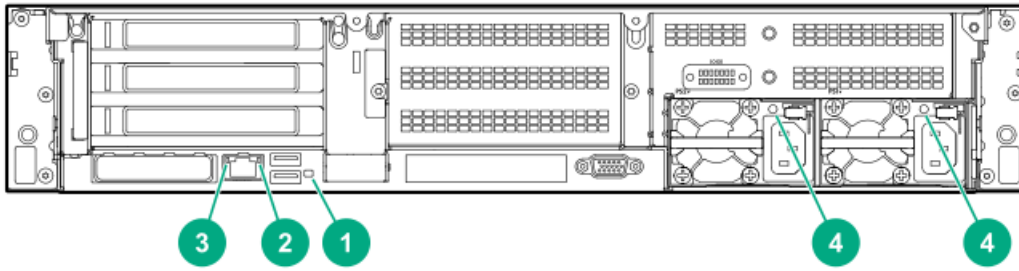
Figure 1. SFF (SSD) drive



LED	Status
1. Locate LED	Solid blue = Drive locate Flashing blue = Firmware is updating
2. Activity ring LED	Rotating green = Drive activity Off = No drive activity
3. Do not remove LED	Solid white = Do not remove Off = OK to remove
4. Drive status LED	Solid green = Configured Flashing green = Transforming Flashing green/amber = Predictive failure and configured Flashing amber = Predictive failure and not configured Solid amber = Failed Off = Not configured

## Rear panel LEDs

Figure 1. Rear panel LED, HPE StoreOnce 3660, 5260 and 5660 systems



Item	Description	Status
1	UID LED	<ul style="list-style-type: none"> <li>Off = Deactivated</li> <li>Solid blue = Activated</li> <li>Flashing blue = System is being managed remotely</li> </ul>
2	Status LED	<ul style="list-style-type: none"> <li>Off = No network activity</li> <li>Solid green = Link to network</li> <li>Flashing green = Network activity</li> </ul>
3	Link LED	<ul style="list-style-type: none"> <li>Off = No network link</li> <li>Green = Network link</li> </ul>
4	Power supply LEDs	<ul style="list-style-type: none"> <li>Off = System is off or power supply has failed</li> <li>Solid green = Normal</li> </ul>

## Network card LEDs

There are two LEDs adjacent to each Ethernet port if you have StoreOnce Optional Hardware Network cards installed.

Table 1. Network card LEDs

Link	<p>Amber = On. Link to the adapter is established and operating at maximum speed. The adapter is receiving power and the cable connection is good.</p> <p>Green = On. Link to the adapter is established and operating at less than maximum speed. The adapter is receiving power and the cable connection is good.</p> <p>Off. No link to the adapter is established. The adapter is not receiving power or the cable connection is faulty.</p>
Activity	<p>Flashing green = Ongoing network data activity. The adapter is sending or receiving network data.</p> <p>Off = No network data activity or no connection.</p>

## Fibre Channel card LEDs

There are three vertical LEDs adjacent to each Fibre Channel port if you have StoreOnce Optional Hardware Fibre Channel cards installed.

**Table 1. 32 Gb Fibre Channel card LEDs**

32Gb LED	16Gb LED	8Gb LED	Activity
Off	Off	Off	Power Off (OK)
On	On	On	Power on before or after software initialization. Awaiting HBA software initialization.
Flashing	Flashing	Flashing	Power on after software initialization. Link not initialized.
Alternately flashing	Alternately flashing	Alternately flashing	Software fault (OK)
Off	Off	On	Connected at 8 Gb/s
Off	Off	Flashing	Activity at 8 Gb/s (OK)
Off	On	Off	Connected at 16 Gb/s
Off	Flashing	Off	Activity at 16 Gb/s (OK)
On	Off	Off	Connected at 32 Gb/s
Flashing	Off	Off	Activity at 32 Gb/s (OK)

**Table 2. 16 Gb Fibre Channel card LEDs**

16Gb LED	8Gb LED	4Gb LED	Activity
Off	Off	Off	Power Off (OK)
On	On	ON	Power on before or after initialization. Awaiting HBA software initialization.
Flashing	Flashing	Flashing	Power on after software initialization. Link not initialized.
Alternately flashing	Alternately flashing	Alternately flashing	Software fault (OK)
Off	Off	On	Connected at 4 Gb/s
Off	Off	Flashing	Activity at 4 Gb/s (OK)
Off	On	Off	Connected at 8 Gb/s
Off	Flashing	Off	Activity at 8 Gb/s (OK)
On	Off	Off	Connected at 16Gb/s
Flashing	Off	Off	Activity at 16 Gb/s (OK)

## Storage enclosure components and LEDs

### Subtopics

[Primera 600 LFF Storage enclosure LEDs](#)

## Primera 600 LFF Storage enclosure LEDs

**Figure 1. Power cooling supply (PCM) LEDs**



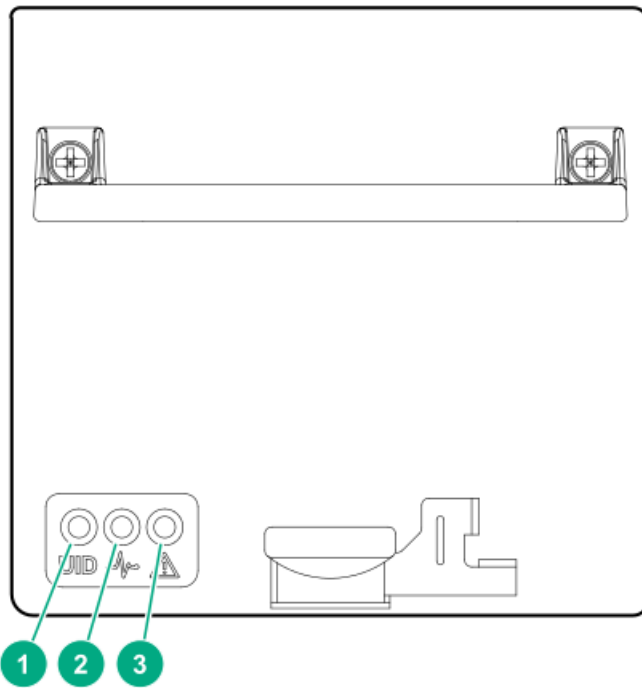
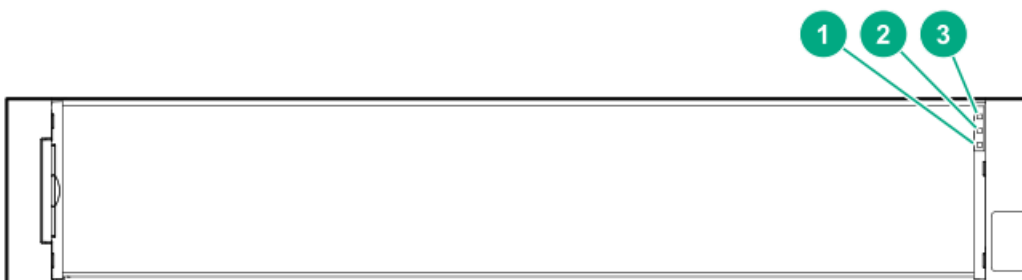


Table 1. PCM LED statuses

Item	LED	Statuses
1	UID	Blue solid = Locate active and/or safe to remove. Blue flashing = Locate active; <b>do not remove component.</b>
2	Health	Green solid = Power on, normal operation Green off= Power off
3	Fault	Amber solid= Power supply or Fan Fault Amber off = No fault, Normal operation

Figure 2. Drive enclosure LEDs

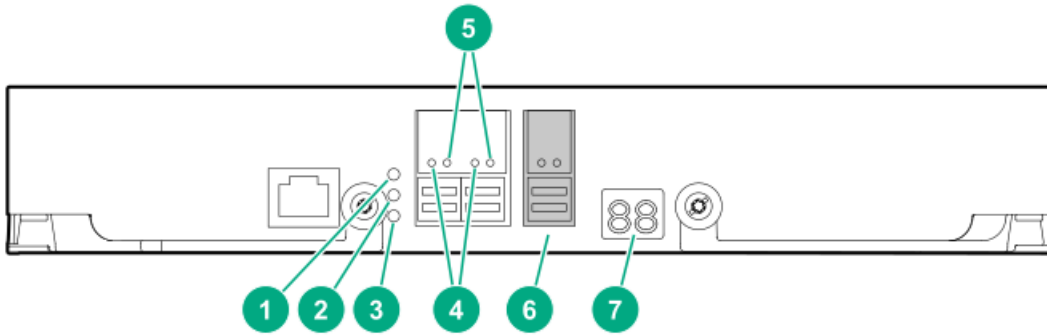


Item	Description	Status
1	Fault	Amber solid = Fault
2	Health/Status	Green solid = Normal operation, no fault
3	UID/Services	Blue solid= Locate active

#### Disk enclosure (rear) and I/O module LEDs

The following LEDs and indicators are used to verify disk enclosure and I/O module operation.

Figure 3. Rear side of disk enclosure and I/O module LEDs



**NOTE:** LEDs 4 and 5 show the SAS ports on the disk enclosure. The right-most port (SAS port 3) is not used by any HPE StoreOnce Systems.

Item	LED symbol	Function	Status	State
1	UID	UID/Service	Blue solid	Locate active; safe to remove.
			Blue flashing	Locate active; <b>do not remove.</b>
2		Health	Green flashing	Normal operation
3		Fault	Amber solid	Fault
			Amber flashing	Fault
			Amber off	No fault
4	N/A	SAS port Fault	Amber solid	Fault
			Amber off	No fault
5	N/A	SAS Port Link	Green solid	N/A
			Green off	Port not linked
6	Do not use			
7	N/A	Cage number/ Error code	See <a href="#">I/O module error codes</a> .	

## HPE StoreOnce expansion shelf error messages

For hardware issues on HPE StoreOnce System enclosures, the HPE D3600/3700 Disk Enclosure Maintenance and Service Guide and HPE D6020 Disk Enclosure Maintenance and Service Guide are the primary source of information. Most error messages are reported in the StoreOnce Management Console with appropriate diagnostic messages. However, some problems are not explicitly recorded and you must check the 7-segment display on the rear of the enclosure to identify the error code.

This section contains a full list of error conditions applicable to HPE StoreOnce System enclosures.

### Subtopics

[I/O module error codes](#)

## I/O module error codes

Cage number/Error code	State
A4	Redundant IOM turned off.
AF	Redundant I/O Module Absent
B0	Generic expander error
B1	Expander bootstrap task has failed.
B3	Using default SAS address
B5	Communication error with the partner expander
B6	Expander firmware mismatch between the two I/O modules
B7	Failed on ESP configuration
B8	Expander composite image error
B9	SAS cable hardware error
BA	SAS cable unsupported by HPE
BD	ESP communication error
BE	Incompatible firmware in local ESP
BF	Incomplete system identification
C0	Temperature sensor generic error
C2	Failure on getting data from temperature sensor
C3	Warning temperature reached in temperature sensor
C4	Critical temperature reached in temperature sensor
D2	Module Absent - Power Supply A
D5	Communication error - Power Supply A
DA	Power Loss - Power Supply A
DB	Power Loss - Power Supply B
E2	Module Absent - Fan A
E3	Module Absent - Fan B
E7	Voltage Error - Power Supply 0
E8	Voltage Error - Power Supply 1
E9	Rotor failure - Fan A
EA	Rotor failure - Fan B
F4	NVRAM backup failure on Top I/O module
F5	NVRAM backup failure on Bottom I/O module
F7	The zoning configuration between expanders do not match, example: multipath daisy chain
F8	Drive inserted into incompatible bay

## Component replacement and safety guidelines

Before you begin, read the following guidelines to help you complete the component replacement successfully and safely.

### Subtopics

#### [Required tools](#)

#### [Component replacement guidelines](#)

## Required tools

The following items are required for some replacement procedures:

- T-8 Torx screwdriver
- T-10 Torx screwdriver
- T-15 Torx screwdriver
- T-25 Torx screwdriver
- T-30 Torx screwdriver
- Phillips screwdriver

## Component replacement guidelines

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 **CAUTION:**

Removing a component significantly changes the air flow within the enclosure. Components must be installed for the enclosure to cool properly. If a component fails, leave it in place in the enclosure until a new component is available to install.

---

Use the following guidelines when replacing a component in the HPE StoreOnce System, or when using StoreOnce Capacity Upgrade Kits.

---

 **IMPORTANT:**

For the JBOD enclosure (600 LFF), components must be replaced one at a time. Replacing multiple parts at the same time is not supported.

---

- Before replacing a component, verify its status to ensure that it needs replacement. To verify component status, check the following for component health and location information:
  - Hardware Monitoring (StoreOnce Management Console)
  - Event Log (StoreOnce Management Console)
  - System Information (iLO)
  - Integrated Management Log (iLO)
  - Status LEDs (Hardware)
- Parts can be damaged by electrostatic discharge. Keep parts in electrostatic containers until needed and ensure you are properly grounded when touching static-sensitive components.
- Hewlett Packard Enterprise recommends waiting until periods of low storage system activity to replace a component.
- When replacing components at the rear of the rack, cabling might obstruct access to the component. Carefully move any cables out of the way to avoid loosening any connections. In particular, avoid cable damage that might be caused by the following:
  - Kinking or excessive bending.
  - Disconnecting cables without capping. If uncapped, cable performance might be impaired by contact with dust, metal, or other surfaces.
  - Placing removed cables on the floor or other surfaces, where they might be walked on or otherwise compressed.

## Safety precautions

Retain and follow all product safety and operating instructions. Always refer to the documentation (printed or electronic) supplied with your product. If there is a conflict between this document and the product documentation, the product documentation takes precedence. To reduce the risk of bodily injury, electric shock, fire, and damage to the equipment, observe all warnings on the product and in the operating instructions.

## Subtopics

### General precautions

### Preventing electrostatic discharge

### Equipment symbols

## General precautions

---

### CAUTION:

The installation and maintenance of products must be carried out by qualified personnel.

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If the product sustains damage requiring service, disconnect the product from the AC electrical outlet and refer servicing to an HPE authorized service provider. Examples of damage requiring service include:

- The power cord, extension cord, or plug has been damaged.
- Liquid has been spilled on the product or an object has fallen into the product.
- The product has been exposed to rain or water.
- The product has been dropped or damaged.
- The product does not operate normally when you follow the operating instructions.

To reduce the risk of personal injury or damage to the product:

- Place the product away from radiators, heat registers, stoves, amplifiers, or other products that produce heat.
- Never use the product in a wet location.
- Avoid inserting foreign objects through openings in the product.
- Move products with casters carefully. Avoid quick stops and uneven surfaces.

## Preventing electrostatic discharge

To prevent damaging the product, be aware of the precautions required when replacing the system or handling parts. A discharge of static electricity from a finger or other conductor may damage system boards or other static-sensitive devices. This type of damage may reduce the life expectancy of the device.

To prevent electrostatic damage:







- Avoid hand contact by transporting and storing products in static-safe containers.
- Keep electrostatic-sensitive parts in their containers until they arrive at static-free workstations.
- Place parts on a grounded surface before removing them from their containers.
- Avoid touching pins, leads, or circuitry.
- Always be properly grounded when touching a static-sensitive component or assembly.

## Equipment symbols

The following symbols may be placed on equipment to indicate the presence of potentially hazardous conditions:





	<p>This symbol in conjunction with any of the following symbols indicates the presence of a potential hazard. The potential for injury exists if warnings are not observed. Consult your documentation for specific details.</p>
	<p>This symbol indicates the presence of a hot surface or a hot component. If this surface is contacted the potential for injury exists.</p> <p><b>WARNING:</b> To reduce the risk of injury from a hot surface or a hot component, allow the surface or component to cool before touching.</p>
	<p>This symbol indicates the presence of hazardous energy circuits or electric shock hazards. Refer all servicing to qualified personnel.</p> <p><b>WARNING:</b> To reduce the risk of injury from electric shock hazards, do not open this enclosure. Refer all maintenance, upgrades, and servicing to qualified personnel.</p>
	<p>These symbols on power supplies or systems indicate that the equipment is supplied by multiple sources of power.</p> <p><b>WARNING:</b> To reduce the risk of injury from electric shock, remove all power cords to completely disconnect power from the power supply or system.</p>
	<p>This symbol indicates the presence of a moving fan blade. If the spinning blades are contacted, the potential for injury exists.</p> <p><b>WARNING:</b> Hazardous moving parts. Keep away from moving fan blades. To reduce the risk of injury allow the fan blades to stop spinning before touching.</p>
	<p>This symbol indicates an area where potential hazards may exist.</p> <p><b>WARNING:</b> To reduce the risk of injury, do not access areas displaying this symbol. Refer all maintenance, upgrades, and servicing to qualified personnel.</p>

## Maintenance operations

### Subtopics

[Preparing for StoreOnce maintenance](#)

[Turning on Maintenance Mode to control Remote Support](#)

[Turning off Maintenance Mode to resume Remote Support](#)

[Powering off the system](#)

[Powering on the system](#)

[Upgrade BIOS or hardware firmware components](#)

[Upgrading StoreOnce software](#)

## Preparing for StoreOnce maintenance

## Prerequisites

Notify users of the upcoming maintenance window.

## About this task

Many of the maintenance procedures described in this guide require the system to be powered off. Before powering off, HPE recommends backing up the latest keystore.

## Procedure

1. Open the StoreOnce Management Console.
2. On the main menu, select **Settings**.
3. In the **Security** section, select the **Key Manager** panel.
4. On the **Key Manager** screen, open the **Actions** menu and select **Backup**.
5. On the **Backup Configuration** panel, enter the password information and click **Backup**.

## Turning on Maintenance Mode to control Remote Support

### About this task

HPE StoreOnce Remote Support uses STaTS to collect and send remote data from the StoreOnce System to HPE Support. If you have configured HPE StoreOnce Remote Data Collection on your system, turn on Maintenance Mode. Maintenance Mode prevents Remote Support from automatically opening support cases while you perform maintenance on the system.



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**NOTE:** Event notification on StoreOnce GUI and email notifications to subscribed users will continue to be sent, even when maintenance mode is turned on.

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## Procedure

1. On the main menu, select **Settings**.
2. In the **System** section, click the **Maintenance Mode** panel.
3. Toggle the **Maintenance Mode** button on.

## Turning off Maintenance Mode to resume Remote Support

### Procedure

1. On the main menu, select **Settings**.
2. In the **System** section, click the **Maintenance Mode** panel.
3. Toggle off the **Maintenance Mode** button.

Maintenance Mode turns off automatically after 24 hours.

## Powering off the system

### Procedure

1. Log in to the StoreOnce Management Console.
2. On the main menu, select **Settings**.
3. On the **Settings** screen, select **Shutdown** on the **Actions** menu.

If you have storage enclosures attached to the system, they must be powered off after the server.

4. Power off all storage enclosures as follows:

- **StoreOnce 3660, 5260, and 5660 enclosures** —power off by disconnecting main power.

## Powering on the system

### Procedure

1. If you have storage enclosures attached to the system, power on the enclosures before powering on the server.
2. Press the power button on the front of the HPE StoreOnce System.

## Upgrade BIOS or hardware firmware components

Always use the StoreOnce Management Console to implement BIOS and hardware firmware component checks and updates. The StoreOnce software contains currently supported firmware updates.



**NOTE:** Do not upgrade BIOS or hardware firmware components individually using downloads from the HPE Support website.

### Subtopics

#### [Upgrading StoreOnce Systems](#)

## Upgrading StoreOnce Systems

### Prerequisites

- You have obtained the StoreOnce upgrade package (.star file). The upgrade package file is located where it can be accessed from the StoreOnce System.
- You are directly logged in to the StoreOnce System that you are upgrading. You cannot upgrade a federation member system from the federation lead system.
- You are logged in as Administrator.



**IMPORTANT:** On HPE StoreOnce 3660, 5260 and 5660 Systems, please follow these mandatory steps for offline storage expansion to work seamlessly:

1. First, upgrade to the latest version of the StoreOnce software revision 4.3.4.
2. Cleanly shut down the server node and all existing enclosures.
3. Disconnect all power cables from the server and enclosures.
4. Perform the storage expansion, remembering the numbered sequence required to connect the enclosures. Ensure that only necessary changes are made to complete the expansion.
5. Connect back all of the SAS cables correctly the same order, following the configuration diagrams.
6. Connect back the **enclosure** power cables only and wait for a few minutes until the enclosures are powered up.
7. When the enclosures are powered up, connect the **server** power cables and power on the server.

Not following these instructions can lead to data unavailability or data loss.



**IMPORTANT:** iLO must be configured to use the Production security state. Using the iLO High Security state is not supported.



**NOTE:** When performing a software upgrade to StoreOnce 4.3.4, ensure that the iLO5 version is at 2.44 or later. The iLO version is in accordance with the restricted upgrade path to 4.3.4, from software versions 4.2.3 or later.



**NOTE:** Data Services may take longer to start than expected. Do not reboot the system unless the data services are in a failed to start state.

## Procedure

1. On the StoreOnce Management Console main menu, select Settings.
2. On the Settings screen, expand the Actions menu and then select Upgrade.

The Upgrade screen guides you through steps for:

- Selecting and uploading an upgrade package.
- Validating the upgrade package.
- Upgrading the StoreOnce System.

## Upgrading StoreOnce software

The current software version is displayed on the System Dashboard under System Information.

To find out if a later software release is available, check HPE Support at <http://www.hpe.com/support/softwaredepot>. If it is, download the software release and follow the instructions in the accompanying Release Notes to install the software.

### Supported web browsers for the StoreOnce Management Console

Refer to HPE StoreOnce Support Matrix for up-to-date details on supported applications. See [StoreOnce websites](#) for the link to this resource.

## Replace the system board

Find the step-by-step instructions for replacing the motherboard in the HPE ProLiant DL385 Gen10 Plus Server Maintenance and Service Guide.

The following activities are specific to HPE StoreOnce Systems:

- Review the StoreOnce PCIe card configuration, DIMM configuration, and SAS cabling before removing the motherboard. These components must be replaced in the same locations after replacing the motherboard.
- Back up your existing iLO 5 configuration so that you can restore your iLO 5 license and settings on the new system board.
- After replacing the motherboard and restoring internal components to their correct locations, reconfigure BIOS settings and iLO 5 settings during boot up, and then restore the iLO 5 configuration from backup.
- Review and update firmware, if necessary.
- After powering up, rewrite warranty serial numbers into BIOS.

### Subtopics

[Backing up the iLO configuration](#)

[Identifying location of components on the system board](#)

[Motherboard and system maintenance switch](#)

[DIMM locations](#)

[After replacing the motherboard—BIOS settings and iLO network configuration](#)

[RBSU settings](#)

[Restoring the iLO license and configuration](#)

## Backing up the iLO configuration

### Prerequisites

- Configure iLO Settings privilege.
- iLO is configured to use the Production security state. Backing up and restoring the configuration when iLO is configured to use the HighSecurity, FIPS, or CNSA security state is not supported.

### About this task

All products are shipped with paper copies of the iLO 5 licenses. If you no longer have these licenses, and the board is still working for the iLO 5 web interface connection through its management Ethernet port, make a note of the license before you remove the motherboard.

If the iLO 5 connection is not working, contact HPE Support.

### Procedure

1. Log in to iLO through the web interface.
2. Click Administration in the navigation tree, and then click Backup & Restore.
3. Click Backup.
4. Optional: To password protect the backup file, enter a password in the Backup file password box.

The password can be up to 32 characters long.

5. Click Download.

The file is downloaded and this activity is recorded in the event log.

The file name uses the following format: `<server serial number>_<YYYYMMDD>_<HHMM>.bak`.

## Identifying location of components on the system board

### Procedure

Before replacing the motherboard, make a note of PCIe slot allocation and SAS cabling.

## Motherboard and system maintenance switch

The system board for the following HPE StoreOnce Systems is the standard DL385 Gen10 Plus motherboard:

- HPE StoreOnce 3660
- HPE StoreOnce 5260
- HPE StoreOnce 5660

Use the default settings. The default value for all positions on the system maintenance switch is OFF.

See the HPE ProLiant DL385 Gen 10 Plus Maintenance and Service Guide for more information about replacing the system board.

## DIMM locations

DIMM slots are numbered sequentially (1 to 16) for each processor. The supported Advance Memory Protection modes use the letter assignments for population guidelines.

The locations of DIMM slots are also shown on the StoreOnce hood label inside the server.

**Table 1. DIMM slot locations**

<b>Model</b>	<b>Processor DIMM</b>	<b>Slots</b>
HPE StoreOnce 3660 System	1	DIMM 1 Ch. H, slot 1
		DIMM 3 Ch. G, slot 3
		DIMM 14 Ch. C, slot 14
		DIMM 16 Ch. D, slot 16
	2	DIMM 1 Ch. H, slot 1
		DIMM 3 Ch. G, slot 3
		DIMM 14 Ch. C, slot 14
		DIMM 16 Ch. D, slot 16
HPE StoreOnce 5260 System	1	DIMM 1 Ch. H, slot 1
		DIMM 3 Ch. G, slot 3
		DIMM 10 Ch. A, slot 10
		DIMM 12 Ch. B, slot 12
		DIMM 14 Ch. C, slot 14
		DIMM 16 Ch. D, slot 16
	2	DIMM 1 Ch. H, slot 1
		DIMM 3 Ch. G, slot 3
		DIMM 10 Ch. A, slot 10
		DIMM 12 Ch. B, slot 12
HPE StoreOnce 5660 System	1	DIMM 1 Ch. H, slot 1
		DIMM 3 Ch. G, slot 3
		DIMM 5 Ch. F, slot 5
		DIMM 7 Ch. E, slot 7
		DIMM 10 Ch. A, slot 10
		DIMM 12 Ch. B, slot 12
		DIMM 13 Ch. C, slot 13
		DIMM 14 Ch. C, slot 14
		DIMM 15 Ch. D, slot 15
		DIMM 16 Ch. D, slot 16

Model	Processor	DIMM	Slots
	2	DIMM 1	Ch. H, slot 1
		DIMM 3	Ch. G, slot 3
		DIMM 5	Ch. F, slot 5
		DIMM 7	Ch. E, slot 7
		DIMM 10	Ch. A, slot 10
		DIMM 12	Ch. B, slot 12
		DIMM 13	Ch. C, slot 13
		DIMM 14	Ch. C, slot 14
		DIMM 15	Ch. D, slot 15
		DIMM 16	Ch. D, slot 16

## After replacing the motherboard—BIOS settings and iLO network configuration

### About this task

Configure the ROM-Based Setup Utility (RBSU) settings before connecting the Fibre Channel, network, and SAS cables to the server during the server POST sequence. The RBSU configuration must be completed before the system boots into the StoreOnce software.

### Procedure

1. Boot up the StoreOnce System and watch the local console; the iLO 5 IP addresses are shown (IPv4 and IPv6).



#### NOTE:

If the iLO port is plugged into a network that provides DHCP, the acquired addresses will be shown here and you can connect to the network address in a web browser to configure iLO. If not, you can edit iLO 5 during bootup, as described later in this procedure.

2. To access System Utilities, press F9 in the ProLiant POST screen, and then select System Configuration.
3. Select BIOS/Platform Configuration (RBSU) — System Options.
4. Change the RBSU settings, as shown in the tables in the next section.
5. Press F10 to save. Then press ESC until the System Utilities menu is displayed.
6. At this point, you can do one of the following:
  - Select Reboot the System and confirm to proceed.
  - Or, if there are no DHCP-assigned IP addresses, you can manually configure iLO using the local console. Select System Configuration.
7. Select the iLO 5 Configuration Utility.
8. Select Network Options.
9. Configure your network settings and press F10 to save.
10. Press ESC until you exit System Utilities and can continue with the system reboot.
11. Restore the iLO license and configuration. See [Restoring the iLO license and configuration](#).
12. Use the StoreOnce Management Console to verify that the firmware on the new component is correct.



#### NOTE:

Note the output after running firmware upgrade. It will advise if you need a system reboot or a cold reboot to install the new firmware revision successfully.

- After power-up, it is necessary to rewrite warranty serial numbers into the BIOS. Contact HPE Support for assistance in rewriting warranty serial numbers.

## RBSU settings

**Table 1. RBSU settings for HPE StoreOnce Gen4 Systems**

Top menu item	Sub menu 1	Sub menu 2	Current default state	Change to:
Boot options	Boot mode		UEFI Mode	No change
Advanced Options	Advanced System ROM Option	Serial Number		Original server serial number
		Product ID		P55682-B21 (For 3660)
				P55683-B21 (For 5260)
				P55684-B21 (For 5660)
Date and Time	Date (mm/dd/yyyy)			As appropriate
	Time (hh:mm:ss)			As appropriate
	Time Zone			As appropriate
	Time Format		Coordinated Universal Time (UTC)	No change
System options	USB Options	Internal SD Card Slot	Enabled	Disabled

## Restoring the iLO license and configuration

### Prerequisites

- Configure iLO Settings privilege
- Administer iLO User Accounts privilege
- Ensure that an iLO backup file exists.
- Verify that the default iLO account credentials are available if you previously reset iLO to the factory default settings.
- Verify that the iLO security state you want to use is configured.

When you configure the FIPS and CNSA security states, iLO is reset to the factory default settings. If you do not configure these security states before performing a restore, the restored information is deleted when you update the security state.

### Procedure

- Click Administration in the navigation tree, and then click Backup & Restore.
- Click Restore.
- Depending on your browser, click Browse or Choose File, and then navigate to the backup file.
- If the backup file is password protected, enter the password.



5. Click Upload and Restore.

iLO prompts you to confirm the request.

6. Click Restore.

## Replace the HPE Smart Array P408e-p controller and components

All HPE StoreOnce systems described within this guide use the HPE Smart Array P408e-p SR Gen 10 Controller for RAID.

The controller has an embedded cache module and is fitted with the HPE 96W Smart Storage Battery.

### Subtopics

[Replacement part numbers HPE Store Once 3660, 5260, and 5660 Systems](#)

[Internal SAS cabling](#)

[RAID controller failures](#)

[Replace the RAID components](#)

## Replacement part numbers HPE Store Once 3660, 5260, and 5660 Systems

Following are the replacement spare part numbers for the HPE P408e-p Smart Array controller and components:

- **StoreOnce 3660**
  - HPE Smart Array P408e-p SR Gen 10 Controller (slot 6): 804405-B21
  - 96W Smart Storage Battery: 871264-001
- **StoreOnce 5260**
  - HPE Smart Array P408e-p SR Gen 10 Controller (slot 3 and slot 6): 804405-B21
  - 96W Smart Storage Battery: 871264-001
- **StoreOnce 5660**
  - HPE Smart Array P408e-p SR Gen 10 Controller (slots 3 and 6): 804405-B21
  - 96W Smart Storage Battery: 871264-001

## Internal SAS cabling

The internal SAS cabling is illustrated for the HPE StoreOnce systems.

### Subtopics

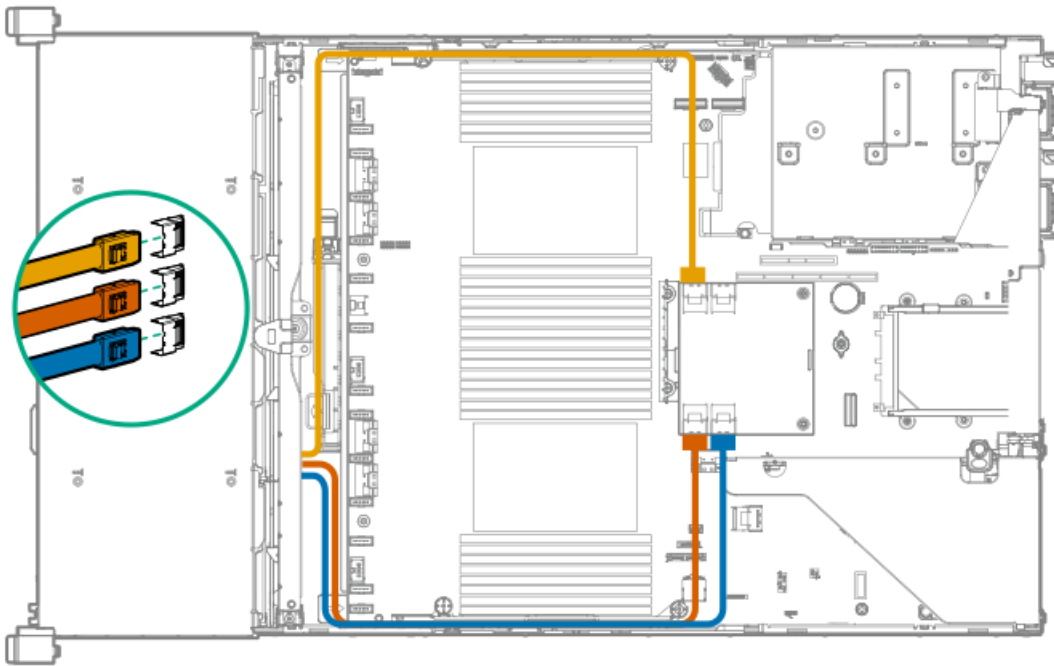
[HPE StoreOnce 3660 System internal SAS cabling](#)

[HPE StoreOnce 5260 and 5660 Systems internal SAS cabling](#)

## HPE StoreOnce 3660 System internal SAS cabling

Figure 1. Internal SAS cabling for HPE StoreOnce 3660 Systems

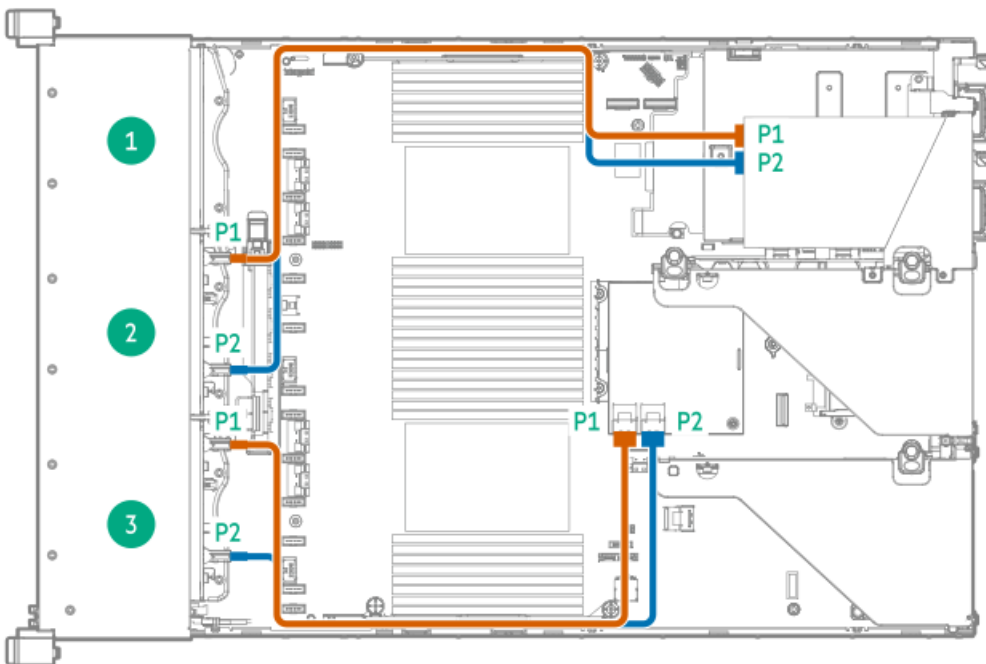




Item	From	To
Orange cable	Smart Array P816i-a SAS port 1	Port 1, LFF backplane
Blue cable	Smart Array P816i-a SAS port 2	Port 2, LFF backplane
Yellow cable	Smart Array P816i-a SAS port 3	Port 3, LFF backplane

## HPE StoreOnce 5260 and 5660 Systems internal SAS cabling

Figure 1. Internal SAS cabling HPE StoreOnce 5260 and 5660 Systems



Item	From	To
Orange cable	Port 1, embedded RAID controller	Port 1, front drive cage (OS disks)

Item	From	To
Blue cable	Port 2, embedded RAID controller	Port 2, front drive cage (OS disks)

## RAID controller failures

The StoreOnce System boots from the p408i (Smart Array) and the two small form factor OS disks in the server. If a catastrophic failure of the boot RAID controller occurs, the system will not boot. This failure may only be diagnosed from the server POST messages where the controller may report an error or a lockup code.

In these cases, contact HPE Support and provide information about the reported error code.

Other forms of non-catastrophic RAID controller failure, or failure of the P408e-p Smart Array RAID controller in the system, will be reported in the Event Log of the StoreOnce Management Console.



### NOTE:

If RAID fails and the StoreOnce System is still functioning, you can also get information, including license keys, by generating a Support ticket.

---

## Replace the RAID components

When replacing the P408e-p Smart Array controller, be sure to replace the card into the same slot from which it was removed. Make sure that the card is connected to the internal SAS data storage. If the system has been expanded, also connect the card to the external SAS storage.



### CAUTION:

To reduce the risk of personal injury or damage to the equipment, consult the safety information and user documentation provided with the server and the RAID component before replacing the component.

---

### Subtopics

[HPE Smart Array P408e-p Smart Array SR Gen10](#)

[HPE P408e-p Smart Array Controller and 96W Smart Storage Battery](#)

[Replacing the P408e-p Smart Array RAID controller card](#)

## HPE Smart Array P408e-p Smart Array SR Gen10

The P408e-p Smart Array controller card is located in HPE StoreOnce 3660 Systems in PCIe slot 6, and is located in StoreOnce 5260 and 5660 Systems in PCIe slot 3 and 6.

**Figure 1. Controller ports and connectors on an HPE P408e-p Smart Array card**

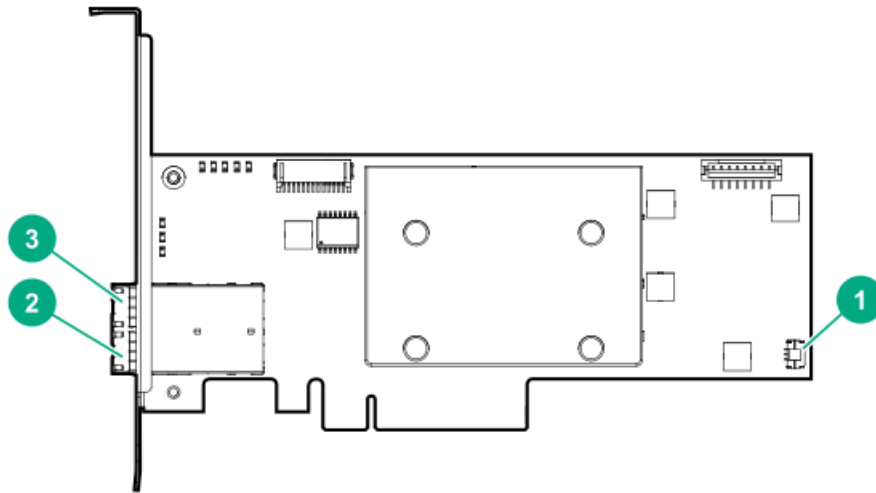


Table 1.

Item	Description
1	Controller backup power connector.
2	External x4 Mini-SAS HD port 2e. <sup>1</sup>
3	External x4 Mini-SAS HD port 1e. <sup>2</sup>

<sup>1</sup> External SAS ports 1e and 2e comprise the single Mini-SAS HD receptacle connector, which can accept either two Mini-SAS HD x4 plug connectors or a single Mini-SAS HD x8 plug connector.

<sup>2</sup> External SAS ports 1e and 2e comprise the single Mini-SAS HD receptacle connector, which can accept either two Mini-SAS HD x4 plug connectors or a single Mini-SAS HD x8 plug connector.

## HPE P408e-p Smart Array Controller and 96W Smart Storage Battery

StoreOnce 3660, 5260 and 5660 Systems now utilize the HPE P408e-p Smart Array Controller for RAID configuration instead of p1224 or p1228 RAID controllers. The RAID cache module is now embedded within the Smart Array controllers, and the Super Capacitor is now replaced by a 96W Smart Storage Battery.

The 96W Smart Storage Battery is directly connected to the motherboard and to all risers within the server, providing power to each connected Smart Array Controller.

## Replacing the P408e-p Smart Array RAID controller card

### About this task

The general procedure for replacing the P408e-p Smart Array RAID card is the same to access the attached 96W Smart Storage Battery. For more information, see the HPE ProLiant DL385 Gen10 Plus Server Maintenance and Service Guide .

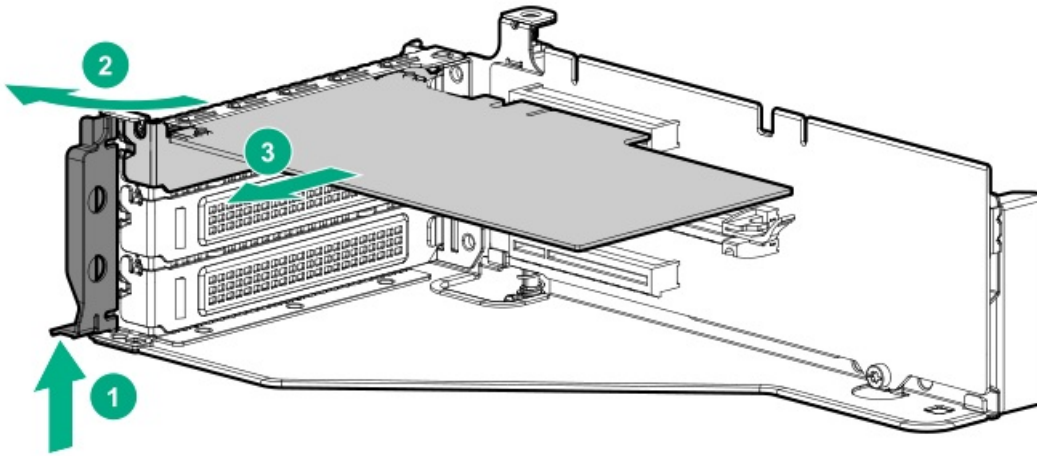
### Procedure

1. Power off the HPE StoreOnce System.
2. Observing the safety and anti-static procedures, remove all external cabling to the PCIe cards.
3. Remove the cover from the HPE StoreOnce System, as described in the HPE ProLiant DL385 Gen10 Plus Server Maintenance and Service Guide.

The HPE StoreOnce System may have additional Network or Fibre Channel cards in PCIe slots 1, 2, 4 or 5.

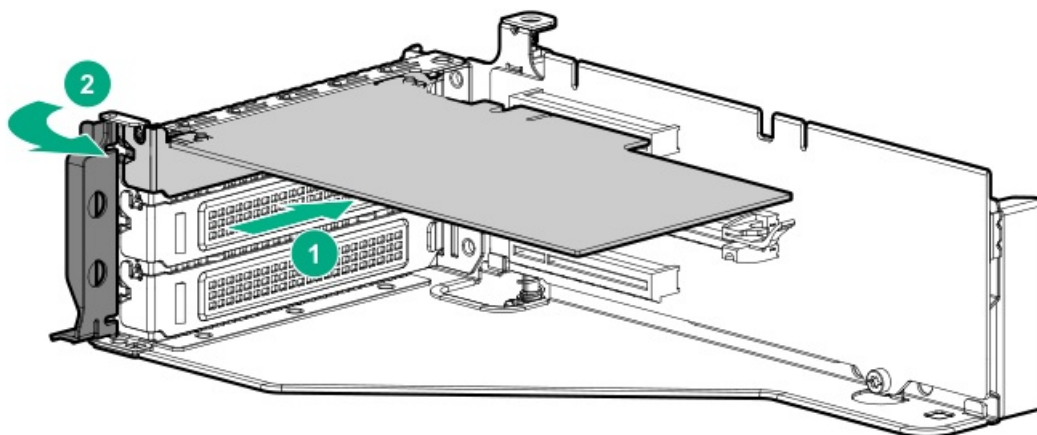
4. Locate the required P408e-p Smart Array controller card (slot 3 or 6) and remove the PCI riser cage, as described in the HPE ProLiant DL385 Gen10 Plus Server Maintenance and Service Guide.
5. Unclip the blue retaining latch on the PCIe card (1 and 2) and remove the P408e-p Smart Array controller card (3).

Figure 1. Removing the P408e-p Smart Array controller card




6. Disconnect the failed P408e-p Smart Array Controller from the Smart Storage Battery located on the riser.
7. Install the new P408e-p Smart Array Controller and check that it is seated properly. Close the blue PCIe card retaining latch (2).

Figure 2. Inserting the P408e-p Smart Array controller card



8. Reconnect the small black cable from the P408e-p Smart Array controller card to the riser.

---

 **NOTE:** Reconnect the small black cable from the P408e-p controller card to the riser. This is essential for protecting the storage cache in the event of a power failure.

---

9. Replace the PCIe riser cage and the server cover, as described in the HPE ProLiant DL385 Gen10 Plus Server Maintenance and Service Guide.
10. Reconnect all external cables.
11. Power on the HPE StoreOnce System.  
Once rebooted, the HPE StoreOnce System automatically identifies the new RAID controller and remaps the existing disk storage volumes and enclosures to the controller.
12. Using the StoreOnce Management Console, check that the firmware on the new component is correct, and upgrade it, if necessary.

## Disk replacement

## Subtopics

### Disk numbering

### Primera 600 LFF disk bay numbering

### RAID configuration

### Ordering the correct replacement disk for a failed disk

### Replacing a hot-plug hard disk

### Rebuilding storage if multiple disks fail and a RAID set is broken

## Disk numbering

This chapter describes how to replace individual disks within a RAID set.

For instructions on how to connect additional storage by adding a capacity upgrade enclosure to an HPE StoreOnce System, see the printed documentation supplied with the capacity upgrade.

Figure 1. Disk numbering in StoreOnce 3600 server head units

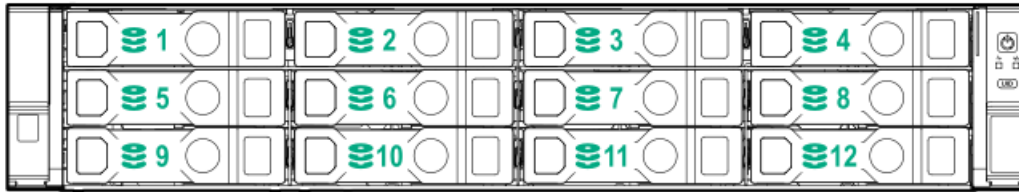
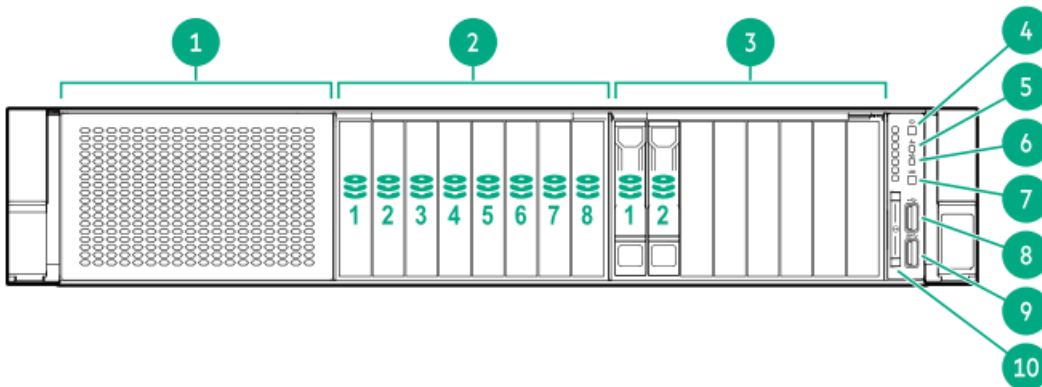


Figure 2. Disk numbering in StoreOnce 5260 and StoreOnce 5660 server head units

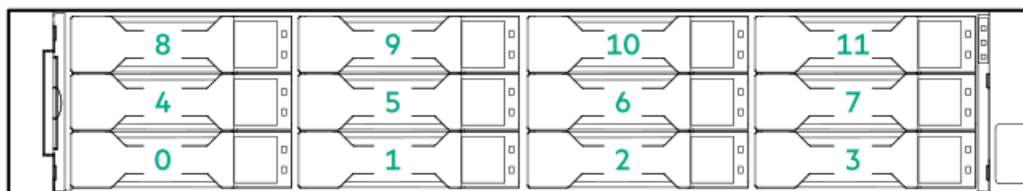


## Primera 600 LFF disk bay numbering

### Disk bay numbering and initial configuration of the enclosure

The following drawing provides the numbering of the disk bays within the storage enclosure drawers. The drawing also shows the initial configuration of an enclosure with some disk bays populated. The base enclosure that comes with the system and each capacity upgrade enclosure is initially configured this way.

The disks in the capacity upgrade kits must be added to the storage enclosures in a specific order. Each drawer has a label that specifies the sequence in which each set of 11 disks must be installed.



## RAID configuration

All HPE StoreOnce Systems are supplied with their base storage already configured for use.

**Table 1. RAID configuration**

HPE StoreOnce model	Minimum number of disks	Notes
HPE StoreOnce 3660	10 x 8 TB	<p>The StoreOnce 3660 uses RAID 6 (8+2).</p> <p>The 10 storage disks in the front server disk bays are in a RAID 6 (8+2) set. Two disks can be lost without loss of backup data. The hot spare disk is in bay 11 at initial configuration.</p>
HPE StoreOnce 5260	12 x 16 TB	<p>The StoreOnce 5260 uses RAID 6 (9+2) + 1 hot spare in externally connected SAS storage enclosures.</p> <p>Each external storage enclosure contains 12 storage disks in a RAID 6 (9+2) set + 1 hot spare. Two disks can be lost without loss of backup data. The hot spare disk is in bay 11 at initial configuration.</p> <p>The StoreOnce 5260 server node contains SSD disks for the operating system and data cache only.</p>
HPE StoreOnce 5660	12 x 16 TB	<p>The StoreOnce 5660 uses RAID 6 (9+2) + 1 hot spare in externally connected SAS storage enclosures. Each external storage enclosure contains 12 storage disks in a RAID 6 (9+2) set + 1 hot spare. Two disks can be lost without loss of backup data. The hot spare disk is in bay 12 at initial configuration.</p> <p>The StoreOnce 5660 server node contains SSD disks for the operating system and data cache only.</p>

### **i** IMPORTANT:

- It is important to replace failed disks promptly.
  - Configure SNMP traps and email alerts to ensure that you are alerted to disk failures. If a disk failure occurs, you will receive notification immediately and can replace the disks.
- The StoreOnce 5260 and 5660 systems both have SSD disks in the head of the server which are in a RAID 6 set with no spare. In the event of failure, you will need to replace the disk.

## Subtopics

### [Hot spare disk and LEDs on HPE StoreOnce Systems](#)

## Hot spare disk and LEDs on HPE StoreOnce Systems

HPE StoreOnce 3660, 5260, and 5660 Systems include hot spare disks in the external enclosures. If one disk fails in a RAID set, a hot spare disk automatically takes its place until the failed disk is replaced. The behavior of the LEDs on the hot spare disk is as follows:

- **Off:** The LED is off on a hot spare disk until it becomes active due to the failure of another disk in the RAID set. It is flickering green when in use.
- **On (green):** The LED is solid green on the hot spare disk until it becomes active due to the failure of another disk in the RAID set. It is flashing green when in use.

---

 **NOTE:**

HPE StoreOnce 3660, 5260, and 5660 systems use a feature called Predictive Spare Activation for improved storage fault tolerance. Predictive Spare Activation mode will activate a spare drive anytime a member drive within an array reports a predictive failure. The data is copied to the spare drive while the RAID volume is still healthy. Assigning one or more online spare drives to an array enables you to postpone replacement of faulty drives.

---

## Ordering the correct replacement disk for a failed disk

Always quote the serial number and product number for the enclosure with the failed disk so that HPE Support can replace the correct part. For replacement disk part numbers, see [Part numbers lists for replacement parts](#).

---

 **IMPORTANT:**

HPE strongly recommends replacing a failed disk with a fresh disk from the factory. Do not substitute a disk from another RAID set.

---

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 **IMPORTANT:**

If there is a problem adding a Capacity Upgrade Kit for the first time, the whole kit must be replaced, not just the failed component. This requirement is different than capacity upgrade kits for older StoreOnce models, and is because StoreOnce Gen4 capacity upgrade kits are factory preconfigured for faster integration with no storage parity initialization performance impact.

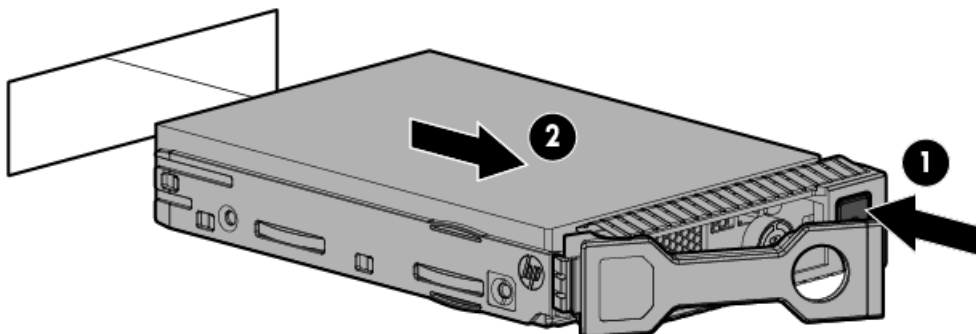
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## Replacing a hot-plug hard disk

### Procedure

1. Identify the disk that has failed.
2. Remove the disk.
  - a. Press the hard disk carrier button (1) to release the ejector lever.
  - b. Pull out the disk carrier handle and slide the hard drive assembly out of the drive bay. Be sure to support the drive when pulling it out of the cage.

**Figure 1. Removing the disk**



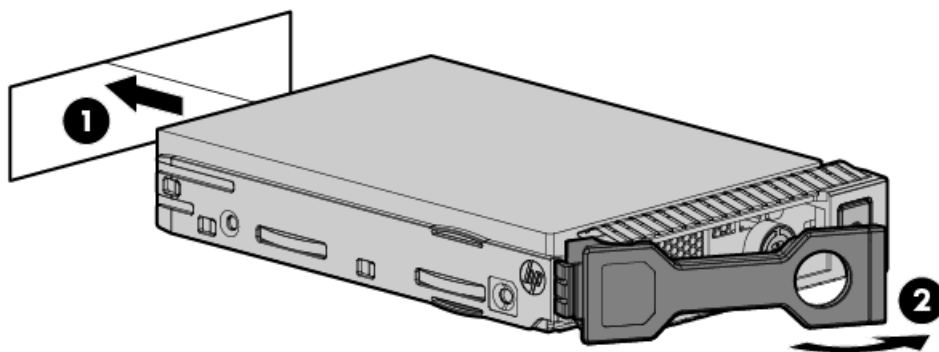
3. Replace the failed disk with the new disk.

The new disk should be of the same type and have a compatible capacity as that of the original disk.



4. Push the hard drive assembly (1) into the drive bay until it stops, and then press the HDD carrier latch (2) inward until it clicks.

Figure 2. Installing a replacement hard disk



5. Check the status of the drives as follows:

- a. Log in to the StoreOnce Management Console.
- b. On the main menu, select Settings.
- c. In the Hardware section, click the Hardware Monitoring panel.
- d. Click the Storage tab, and click the expand icon (▶) to display the components.
- e. Expand the Enclosures sections and subsections to display the appropriate Drives.



**NOTE:**

It may take several minutes for the status to report that the disk replacement has completed successfully and that the new disk is being rebuilt as part of the RAID group. During this time several alerts are generated reflecting the status of the physical disks and the logical storage system.

---

## Rebuilding storage if multiple disks fail and a RAID set is broken

### Prerequisites

This procedure requires Administrator level privileges.

### About this task

This section explains how to rebuild your storage in the event of a complete data loss. Rebuilding your storage should be done under the guidance of HPE Support.



**WARNING:**

This procedure removes all configured local storage, and will run at any time, even if the storage is healthy. The procedure cleans up all file system configuration on all local storage, and locally backed up data will no longer be accessible.

The StoreOnce system configuration, licenses, and management interfaces will not be affected.

---

After the failed disks have been replaced, you must remove the old file system configuration and rebuild a new one as follows:

### Procedure

1. Log in to the StoreOnce Management Console.
2. On the main menu, select Settings.
3. In the Hardware section, click the Storage panel.
4. On the Local Storage tab, expand the Actions menu (☰) and select Unconfigure.
5. Select the check box to acknowledge the data loss operation you are about to perform, and then click the Unconfigure button.

6. Re-enter your password to authenticate, and then click the **Unconfigure** button.  
The operation is complete when the Local Storage page reports `No Configured Storage`.
7. Rescan your local storage. Expand the Actions menu ( **⋮** ) and select **Rescan**.
8. Reconfigure your storage. Expand the Actions menu ( **⋮** ) and select **Configure**.

## StoreOnce Optional Hardware

The HPE StoreOnce Systems support the addition of 10 and 25 GbE Network cards and 16 and 32 Gb Fibre Channel cards. For more information and installation instructions, see [HPE StoreOnce Optional Hardware Installation and Configuration Guide](#).

### Subtopics

[Error messages for optional hardware](#)

[Replace Optional Hardware cards](#)

[Fibre Channel card considerations](#)

[Removing and replacing a Fibre Channel, 10GbE, or 25GbE optical SFP](#)

## Error messages for optional hardware

**Table 1. Error messages for Optional Hardware**

Short message	Error message	Recommended action
Unrecognized	Unrecognized Hardware	Remove and replace with correct hardware.
Unsupported	Hardware installed but not a supported model	Replace the card with a supported model or remove it.
Hardware Fault	Hardware installed but reporting fault	Contact Hewlett Packard Enterprise Support.
Load order	Hardware install in wrong order	Move the card to the correct location.
Hardware Missing	Hardware expected but not found	Replace the card or use the Remove Cards option on the Optional Hardware panel, and restart the system.
Hardware degraded	Hardware installed but in degraded state	Contact Hewlett Packard Enterprise Support.
Empty Slot	Empty slot	Install the optional hardware and try again.

**Table 2. Error messages for licensing**

Short message	Error message	Recommended action
Not Checked	Slot {x} could not be checked due to other errors	Resolve the hardware issues and try again.
No Hardware	Slot {x} does not contain any optional hardware	Install the optional hardware and try again.
Hardware Error	A hardware error is preventing a license being applied to Slot {x}	Resolve the hardware issues and try again.
Load Order	A license is available for Slot {x} but the preceding slot in the load order must be licensed first.	Install the correct licenses in order.

Short message	Error message	Recommended action
Unlicensed	Slot {x} is unlicensed	Install the license.

## Replace Optional Hardware cards

Replace a 10/25GbE SFP card with another 10/25GbE SFP card, a 10GbE-T card with another 10GbE-T card, a 16Gb FC card with another 16Gb FC card, and a 32Gb FC card with another 32Gb FC card.

If you install a replacement card of the same type and into the same slot, no reactivation or relicensing is required.

Use the following procedure before powering off and removing or moving cards. This procedure prevents invalid card alerts from being generated after you restart the system. For more information, see the HPE StoreOnce 3660, 5260 and 5660 Systems User Guide or the StoreOnce Management Console Online Help.

To install the replacement card, follow the instructions in the HPE StoreOnce Optional Hardware Installation and Configuration Guide.

### Subtopics

[Preparing to replace Optional Hardware cards](#)

## Preparing to replace Optional Hardware cards

### Procedure

1. Log in to the StoreOnce Management Console.
2. On the main menu, select Settings.
3. In the System section, click the License Management panel.
4. On the License Management screen, expand the Actions menu and select Remove Cards.

## Fibre Channel card considerations

For those products that have Fibre Channel cards, the following VTL and StoreOnce Catalyst device configuration notes apply:

- If using only VTL over Fibre Channel, no further configuration is required when replacing the Fibre Channel card.
- The World Wide Port Name (WWPN) and World Wide Node Name (WWNN) of the StoreOnce Catalyst over Fibre Channel device that is presented on a StoreOnce Fibre Channel port currently uses the WWPN / WWNN of the FC card. StoreOnce generated WWPNs / WWNNs are not used. Replacing the FC card will result in a new Catalyst over Fibre Channel WWPN / WWNN. After replacing a FC card the StoreOnce user will need to rezone their clients with the new WWPN / WWNN. The replaced port will not be seen by clients until this rezoning is performed.

## Removing and replacing a Fibre Channel, 10GbE, or 25GbE optical SFP

### About this task

The SFP is on the rear of the server and serves as the port transceiver for connecting to the FC SAN, or 10GbE or 25GbE network. Make sure that you have the correct SFP for the connection type.



#### **WARNING:**

When the system is on, do not stare at the optical transceivers. Doing so could damage your eyes.

### Procedure

1. Disconnect the FC, 10GbE, or 25GbE optical cable.
2. Lift the retaining clip and slide the SFP carefully out of the FC or Ethernet card port.
3. Remove the replacement SFP module from its protective packaging.

---

 **CAUTION:**

When handling the SFP, do not touch the gold contact leads to prevent damage.

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4. Carefully slide the replacement SFP into the FC or Ethernet card port until fully seated.
5. Close the retaining clip to secure the SFP in place.
6. Place the failed SFP into the packaging for return to HPE.
7. Reconnect the FC, 10GbE, or 25GbE optical cable to the SFP.
8. Verify that the link status LED is correct.

## Reinstall the StoreOnce software

In the rare occurrence of a complete operating system failure, you may need to reinstall the product software using the StoreOnce Quick Restore ISO Image. This task is normally carried out on the recommendation and under the supervision of HPE Support.

The StoreOnce Gen4 Quick Restore process allows customers to recover their StoreOnce systems without losing backed up data, provided the storage is intact and operational.

### Subtopics

[Downloading the Quick Restore ISO image](#)

[Creating a bootable Quick Restore USB memory stick](#)

[Installing the StoreOnce software](#)

## Downloading the Quick Restore ISO image

### About this task

Use the StoreOnce Quick Restore ISO Image to install the StoreOnce software image onto the StoreOnce appliance disks.

---

 **IMPORTANT:**

StoreOnce Gen4 Quick Restore is only supported using the same software version that is installed on the system being restored. Customers must download and use the matching software version of StoreOnce Gen4 Quick Restore image.

---

### Procedure

1. Navigate to the HPE Support Center at <http://www.hpe.com/support/hpesc>.
2. Search the Support Center for the QR ISO for the StoreOnce system model.
3. Click the link to the correct QR ISO image in the list.

4. On the QR ISO image page, click the link Obtain software.

The system QR Image page opens in Software Depot.

5. Review the instructions and click Select.
6. Sign in with HPE Passport, or create an account.
7. Complete the form and select Yes, I have read and accept the the software license terms for this order.
8. Click Next.

9. On the Software downloads and licenses page, select the correct Quick Restore Image and click Download.

## Creating a bootable Quick Restore USB memory stick

### Prerequisites

- A 4 GB or greater USB 2.0 memory stick
- ISO to USB utility of your choosing

### About this task



#### IMPORTANT:

The HPE USB Key Utility for Windows is not supported with StoreOnce Gen4 Quick Restore ISO images.

### Procedure

1. Plug the USB memory stick into the computer containing the StoreOnce Quick Restore ISO Image.
2. Using the ISO to USB utility, create the bootable QR USB memory stick with StoreOnce Gen4 QR image.
3. Once all steps are completed, remove the USB stick from the computer.

## Installing the StoreOnce software

### Prerequisites

- The server is powered off.
- The power cord, network cables, and all expansion enclosures are attached to the StoreOnce server.
- If installing using QR USB stick, a keyboard and monitor are required.
- If installing using iLO, the iLO network port and web interface must be connected, configured, and accessible.

### Procedure

1. Insert the QR USB stick into a USB port, or connect the ISO image file using iLO Virtual Media.
2. Power on the system and press F11 to load the One-Time Boot Menu.
3. In the One-Time Boot Menu, scroll down and select the QR USB stick to boot.

From this point, the installation process proceeds automatically and performs the following actions, stopping only if issues are found:

- Performs pre-installation hardware checks and firmware updates.
- Deletes the existing logical storage configuration on the server Operating System disks
- Creates a new logical storage partition on the server OS disks in a mirrored (RAID 1) configuration
- Installs the Operating System and reboots the server
- Restores the StoreOnce System configuration automatically on boot

After these actions finish, the process is complete.

4. Log in to the StoreOnce Management Console as normal.



#### NOTE:

If issues are found during the Quick Restore preinstallation checks, resolve all issues displayed onscreen first and then retry the QR process.

## Websites

### General websites

Single Point of Connectivity Knowledge (SPOCK) Storage compatibility matrix

<https://www.hpe.com/storage/spock>

Storage white papers and analyst reports

<https://www.hpe.com/storage/whitepapers>

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

## Support and other resources

### Subtopics

[Accessing Hewlett Packard Enterprise Support](#)

[Accessing updates](#)

[Remote support](#)

[Customer self repair](#)

[Warranty information](#)

[Regulatory information](#)

[Documentation feedback](#)

## Accessing Hewlett Packard Enterprise Support

- For live assistance, go to the Contact Hewlett Packard Enterprise Worldwide website:

<https://www.hpe.com/info/assistance>

- To access documentation and support services, go to the Hewlett Packard Enterprise Support Center website:

<https://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

<https://www.hpe.com/support/hpesc>

Hewlett Packard Enterprise Support Center: Software downloads

<https://www.hpe.com/support/downloads>

My HPE Software Center

<https://www.hpe.com/software/hpesoftwarecenter>

- To subscribe to eNewsletters and alerts:

<https://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:

<https://www.hpe.com/support/AccessToSupportMaterials>

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### IMPORTANT:

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

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## 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 initiates a fast and accurate resolution based on the service level of your product. 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.

HPE Get Connected

<https://www.hpe.com/services/getconnected>

HPE Pointnext Tech Care

<https://www.hpe.com/services/techcare>

HPE Complete Care

<https://www.hpe.com/services/completecure>

## 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.

## Warranty information

To view the warranty information for your product, see the links provided below:

HPE ProLiant and IA-32 Servers and Options

<https://www.hpe.com/support/ProLiantServers-Warranties>

HPE Enterprise and Cloudline Servers

<https://www.hpe.com/support/EnterpriseServers-Warranties>

HPE Storage Products

<https://www.hpe.com/support/Storage-Warranties>

HPE Networking Products

<https://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:

<https://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:

<https://www.hpe.com/info/reach>

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

<https://www.hpe.com/info/ecodata>

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

<https://www.hpe.com/info/environment>

## Documentation feedback

Hewlett Packard Enterprise is committed to providing documentation that meets your needs. To help us improve the documentation, use the Feedback button and icons (located at the bottom of an opened document) on the Hewlett Packard Enterprise Support Center portal (<https://www.hpe.com/support/hpesc>) to send any errors, suggestions, or comments. All document information is captured by the process.