



Hewlett Packard
Enterprise

Maintenance and Service Guide for HPE StoreOnce 3100, 3500 Series and 5100 Systems

Abstract

This is the Maintenance and Service guide for the HP StoreOnce 3100, 3520, 3540 and 5100 Systems. These products are single node StoreOnce Systems, running StoreOnce software version 3.14.0 or later. All tasks described in this guide require an Administrator logon.

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Revision History

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Launch of HPE StoreOnce 3100 System, HPE StoreOnce 3500 Series and HPE StoreOnce 5100 System

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1 Finding part numbers for replacement parts

This is the Maintenance and Service Guide for the products listed in Table 1. The products are based on HPE ProLiant Gen 9 servers and this guide supplements the ProLiant Maintenance and Service Guides. For hardware issues on the HPE StoreOnce System, the appropriate guide (as shown in Table 1) is the primary source of information and common spares part numbers are provided in these guides. This guide contains only information that is not included in existing product documentation.

Table 1 Identifying the correct Maintenance and Service Guide

HPE StoreOnce System	Associated HPE product
HPE StoreOnce 3100 System	HPE ProLiant DL360p 4LFF G9 server
HPE StoreOnce 3520 System	HPE ProLiant DL380p 12LFF G9 server
HPE StoreOnce 3540 System	HPE ProLiant DL380p 12LFF G9 server
HPE StoreOnce 5100 System	HPE ProLiant DL380p 12LFF G9 server

For more information about replaceable components that are standard for the ProLiant products:

1. Go to <http://www.hpe.com/info/enterprise/docs>.
2. Select **HP ProLiant Gen9 server** and **Service & Maintenance Guides**.
3. Scroll through the guides and select **HP ProLiant DL380 Gen9 Server Maintenance and Service Guide** or **HP ProLiant DL360 Gen9 Server Maintenance and Service Guide**, as appropriate.
4. Open the guide and look at the **Illustrated Parts Catalogue**.

The following tables provide a checklist with part numbers of all replaceable components that are unique to HP StoreOnce Systems. These parts and their replacement procedures are not referenced in the relevant HPE ProLiant server guide and are described only in this guide.

NOTE: There is no specific match for the HPE StoreOnce 5100 System Capacity Upgrade in existing HPE documentation, so the replacement procedures are documented fully in this guide.

HPE StoreOnce 3100 System Components

This model is based on an HPE ProLiant DL360 Gen9 server. The following table contains the Spares Part Numbers for the main components in the server unit.

NOTE: This is an offline list, created from partsurfer. If there is a problem with these Spares Part Numbers, check the online source at: <http://partsurfer.hpe.com/search.aspx>. If the problem exists in the online source, use the feedback form to log the problem: <http://partsurfer.hpe.com/ContactUs.aspx>.

Table 2 HPE StoreOnce 3100 System, BB913A

Part	Spares Part Number	Description	Hot plug
2 TB hard disk drive	653948-001	SPS-DRV HD 2TB 6G SAS 7.2K 3.5 DP MDL SC	Yes
Power supply	754377-001	SPS-PS 500W FS PlatinumPlus	No, unless optional second PSU connected
Processor	762445-001	SPS-PRO E5-2620v3 6C 2.4GHz 85W	No
Memory DIMM	774172-001	SPS-MEMORY DIMM 16GB 2Rx4 PC4-2133R-15	No
System board	775400-001	SPS-PCA dl380/dl360 Gen9 SYS I/O	No
Backplane	775402-001	SPS-PCA DL380/DL360 Gen9 4-LFF SAS Bkpln	No
Processor heatsink	775403-001	SPS-Heatsink Scr Down/Standrd DL360 Gen9	No
Fan module	775415-001	SPS-Fan Module dl360 Gen9	Yes
PCI riser	775421-001	SPS-PCI Riser PRI S1/2 dl360 Gen9	No
Internal SAS cable	780423-001	SPS-SAS power cable	No
PCIe riser	785497-001	SPS-PCI Riser PRI S1 DL360 Gen9	No
RAID controller p1224	842475-001	SPS-PCA 4e/4i w/o Encryption	No
Mini DIMM module (cache module for p1224)	633542-001	SPS-BD DDR3 MINI DIMM MOD 1Gx72	No
SuperCapacitor (for p1224)	660093-001	SPS-CA CAPACITOR 36in FL	No

Figure 1 HPE 3100 mechanical components

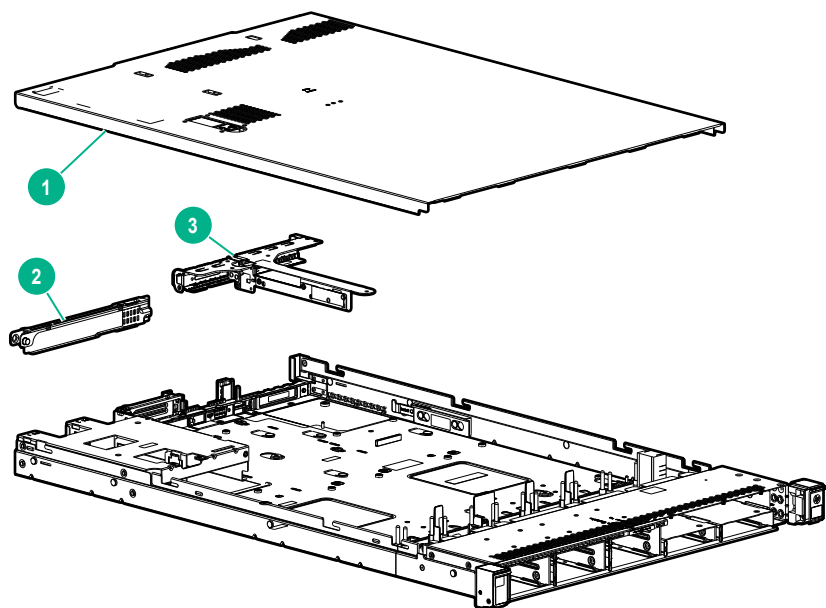
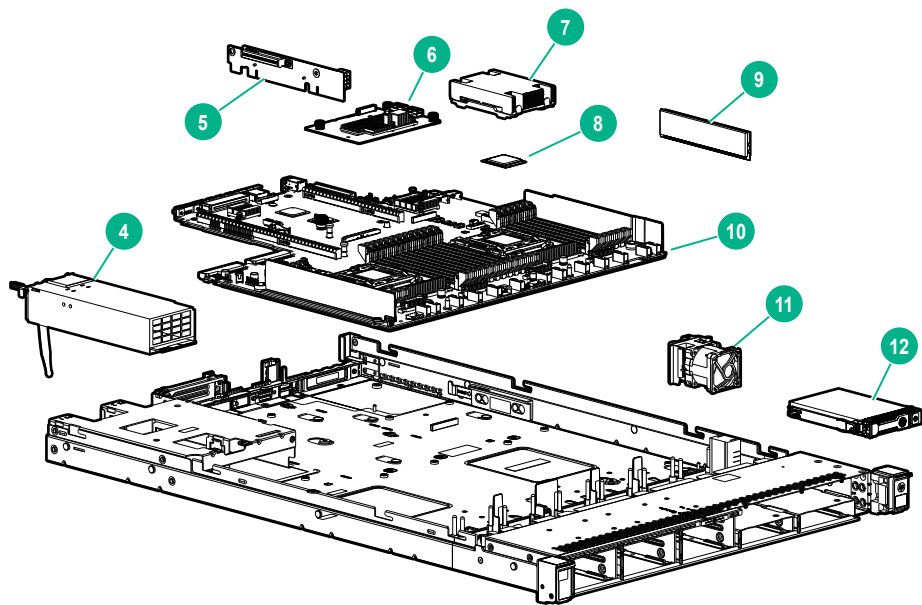


Figure 2 HPE 3100 system components



1	Access panel	2	PCI riser blank
3	PCI riser cage	4	Hot plug power supply
5	PCIe riser boards	6	Controller options
7	Heatsink	8	Processor
9	DIMM	10	System I/O board
11	Fan	12	Drive

HPE StoreOnce 3500 Series Components

The HPE StoreOnce 3520 System and HPE StoreOnce 3540 System are based on an HPE ProLiant DL380 Gen9 server. Both models have a base configuration of 12 LFF disks, with basic storage capacity capped at 50% of the available usable capacity. A license is required to make the full storage capacity available for use.

The following table lists Spares Part Numbers for the main components in the server unit.

NOTE: This is an offline list, created from partsurfer. If there is a problem with these Spares Part Numbers, check the online source at: <http://partsurfer.hpe.com/search.aspx>. If the problem exists in the online source, use the feedback form to log the problem: <http://partsurfer.hpe.com/ContactUs.aspx>.

Table 3 HPE StoreOnce 3500 Series, BB914A and BB922A

Part	Spares Part Number	Description	Hot plug
Hard disk drive (2 TB, 3520)	653948-001	SPS-DRV HD 2TB 6G SAS 7.2K 3.5 DP MDL SC	Yes
Hard disk drive (4 TB, 3540)	695842-001	SPS-DRV HD 4TB 3.5 7.2K 6G SAS SC MDL	Yes
Power supply	754381-001	SPS-PS 800W FS PlatinumPlus	Yes
Processor	762445-001	SPS-PRO E5-2620v3 6C 2.4GHz 85W	No
Memory DIMM	774172-001	SPS-MEMORY DIMM 16GB 2Rx4 PC4-2133R-15	No
System board	775400-001	SPS-PCA dl380/dl360 Gen9 SYS I/O	No
PCIe riser card 1 PCA (for PCIe slots 1 to 3)	777281-001	SPS-PCA dl380 3-S x8 PCI-E Riser	No
PCIe riser card 2 PCA (for PCIe slots 4 to 6)	777283-001	SPS-PCA dl380 3-S 2 x16 x8 PCI-E riser2	No
Backplane	777284-001	SPS-PCA DL360/380 12-LFF SAS Backplane	No
Fan module	777286-001	SPS-Fan Module (High PERF) DL38x Gen9	Yes
Processor heatsink	777290-001	SPS-Heatsink ASSYSTD 105WDL380	No
Fan cage	777294-001	SPS-FAN CAGE DL38x	No
Cable, HD Mini SAS to Mini SAS, 16 inch 3500/5100 between the SAS expander and the p1224	694008-002	Cable, HD Mini SAS to Mini SAS, 16 inch 3500/5100 Defender to shiner	No
Internal SAS Ribbon Cable from SAS expander to the backplane	784627-001	SPS-CBL Mini SAS 12LFF + 15LFF Kit	No
SAS expander	761879-001	SPS-BD Smart Array PCIe SAS Expander	No
RAID controller p1224	842475-001	SPS-PCA 4e/4i w/o Encryption	No

Table 3 HPE StoreOnce 3500 Series, BB914A and BB922A (continued)

Part	Spares Part Number	Description	Hot plug
Mini DIMM module	633542-001	SPS-BD DDR3 MINI DIMM MOD 1Gx72	No
SuperCapacitor (for p1224)	660093-001	SPS-CA CAPACITOR 36in FL	No

NOTE: Optional hardware — 10GbE Network cards, FC cards, and SFP transceivers are not part of the basic configuration. See [Optional Hardware FRUs \(page 14\)](#) for details of Optional Hardware FRUs.

Figure 3 HPE 3500 and HPE 5100 Mechanical Components

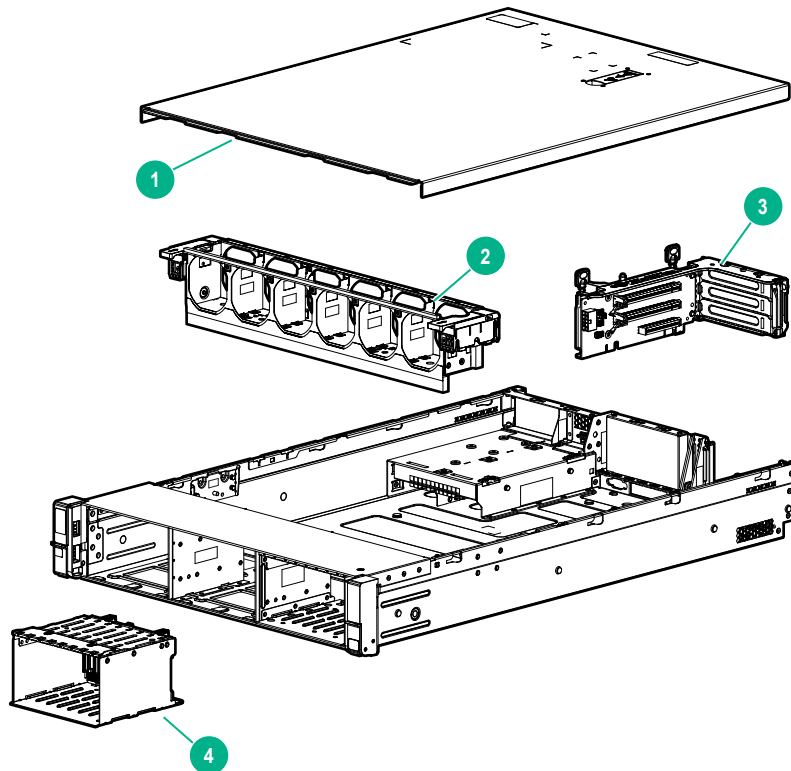
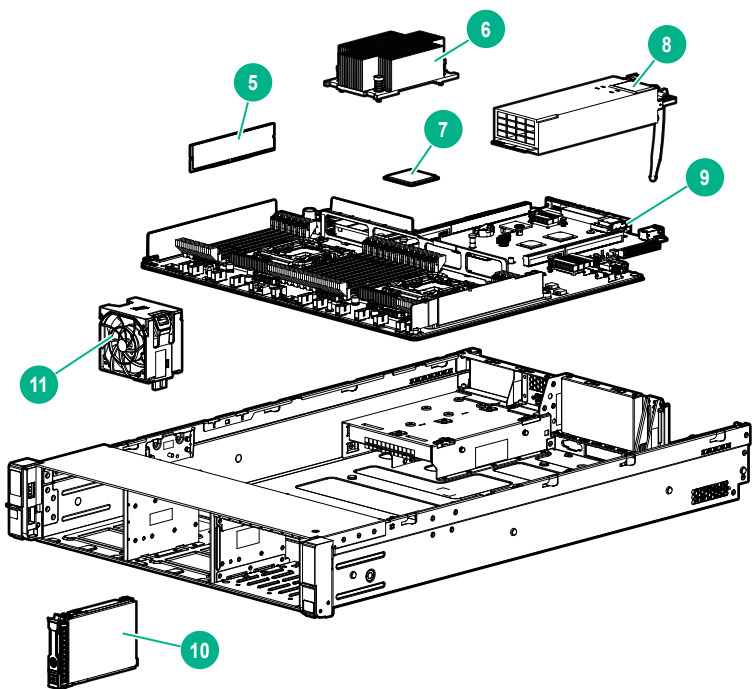


Figure 4 HPE 3500 and HPE 5100 System Components



1	Access panel	2	Fan cage
3	PCI riser	4	Drive cage
5	DIMMs	6	Heatsink
7	Processor	8	Power supply
9	System board assembly	10	Hard drive
11	Fan		

For a rear view drawing of the the HPE StoreOnce 3500 Series, see Figure 5.

HPE StoreOnce 5100 System Components

The HPE StoreOnce 5100 System is based on an HPE ProLiant DL380 Gen9 server.

The following table lists Spares Part Numbers for the main components in the head server. See the [HPE StoreOnce 5100 System Capacity Upgrade Kit components \(page 13\)](#) for information about components in the storage enclosure.

NOTE: This is an offline list, created from partsurfer. If there is a problem with these Spares Part Numbers, check the online source at: <http://partsurfer.hpe.com/search.aspx>. If the problem exists in the online source, use the feedback form to log the problem: <http://partsurfer.hpe.com/ContactUs.aspx>.

Table 4 HPE StoreOnce 5100 System, BB915A

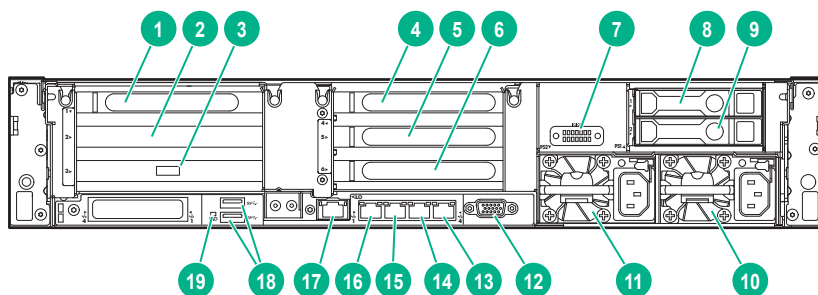
Part	Spares Part Number	Description	Hot plug
OS Hard disk drive (900GB)	653971-001	SPS-DRV HD 900GB 6G SAS 10K 2.5 DP EN SC	Yes
Hard disk drive (4 TB)	695842-001	SPS-DRV HD 4TB 3.5 7.2K 6G SAS SC MDL	Yes
SmartArray RAID Controller	749796-001	SPS-BD AROC P440ar Cntrlr	No
SmartArray Battery Pack	815983-001	SPS-BATT PACK ENHANCED MegaCell 96W	No
Power supply	754381-001	SPS-PS 800W FS PlatinumPlus	Yes
SAS expander	761879-001	SPS-BD Smart Array PCIe SAS Expander	No
Cable, HD Mini SAS to Mini SAS, 16 inch 3500/5100 between the SAS expander and the p1224	694008-002	Cable, HD Mini SAS to Mini SAS, 16 inch 3500/5100 Defender to shiner	No
Internal SAS Ribbon Cable from SAS expander to the backplane	784627-001	SPS-CBL Mini SAS 12LFF + 15LFF Kit	No
RAID controller p1224	842475-001	SPS-PCA 4e/4i w/o Encryption	No
Mini DIMM module (cache module for p1224)	633542-001	SPS-BD DDR3 MINI DIMM MOD 1Gx72	No
SuperCapacitor (for p1224)	660093-001	SPS-CA CAPACITOR 36in FL	No
SAS/SATA backplane board - Mounts on the rear of the 2-bay small form factor (SFF) hard drive cage	777280-001	SPS-PCA dl380 2-SFF rear Backplane	No
Mini-SAS cable kit (Includes six cables) - For connecting between the 8-bay and 2-bay small form factor (SFF) hard drive cages and the H240 host bus adapter or the P440ar controller board	784629-001	SPS-CA SAS 2SFF+*SFF+ AROC/H240+P440 Kit	No

Table 4 HPE StoreOnce 5100 System, BB915A (continued)

Part	Spares Part Number	Description	Hot plug
Processor	762447-001	SPS-PRO E5-2640v3 8C 2.6GHz 90W	No
Memory DIMM	774172-001	SPS-MEMORY DIMM 16GB 2Rx4 PC4-2133R-15	No
System board	775400-001	SPS-PCA dl380/dl360 Gen9 SYS I/O	No
PCIe riser 1 PCA (for PCIe slots 1 to 3)	777281-001	SPS-PCA dl380 3-S x8 PCI-E Riser	No
PCIe riser 2 PCA (for PCIe slots 4 to 6)	777283-001	SPS-PCA dl380 3-S 2 x16 x8 PCI-E riser2	No
Backplane for data disks	777284-001	SPS-PCA DL360/380 12-LFF SAS Backplane	No
Fan module	777286-001	SPS-Fan Module (High PERF) DL38x Gen9	Yes
Processor heatsink	777290-001	SPS-Heatsink ASSYSTD 105WDL380	No
Fan cage	777294-001	SPS-FAN CAGE DL38x	No
Cable from rear to motherboard	814059-001	SPS-Flex Bay (2SFF ODD USB/VGA)	No

NOTE: Optional hardware — 10GbE Network cards, FC cards, and SFP transceivers are not part of the basic configuration. See [Optional Hardware FRUs \(page 14\)](#) for details of Optional Hardware FRUs.

HPE StoreOnce 3500 Series and HPE StoreOnce 5100 Systems are both based on the HPE ProLiant DL380p server. For Mechanical and System components see Figures 3 and 4. The following drawing shows the rear view of the HPE StoreOnce 5100 System. It is also valid for the HPE StoreOnce 3500 Series, apart from the two OS disks.

Figure 5 HPE StoreOnce 5100 System and HPE StoreOnce 3500 Series rear view

1	Slot 1, available for Optional Hardware	2	Slot 2, SAS expander card
3	Slot 3, RAID controller card	4	Slot 4, available for Optional Hardware
5	Slot 5, available for Optional Hardware	6	Slot 6, available for Optional Hardware
7	Optional serial port	8	OS drive 1 (not HPE StoreOnce 3500 Series)
9	OS drive 2 (not HPE StoreOnce 3500 Series)	10	Power supply 1 (PS1)

11	Power supply 2 (PS2)	12	Video connector
13	1Gb RJ45 Port 4	14	1Gb RJ45 Port 3
15	1Gb RJ45 Port 2	16	1Gb RJ45 Port 1 (eth0)
17	iLO4 connector	18	USB connectors
19	Rear UID LED		

HPE StoreOnce 5100 System Capacity Upgrade Kit Components

The HPE StoreOnce 5100 System (48 TB) Capacity Upgrade Kit (BB916A) is a 2U disk enclosure containing twelve 4 TB disks. It includes a hot spare disk. The StoreOnce configuration has a single I/O module (in the top location) plus a “blank” module.

The following table lists Spares Part Numbers for the main components in the storage enclosure.

NOTE: This is an offline list, created from partsurfer. If there is a problem with these Spares Part Numbers, check the online source at: <http://partsurfer.hpe.com/search.aspx>. If the problem exists in the online source, use the feedback form to log the problem: <http://partsurfer.hpe.com/ContactUs.aspx>.

Table 5 HPE StoreOnce Capacity Upgrade, BB916A

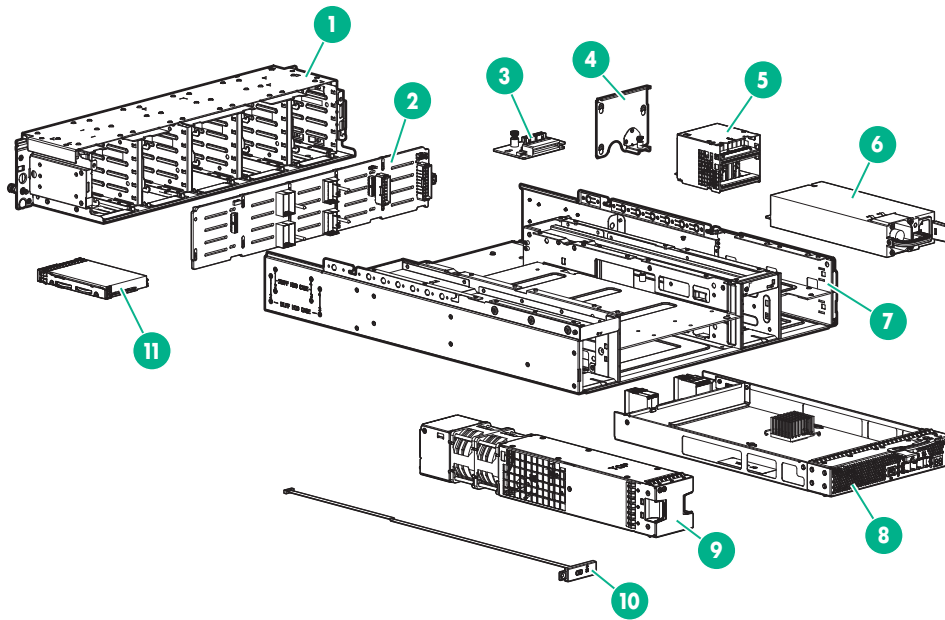
Part	Spares Part Number	Description	Hot plug?
Enclosure backplane	832031-001*	SPS-PCA Backplane BackPlane LFF HDD (1-based/IOM)	No*
Hard disk cage	781531-001	SPS Cage; LFF Hard Disk Drive (HDD)	No
Fan assembly	781532-001	SPS Fan Assembly	Yes
I/O module	781867-001*	SPS I/O Module; LFF 2 Port	No*
Power distribution board	808276-001	SPS-VRM Assy	No
Power supply	536404-001	SPS-PWR SUPPLY,460W,12V,HTPLG,RED	Yes
Rail kit	700520-001	SPS-RAIL KIT 2U	No
HDD, hard disk drive	697966-001	SPS-DRV HD 4TB 3.5 7.2K 6G SAS QR MDL	Yes
Fan control card cable	740127-001	SPS - Fan interconnect cable	No
HP external 1 m (3 ft) HD Mini-SAS x 4 to HD Mini-SAS x 4 cable supplied with the product	716195-B21		No
HP external 0.5 m (1.5 ft) HD Mini-SAS x 4 to HD Mini-SAS x 4 cable	691970-001		No
HP external 2 m (6 ft) HD Mini-SAS x 4 to HD Mini-SAS x 4 cable	716197-B21		No



IMPORTANT: * Items are not hot-plug because there is only one I/O module.

NOTE: A 1 metre SAS cable is supplied with the product. 0.5 metre and 2 metre cables may also be purchased. Cables over 2 metres are not supported.

Figure 6 HPE 5100 Capacity Upgrade System components



- | | |
|---|-----------------|
| 1 Drive cage | 2 Backplane |
| 3 Interface between fan and backplane | 4 Airguard |
| 5 Voltage Regulator (VRM) or power module | 6 Power supply |
| 7 Enclosure | 8 I/O module |
| 9 Fan module | 10 Rear unit ID |
| 11 Disk drive | |

Optional Hardware Components

All Optional Hardware PCIe cards and SFP transceivers that support connection to a 10GbE network and/or a FC SAN can be swapped like for like. The following table lists the part numbers for HPE StoreOnce Optional Hardware. Optional Hardware is supported with the HPE StoreOnce 5100 System and HPE StoreOnce 3500 Series. It is not supported with the HPE StoreOnce 3100 System.

Table 6 Optional Hardware Part Numbers

Description	Part	Part number	Hot plug?
10GbE-T network card	SPS-BD ETHERNET 10GB 2P 530T ADPTR	657128-001	No
10GbE SFP network card	SPS-PCA Ethernet 10Gb 2P 557 SFP-ADPTR	792834-001	No
10GbE SFP transceiver	SPS-SFP+, 10G BLc, SR	456096-001	Yes
8Gb FC card	SPS-BD, HBA, 82q DP FC PCIe	489191-001	No
8Gb FC transceiver	SPS-SFP, 8GB, FC SHORT WAVE	468508-001	Yes

-
- ① **IMPORTANT:** Providing the replacement card is of the same type and is installed in the same slot, no activation or licensing is required. For guidelines about replacing Optional Hardware, see [Replacing Optional Hardware \(page 54\)](#).
-

2 General precautions and safety guidelines

Required tools

The following items are required for some replacement procedures:

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

Component replacement guidelines

⚠ 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 the HPE StoreOnce 5100 System Capacity Upgrade enclosure.

- Before replacing a component, verify its status to ensure it needs replacement. To verify component status, check the status LEDs, event logs, product-specific logs, and management utilities for component health and location information. For more information on interpreting the LED displays, see [Using LEDs to diagnose problems \(page 23\)](#).
- 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.
- HPE 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:
 - Kinking or 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. Observe all warnings on the product and in the operating instructions to reduce the risk of bodily injury, electric shock, fire, and damage to the equipment.

General precautions

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

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:

	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.
	This symbol indicates the presence of a hot surface or a hot component. If this surface is contacted the potential for injury exists. WARNING: To reduce the risk of injury from a hot surface or a hot component, allow the surface or component to cool before touching.
	This symbol indicates the presence of hazardous energy circuits or electric shock hazards. Refer all servicing to qualified personnel. WARNING: To reduce the risk of injury from electric shock hazards, do not open this enclosure. Refer all maintenance, upgrades, and servicing to qualified personnel.

	These symbols on power supplies or systems indicate that the equipment is supplied by multiple sources of power. WARNING: To reduce the risk of injury from electric shock, remove all power cords to completely disconnect power from the power supply or system.
	This symbol indicates the presence of a moving fan blade. If the spinning blades are contacted, the potential for injury exists. WARNING: Hazardous moving parts. Keep away from moving fan blades. To reduce the risk of injury allow the fan blades to stop spinning before touching.
	This symbol indicates an area where potential hazards may exist. WARNING: To reduce the risk of injury, do not access areas displaying this symbol. Refer all maintenance, upgrades, and servicing to qualified personnel.

3 Identifying problems

POST messages and troubleshooting

The HPE StoreOnce Management Console (GUI and Command Line Interface) are the primary sources of troubleshooting information. However, they do not capture power-on self-test hardware-related issues. Always refer to the appropriate *HPE ProLiant Gen9 Maintenance and Service Guide* for Power-On Self-Test (POST) information. To view POST messages you will need a system console attached to the HPE StoreOnce System.

Using the StoreOnce GUI to identify a problem

As long as Email and SNMP have been set up correctly, all messages and alerts will be automatically forwarded to the appropriate recipients.

The following examples show how to use the StoreOnce GUI to identify a missing disk and the details associated with an event. See the *HPE StoreOnce 3100, 3520, 3540 and 5100 System User Guide* for more details.

Viewing the Events Log

Select **Events**. The alert is recorded in the Events window with Event Details at the bottom of the window.

The screenshot displays the HPE StoreOnce Management Console interface. On the left is a 'Navigator' pane with a tree view containing 'StoreOnce', 'Hardware', 'Storage', 'Reporting Central', 'Device Configuration', 'Remote Support', and 'Events' (which is selected). The main area is divided into two sections: 'Events' and 'Event Details'.

The 'Events' section shows a table of events. The table has columns: Level, Time, Event..., Event Code, and Event. The event list is titled 'Events 1 - 20 of 951'. One event is highlighted with a red 'X' icon in the Level column, indicating an error or alert.

Level	Time	Event...	Event Code	Event
Info	Nov 17 18:...	Audit	E01070015	Audit event [Login Date: Nov 17 18:37:21, User Admin, Host 16.184.3.29 (GUI)]
Info	Nov 17 17:...	Audit	E01070015	Audit event [Logout due to inactivity Date: Nov 17 17:32:48, User Admin, Host 16.26.46.165 (GUI)]
Info	Nov 17 15:...	Audit	E01070015	Audit event [Login Date: Nov 17 15:09:14, User Admin, Host 16.26.46.165 (GUI)]
Info	Nov 17 14:...	Audit	E01070015	Audit event [Login Date: Nov 17 14:53:24, User Admin, Host 16.29.16.153 (CLI)]
Error	Nov 17 14:...	System	E07170003	component:volume, status:DEGRADED, location:volume LUN_C3_P1_V1 in pool C3_P1 in storageClus...
Error	Nov 17 14:...	System	E07030004	component:drive, status:MISSING, location:drive in bay 8 in driveEnclosure Port: 11 Box: 1 S/N:PDNRB...
Info	Nov 17 14:...	Audit	E01070015	Audit event [Login Date: Nov 17 14:40:33, User Admin, Host 16.29.16.153 (GUI)]
Info	Nov 17 14:...	Audit	E01070015	Audit event [Login Date: Nov 17 14:40:07, User Admin, Host 16.29.16.153 (CLI)]
Info	Nov 17 14:...	Audit	E01070015	Audit event [Login Date: Nov 17 14:39:09, User Admin, Host 16.29.16.153 (CLI)]
Info	Nov 16 21:...	Audit	E01070015	Audit event [Logout due to inactivity Date: Nov 16 21:32:48, User Admin, Host 16.184.3.29 (GUI)]

The 'Event Details' section provides information for the selected event (E07030004):

- Severity:** ALERT
- Sequence ID:** 1871
- Event Code:** E07030004
- Message:** component:drive, status:MISSING, location:drive in bay 8 in driveEnclosure Port: 11 Box: 1 S/N:PDNRB0AZT6G0I5, Message: The drive is missing or has failed. Diagnostic message: Reseat the drive. If reseating the drive does not resolve the issue, replace the drive., uuid:Drive_Missing_b1000082, eventName:DRIVE_MISSING, eventId:00030004, level:ALERT, category:SERVER, overallStatus:DEGRADED, name:ch_3500, engine name: hpccj435035s
- Root Cause:** Please refer to the event message, for specific details of the hardware event.
- Recommended Action:** Reference your service level agreement to determine whether you or HP is obligated to resolve component failure.

Viewing the failed disk in the Hardware tree

The following example shows the **Hardware** tree expanded to show the disk failure in the expansion shelf.

The screenshot shows the HPE StoreOnce GUI. On the left, the 'Navigator' pane shows the 'Hardware' tree expanded, with 'Drives' selected. The 'System Status' pane at the top shows 'Total Events' as 60 (red), 58 (yellow), and 833 (blue). The main 'Drives' table lists 12 drives. The 11th drive, 'ML...', is marked with a red 'X' and has a message: 'The drive is missing o... Reseat the drive. If re...'. The 'Properties' column for this drive shows 'capacity:4.00 TB, driv...'. The 'Diagnostic Message' column is empty.

St...	Volu...	Type	Name	UUID	Seri...	Model	Fir...	Loc...	Properties	Message	Diagnostic Message
OK	LUN ...	drive	Disk ...	5000...	S1Z...	MB4...	HPD5	Port...	capacity:4.00 TB, driv...	-	-
OK	LUN ...	drive	Disk ...	5000...	S1Z...	MB4...	HPD5	Port...	capacity:4.00 TB, driv...	-	-
OK	LUN ...	drive	Disk ...	5000...	S1Z...	MB4...	HPD5	Port...	capacity:4.00 TB, driv...	-	-
OK	LUN ...	drive	Disk ...	5000...	S1Z...	MB4...	HPD5	Port...	capacity:4.00 TB, driv...	-	-
OK	LUN ...	drive	Disk ...	5000...	S1Z...	MB4...	HPD5	Port...	capacity:4.00 TB, driv...	-	-
OK	LUN ...	drive	Disk ...	5000...	S1Z...	MB4...	HPD5	Port...	capacity:4.00 TB, driv...	-	-
OK	LUN ...	drive	Disk ...	5000...	S1Z...	MB4...	HPD5	Port...	capacity:4.00 TB, driv...	-	-
OK	LUN ...	drive	Disk ...	5000...	S1Z...	MB4...	HPD5	Port...	capacity:4.00 TB, driv...	-	-
OK	LUN ...	drive	Disk ...	5000...	S1Z...	MB4...	HPD5	Port...	capacity:4.00 TB, driv...	-	-
ML...	LUN...	drive	-	Driv...	-	-	-	Port...	capacity:4.00 TB, driv...	The drive is missing o...	Reseat the drive. If re...
OK	LUN...	drive	Disk ...	5000...	S1Z...	MB4...	HPD5	Port...	capacity:4.00 TB, driv...	-	-
OK	LUN...	drive	Disk ...	5000...	S1Z...	MB4...	HPD5	Port...	capacity:4.00 TB, driv...	-	-
OK	LUN...	drive	Disk ...	5000...	S1Z...	MB4...	HPD5	Port...	capacity:4.00 TB, driv...	-	-
OK	LUN...	drive	Disk ...	5000...	S1Z...	MB4...	HPD5	Port...	capacity:4.00 TB, driv...	-	-

Using the StoreOnce CLI to identify a problem

The following StoreOnce CLI commands can also be used to identify hardware problems and to navigate the hardware tree for details about a specific component.

- `hardware show problems`
- `hardware show status <Dev-id>`

The following example illustrates how to use the StoreOnce CLI commands to find out more about the disk problems we have identified on the StoreOnce GUI. See the *HPE StoreOnce CLI Reference Guide* for more details.

1. To display warnings for all hardware components run the StoreOnce CLI command:

```
hardware show problems
```

This will assist you in identifying the storage cluster and component that is causing a problem.

2. To drill down to the hardware component causing the problem run the StoreOnce CLI command, `hardware show status <Dev-id>` iteratively, where `<Dev-id>` is the component with a DEGRADED status until the required component is displayed (it will have a status of FAILED or MISSING). For example::

```
# hardware show status
```

Name	Dev-id	Status
HPXXXXNNNNNS	37373937-3133-5A43-4A34-333530333553	DEGRADED
p1224 Storage System	051dbf3f-0000-1000-8017-533646303433	DEGRADED

```
# hardware show status 051dbf3f-0000-1000-8017-533646303433
```

Name	Dev-id	Status
p1224 Storage System	051dbf3f-0000-1000-8017-533646303433	DEGRADED
Drive Cage	5001438030123680	DEGRADED

Pools	pools-1	DEGRADED
Controller 1	50014380266A0140	OK

```
# hardware show status 5001438030123680
```

Name	Dev-id	Status
Drive Cage	5001438030123680	DEGRADED
Disk 5000C50076A2E72F	5000C50076A2E72F	OK
Disk 5000C500768723A7	5000C500768723A7	OK
Disk 5000C500768AF62B	5000C500768AF62B	OK
Disk 5000C5007689EC7B	5000C5007689EC7B	OK
Disk 5000C50076A07ACB	5000C50076A07ACB	OK
Disk 5000C5007687823F	5000C5007687823F	OK
Disk 5000C50076A033DB	5000C50076A033DB	OK
-	Drive_Missing_b1000082	MISSING
Disk 5000C50076A0D1DB	5000C50076A0D1DB	OK
Disk 5000C5007686F21F	5000C5007686F21F	OK
Disk 5000C5007688B5BB	5000C5007688B5BB	OK
Disk 5000C5007689C0A3	5000C5007689C0A3	OK

- When you reach a faulty component, you can also use the StoreOnce CLI command to display details and look at the diagnostic message for more information.;

```
hardware show status <Dev-id> details
```

NOTE: In the following example, we have truncated the output to highlight the information returned for the missing disk.

```
# hardware show status 5001438030123680 details
```

```
Name
-----
Drive Cage
  Dev-id      = 5001438030123680
  Status      = DEGRADED
  message     = -
  type        = driveEnclosure
  model       = 12G SAS Exp Card
  serialNumber = PDNRB0AZT6G0I5
  firmwareVersion = -
  location    = Port: 1I Box: 1

Disk 5000C50076A2E72F
  Dev-id      = 5000C50076A2E72F
  Status      = OK
  message     = -
  type        = drive
  model       = MB4000FCWDK
  serialNumber = S1Z0AN1R0000K45005X7
  firmwareVersion = HPD5
  location    = Port: 1I Box: 1 Bay: 1
  volumeName  = LUN 1, LUN_Pool 1_V1
  capacity    = 4.00 TB
  driveType   = HDD
  rpm         = 7200
  totalPowerOnHours = 5351
  .....
  .....
  -
    Dev-id      = Drive_Missing_b1000082
    Status      = MISSING
    message     = The drive is missing or has failed.
    type        = drive
```

```
model          = -
serialNumber   = -
firmwareVersion = -
location       = Port: 1I Box: 1 Bay: 8
volumeName     = LUN_C3_P1_V1
capacity       = 4.00 TB
driveType      = Unknown
```

```
.....
.....
Disk 5000C5007689C0A3
  Dev-id        = 5000C5007689C0A3
  Status        = OK
  message       = -
  type          = drive
  model         = MB4000FCWDK
  serialNumber  = S1Z07ETP0000K447CUZY
  firmwareVersion = HPD5
  location      = Port: 1I Box: 1 Bay: 12
  volumeName    = LUN_C3_P1_V1
  capacity      = 4.00 TB
  driveType     = HDD
  rpm           = 7200
  totalPowerOnHours = 5350
```

4. After identifying the issue that needs to be corrected, follow the instructions in the relevant chapter of this guide.
5. Be sure to check that all problems have been resolved. Re-run the StoreOnce CLI command:

```
hardware show problems
```

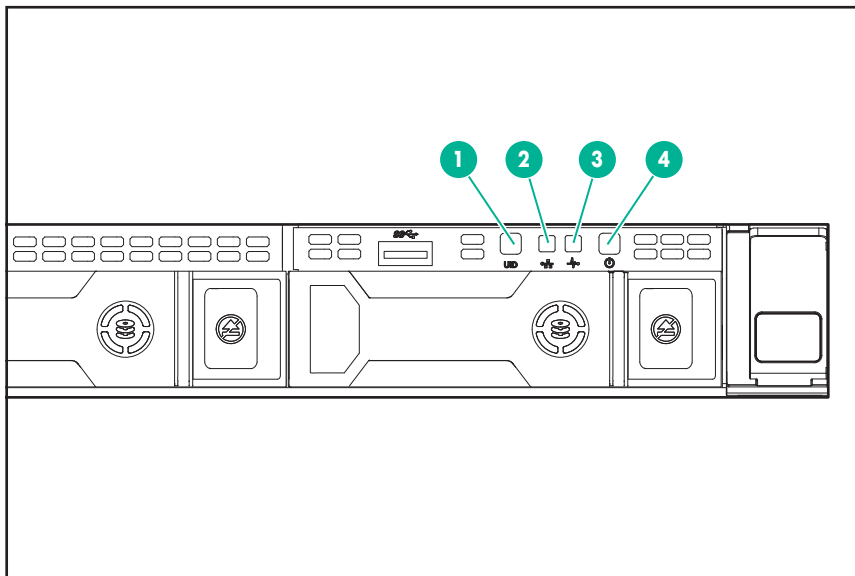
The output returned should now be blank.

Using LEDs to diagnose problems

Server LEDs (all models)

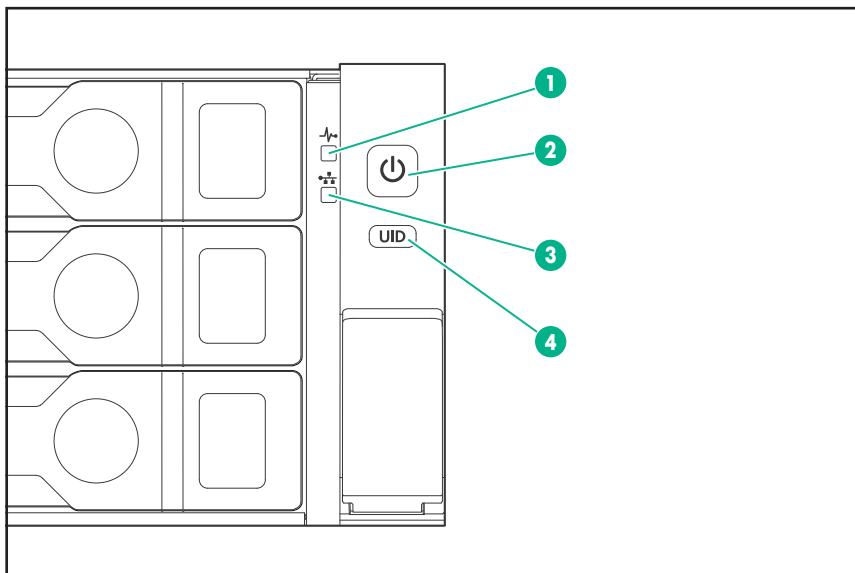
Front panel LEDs

Figure 7 Front panel LEDs, HPE StoreOnce 3100 System



1	UID LED	2	NIC status LED
3	System health LED	4	Power LED and on/off button

Figure 8 Front panel LEDs, HPE StoreOnce 3500 Series and HPE StoreOnce 5100 System



1	System health LED	2	Power LED and on/off button
3	NIC status LED	4	UID LED

Front panel LEDs and buttons behavior

Table 7

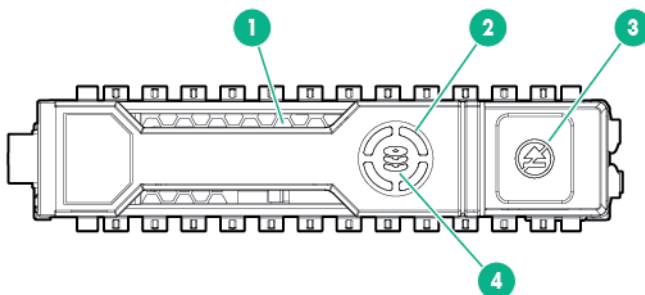
Description	Status
Health LED*	Solid green = Normal Flashing green (1 Hz/cycle per sec) = iLO is rebooting Flashing amber = System degraded Flashing red (1 Hz/cycle per sec) = System critical**
Power On/Standby button and system power LED*	Solid green = System on Flashing green (1 Hz/cycle per sec) = Performing power on sequence Solid amber = System in standby Off = No power present†
NIC status LED*	Solid green = Link to network Flashing green (1 Hz/cycle per sec) = Network active Off = No network activity
UID button/LED*	Solid blue = Activated Flashing blue: • 1 Hz/cycle per sec = Remote management or firmware upgrade in progress • 4 Hz/cycle per sec = iLO manual reboot sequence initiated • 8 Hz/cycle per sec = iLO manual reboot sequence in progress Off = Deactivated

*When all four LEDs described in this table flash simultaneously, a power fault has occurred.

**If the health LED indicates a degraded or critical state, review the system IML or use iLO to review the system health status.

†Facility power is not present, power cord is not attached, no power supplies are installed, power supply failure has occurred, or the power button cable is disconnected.

Disk drive LEDs

Figure 9 Disk drive LEDs (in servers)

- | | | |
|----|------------------------|---|
| 1. | Drive locate LED | Solid blue = The drive is being identified by a host application.
Flashing blue = The drive carrier firmware is being updated or requires an update. |
| 2. | Disk activity ring LED | Off = No drive activity
Rotating green = Drive activity |

3. Drive status LED
 - Off = The drive is not configured by a RAID controller.
 - Solid green = The drive is a member of one or more logical drives.
 - Flashing green = The drive is rebuilding or performing a RAID migration, stripe size migration, capacity expansion, or logical drive extension.
 - Flashing amber/green = The drive is a member of one or more logical drives and predicts the hard drive will fail.
 - Flashing amber = The drive is not configured and predicts the hard drive will fail.
 - Solid amber = The drive has failed
4. Do not remove LED
 - Solid white = Do not remove the drive. Removing the drive causes one or more of the logical drives to fail.
 - Off = Removing the drive will not cause a logical drive to fail.

Systems Insight Display LEDs

The HP Systems Insight Display LEDs represent the system board layout. The display enables diagnosis with the access panel installed. Refer to the *HPE ProLiant Maintenance and Service Guide* for more information.

Rear panel LEDs

Figure 10 Rear panel LEDs, HPE StoreOnce 3100 System

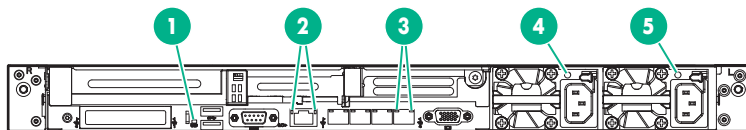


Figure 11 Rear panel LEDs, HPE StoreOnce 3500 Series and HPE StoreOnce 5100 System

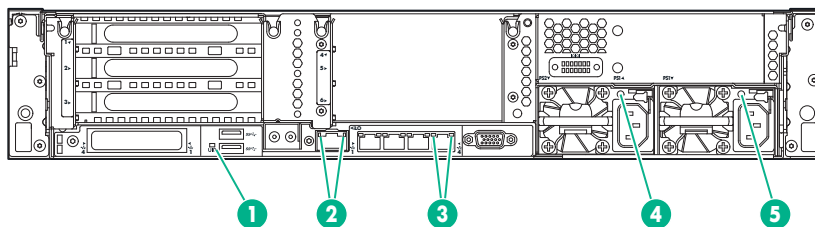


Table 8 Rear panel LED behavior

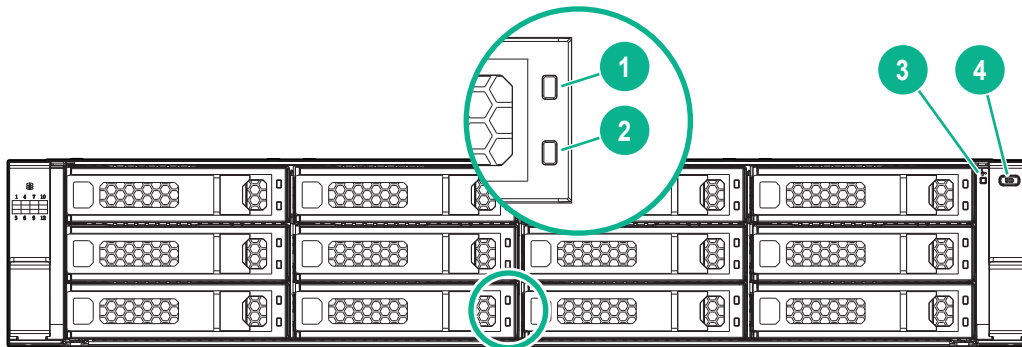
Item	Description	Status
1	UID LED	Off = Deactivated Solid blue = Activated

Table 8 Rear panel LED behavior (continued)

Item	Description	Status
		Flashing blue = System being managed remotely
2	iLO4 LED	Right = iLO link LED Left = iLO activity LED
3R	NIC link LED	Off = No network link Green = Network link
3L	NIC activity LED	Off = No network activity Solid green = Link to network Flashing green = Network activity
4	Power supply 2 LED (optional on HPE 3100)	Off = System is off or power supply has failed. Solid green = Normal
5	Power supply 1 LED	Off = System is off or power supply has failed. Solid green = Normal

Storage enclosure LEDs (HPE StoreOnce 5100 System only)

Figure 12 Capacity Upgrade front view



- 1. Disk drive UID
- 2. Disk drive status LED
- 3. System status LED
- 4. System locate UID

Front panel system status LEDs

Table 9 Front panel system status LEDs

Indicator ¹	Display	Description
System status LED	Green on	Normal operation
	Amber on	Critical fault.
	Amber flashing	Non-critical fault.

Table 9 Front panel system status LEDs *(continued)*

Indicator ¹	Display	Description
Locate UID	Off	Normal operation
	Blue on	Location requested. Safe to power off.
	Blue flashing	Location requested. Do not power off. Indicates that maintenance is in progress. For example, firmware updating.

¹ These indicators are also located on the rear panel directly above power supply 2.

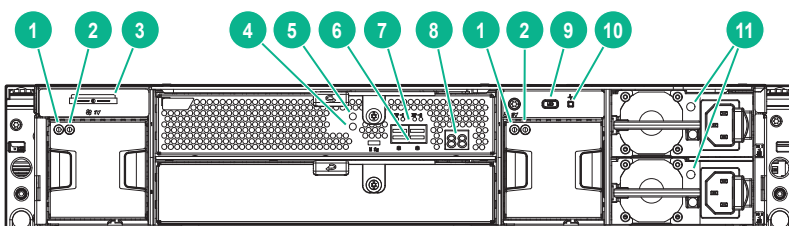
Disk drive LEDs

Table 10 Disk drive status LEDs

Indicator	Display	Description
Status LED	Green on, amber off	No fault, no I/O
	Green flashing, amber on	No fault, active I/O
	Green off, amber on	Fault
	Green on, amber flashing	Predictive fault, no I/O
	Green flashing, amber flashing	Predictive fault, active I/O
Locate UID	Off	Normal operation
	Blue on	Location requested. Safe to remove.
	Blue flashing	Location requested. Do not remove. Indicates that maintenance is in progress. For example, firmware updating.

NOTE: See [Hot spare disk and LEDs on the HPE 5100 System \(page 49\)](#) for information about the LED behavior on the hot spare disk.

Figure 13 Capacity Upgrade rear view



- | | |
|---|--------------------------|
| 1. Fan locate UID | 2. Fan status LED |
| 3. Pullout tab with serial number label | 4. I/O module status LED |
| 5. I/O module locate UID | 6. Data ports |
| 7. Data port status LEDs | 8. Seven-segment display |
| 9. System locate UID | 10. System status LED |
| 11. Power supply status LED | |

Power supply LEDs

Table 11 Power supply module status LED

Indicator	Display	Description
Status LED	Green on	Normal operation
	Amber on	Fault
	Amber flashing	Predictive fault or non-optimal performance

Fan LEDs

Table 12 Fan module status LEDs

Indicator	Display	Description
Status LED	Green on	Normal operation
	Amber on	Fault
	Amber flashing	Predictive fault or non-optimal performance
Locate UID	Off	Normal operation
	Blue on	Location requested. Safe to remove.
	Blue flashing	Location requested. Do not remove.

I/O module LEDs

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

Table 13 I/O module status LEDs

Indicator	Display	Description
7-segment display	On	Indicates the enclosure number or an error/warning code
Data ports (DP-1, DP-2)	Green on, amber off	Link at high speed with no activity
	Green flashing, amber off	Link at high speed with activity
	Green on, amber on	Link at low speed with no activity
	Green flashing, amber on	Link at low speed with activity
	Green off, amber on	No link or no cable connected
	Green flashing, amber flashing	Location requested
I/O module status LED	Green on, amber off	Normal operation
	Green flashing, amber off	Shutdown in progress, no fault
	Green off, amber on	Fault
	Green flashing, amber on	Shutdown in progress, fault
	Green on, amber flashing	Predictive failure
	Green flashing, amber flashing	Shutdown in progress, predictive failure
Locate UID	Off	Normal operation

Table 13 I/O module status LEDs *(continued)*

Indicator	Display	Description
	Blue on	Location requested. Safe to remove.
	Blue flashing	Location requested. Do not remove. Indicates that maintenance is in progress. For example, firmware updating.

4 Power on/off, firmware upgrades and other processes

This chapter describes:

- Power on/off requirements
- How to use the StoreOnce GUI or CLI to upgrade firmware.
- How to check StoreOnce software revisions and obtain updates
- How to use the StoreOnce CLI to run a confidencecheck report on the system
- How to reset the system to the default HP password

Power on/off requirements

Many of the maintenance procedures described in this guide require the system to be powered off. Advise users of the Maintenance window when the HPE StoreOnce System will be unavailable and use the StoreOnce GUI or CLI to power off cleanly and then disconnect the system from the power supply.

To power off

- StoreOnce GUI: Select **Maintenance** from the Navigator and click **Shutdown**.
- StoreOnce CLI: Use the StoreOnce CLI command `system shutdown`.

HPE StoreOnce 5100 System only: Any storage enclosure attached to the head server is automatically powered off at the same time. Storage enclosures do not have separate power on/off buttons but should be unplugged from the power supply before carrying out maintenance activities.

To power on

HPE StoreOnce 5100 System only: Reconnect all storage enclosures to the power supply first. They are automatically powered on. Allow the power on to complete before powering on the head server; wait for the LEDs to show solid green..

Press the Power On button on the HPE StoreOnce System to power up the appliance.

❗ **IMPORTANT:** Before carrying out maintenance activities read [General precautions and safety guidelines \(page 16\)](#).

Upgrading BIOS or hardware firmware components

NOTE: It is a good idea to enable Remote Event Suppression mode when upgrading firmware and software. When enabled, Remote Event Suppression flags all outbound event messages to let the HPE Support team know that the system is undergoing some form of maintenance, such as network reconfiguration, that does not require a case to be raised with HPE Support. On the StoreOnce GUI select **Events** in the Navigator and go to the **Settings** tab. Or use the StoreOnce CLI command `system enable remoteeventsuppression "reason"`, as described in the *HPE StoreOnce System CLI Reference Guide*.

The currently supported firmware component updates are embedded in the StoreOnce software. Therefore, to ensure that you are using the currently supported firmware component updates, always use the StoreOnce GUI or the StoreOnce CLI to check and update the BIOS and hardware firmware components. Do not upgrade BIOS or hardware firmware components individually using downloads from the HPE Support website.

Performing firmware maintenance from the StoreOnce GUI

1. Select **Firmware** from the **Device Configuration** menu item in the Navigator.

2. Click **Scan** to perform a check on the currently installed firmware versions for all components associated to the selected node. This will populate the firmware tabs. This may take several minutes to run.

NOTE: The scan will fail if a firmware update is already in progress.

3. Look for components that have a **Recommended Action** of either **Upgrade** or **Downgrade**. After you have run **Scan** or **Scan All**, components will automatically be selected for upgrade or downgrade.

NOTE: When the firmware updates are initiated, the backup devices will be taken offline. Before performing this step, check that there are no outstanding backup jobs pending.

- If there are only one or two, click in the appropriate check box to select them and click **Update Selected**.
- If there are many, click **Update All**. This will attempt to update all components that are in the state where there is an update recommended; it will not try to update components that do not need an update.

The **Status** field will show which components are being updated and which updates have been completed.

4. When all updates are completed, a reboot may be required.

NOTE: In some cases, when the firmware update has completed, you will need to perform a cold boot. A pop-up message will appear on your GUI screen after updates are completed if a cold boot is required (a cold reboot is a physical power cycle of the appliance while waiting for 60 seconds before powering the appliance back up).

Performing firmware maintenance from the StoreOnce CLI

1. Run the StoreOnce CLI command to show the current status of firmware

```
# hardware show firmware <node|storage>
```

2. Check the **Action** column to see if any firmware needs upgrading.

- ① **IMPORTANT:** Do not shutdown or reboot your system or any system component until step 5. Special instructions may apply. See step 5 for details.

3. Before upgrading firmware, stop service sets and verify that they have stopped before proceeding.

```
serviceset stop all to stop service sets and ensure that no jobs are running
```

```
service show status to verify that all service sets have stopped. It may take up several minutes for all service sets to stop.
```

```
# service show status
```

```
Service Set 1      Status
-----
Overall           : Not Running
```

```
#
```

4. Use the `hardware update firmware <node|storage>` command, as required. For example, there may be instances where replacement hardware may need a firmware downgrade to bring it in line with the supported firmware version of the installed StoreOnce software on the system being maintained. Refer to the *HPE StoreOnce CLI Reference Guide* for more information about command parameters and syntax.

The command will be applied across all server components or across all storage components.

```
hardware update firmware <node|storage>
```

5. After the firmware has updated, HPE recommends a cold reboot as follows:

- Power down the node(s) using the StoreOnce CLI command:
`system shutdown`
- After the system has completely shut down, wait at least one minute before powering on using the Power On button on the server(s).

NOTE: A cold reboot is required if the network card or storage controller card firmware has been updated. For other components, it is acceptable to reboot the system using the StoreOnce CLI command:

`system reboot`

Upgrading StoreOnce software

To establish which StoreOnce software version is installed, click on **StoreOnce** in the Navigator and look at the **Software Revision** under System Information.

Check HPE Support to find out if a later software release is available at 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.

Running a system self test

The StoreOnce CLI command, `system confidencecheck`, runs a self-test on the system and produces a report of any problems. It is good practice to run this command before and after maintenance activities. Refer to the HPE StoreOnce System CLI Reference Guide for more information about using this command.

```
system/confidencechecker# runtest all

Confidence checks running. Checks will take maximum of 60 seconds. Please wait...

#####
#                                     #
# CONFIDENCE REPORT                  #
#                                     #
#####

Report Date:      Wed Nov 18 11:55:40 UTC 2015
Product ID:       HPE StoreOnce 3540 System
Cluster S/N:      XXXXXNNNNNNXX
Version:          3.14.0-1539.3
Test Type:        all

### FILE SYSTEM REPORT #####

File System Check:
[RESULT]
    PASSED

### INTERNAL NETWORK REPORT #####

Internal Network Check is supported only on HP StoreOnce multinode products.

### EXTERNAL NETWORK REPORT #####

External Network Check:
[RESULT]
    PASSED

### SAS CONFIGURATION REPORT #####

Sas Configuration Check is supported only on HP StoreOnce multinode, 5500 and 4900 backup products.

### NOTE #####

For any warning or error messages in this report, please consult the troubleshooting
section in the customer user guide and follow the steps to perform corrective action.
```

END

Command Successful

HPresetpassword account

The HPresetpassword account provides a method for the local Admin user to recover the Admin password back to a default state.

- username = HPresetpassword
- default password = hpresetpassword

Best practice is to change the default password after installation.

This user account does not provide any access to StoreOnce functions or data that may already be on the system.

To change the password for the HPresetpassword account

1. Gain access to the local system console either using a locally attached USB keyboard and monitor or via the iLO remote console.

NOTE: This account is not accessible via a remote ssh session.

2. At the Login prompt type the username (HPresetpassword) and default password (hresetpassword):
3. A list of available commands will be presented.
reset: Reset the 'Admin' password to 'admin'
manage: Change the 'HPresetpassword' user's password
help: List available commands
exit: Log out
4. Run the command **manage** to change the password for the HPresetpassword user. At the prompts provide:
 - **(current) UNIX password:** the default at installation is **hresetpassword**
 - **New UNIX password:** the new password should be strong and memorable; it will not be accepted if it is weak, for example a dictionary name
 - **Retype new UNIX password:** re-enter the new password to confirm it
5. Type **exit** to log out.
6. Store the new password securely in an offline Password Security tool.

To reset the password for the local Admin user

1. Gain access to the local system console either using a locally attached USB keyboard and Monitor or via iLO remote console.
2. At the Login prompt type: **HPresetpassword**
3. When prompted for the password enter the current password. The default is **hresetpassword**, but if you are following best practices you will have changed this after installation.
4. Once logged in a list of available commands will be presented.
5. Type **reset**; this will immediately reset the default password of the **Admin** user to **admin**.
6. Type **exit** to log out.

5 Replacing the system's motherboard

This chapter highlights the information that is specific to HPE StoreOnce Systems. For detailed, step-by-step instructions on replacing the system's motherboard, refer also to the appropriate ProLiant Maintenance and Service Guide.

- ❗ **IMPORTANT:** If the status of the cache module on the failed motherboard is OK, transfer it to the replacement motherboard. When replacing the motherboard make sure that all items on the old motherboard are re-installed on the replacement motherboard, for example the SAS cables that connect to the internal disks in the server.

This chapter describes the following StoreOnce-specific activities:

- If possible, obtain iLO4 license details and 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.
- After replacing the motherboard and restoring internal components to their correct locations, reconfigure BIOS settings and iLO 4 settings during boot up.
- Review and update firmware, if required. See [Upgrading BIOS or hardware firmware \(page 30\)](#).
- After power up, re-write warranty serial numbers into BIOS.

- ⚠ **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 system motherboard before replacing the motherboard.

Before replacing the motherboard—iLO4 licenses

All products are shipped with paper copies of the iLO4 licenses. If you no longer have these licenses and the board is still working for the iLO4 GUI connection via its management Ethernet port, make a note of the license before you remove the motherboard. (If it is not working, contact HPE Support.)

To identify the Activation key:

1. Log on to the iLO4 GUI.
2. Select the **Administration** Tab.
3. Select **Licensing** and make a note of the Activation Key.

Before replacing the motherboard—component configuration

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

- HPE StoreOnce 3100 System: Only one PCIe slot is used, slot 1 for the RAID controller card.
- HPE StoreOnce 3500 Series and HPE StoreOnce 5100 System: This system supports Optional Hardware. Slots 2 and 3 are always used for the SAS expander card and the RAID controller card, respectively, but the remaining four slots may be configured with 10GbE network and/or Fibre Channel cards. Make a note of the configuration and be sure to re-install the cards in the exact same slots.
- HPE StoreOnce 5100 System only: If Capacity Upgrade Kits are connected, make a note of the first in the daisy chain sequence. The cabling must be reconnected from the SAS controller card to the correct Capacity Upgrade Kit for the server.

NOTE: For information about replacing RAID cards and internal SAS cabling, refer to [Replacing the RAID controller and components \(page 41\)](#). For information about DIMM locations see [DIMM locations \(page 35\)](#).

Motherboard spares part number and System Maintenance switch

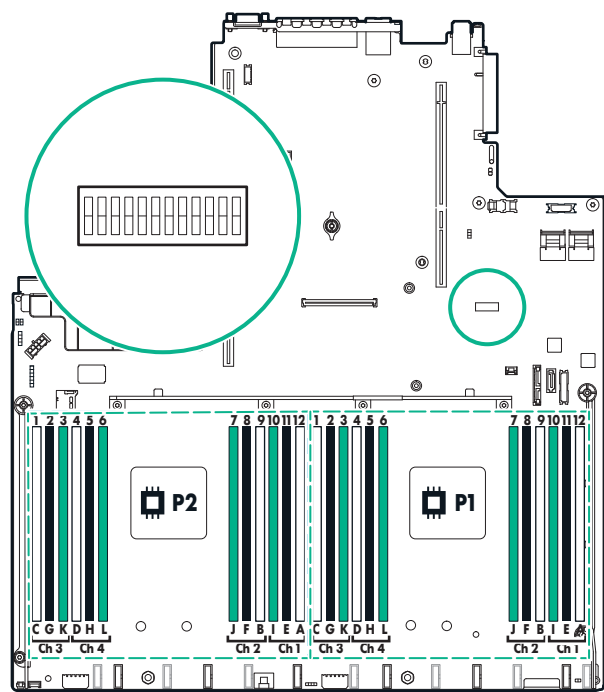
The motherboard for the HPE StoreOnce 3100 System, HPE StoreOnce 3500 and 5100 System is the standard DL360/DL380 Gen9 motherboard, spares part number 775400-001.

See the *DL360p Gen 9 Maintenance and Service Guide* and *DL380p Gen 9 Maintenance and Service Guide* for more information about replacing the motherboard.

❗ **IMPORTANT:** There is a default boot mode setting on the system maintenance switch on the motherboard. This should be set to UEFI and not be Legacy mode enabled (even though the BIOS setting will be Legacy Mode).

The following drawing shows a ProLiant DL380 motherboard; the location of the System Maintenance switch is the same for the ProLiant DL360 motherboard. The default value for all positions on the System Maintenance switch is OFF; this is correct for HPE StoreOnce systems.

Figure 14 Location of the system maintenance switch



DIMM locations

DIMM slots are numbered sequentially (1 to 12) for each processor. The supported AMP modes use the letter assignments for population guidelines.

Table 14 DIMM slot locations

Model	Processor	DIMM	Slots
HPE StoreOnce 5100 System	1	DIMM 1	Ch1, slot 12, A
		DIMM 2	Ch2, slot 9, B
		DIMM 3	Ch3, slot 1, C

Table 14 DIMM slot locations *(continued)*

Model	Processor	DIMM	Slots
		DIMM 4	Ch4, slot 4, D
	2	DIMM 1 DIMM 2 DIMM 3 DIMM 4	Ch1, slot 12, A Ch2, slot 9, B Ch3, slot 1, C Ch4, slot 4, D
HPE StoreOnce 3500 Series	1	DIMM 1 DIMM 2	Ch1, slot 12, A Ch2, slot 9, B
	2	DIMM 1 DIMM 2	Ch1, slot 12, A Ch2, slot 9, B
HPE StoreOnce 3100 System	1	DIMM 1 DIMM 2	Ch1, slot 12, A Ch2, slot 9, B

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

Figure 15 DIMM locations for HPE StoreOnce 5100 System

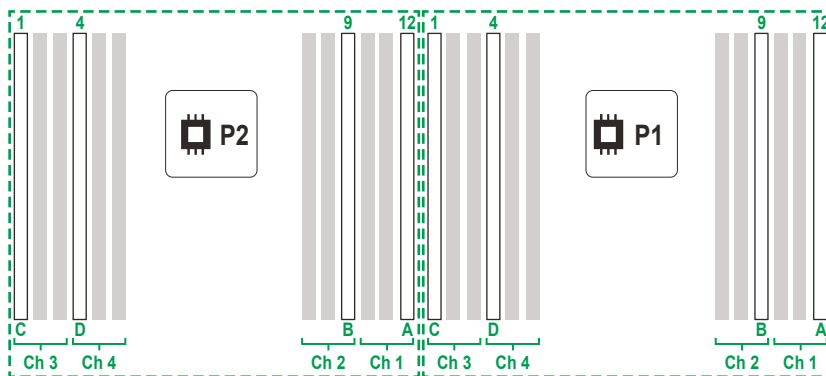


Figure 16 DIMM locations for HPE StoreOnce 3500 Series

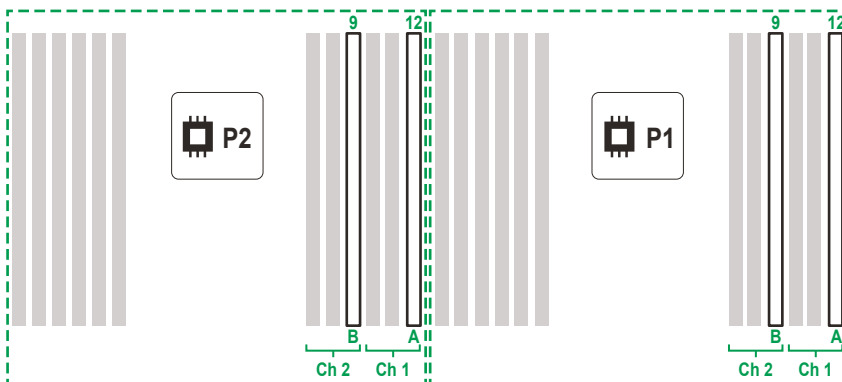
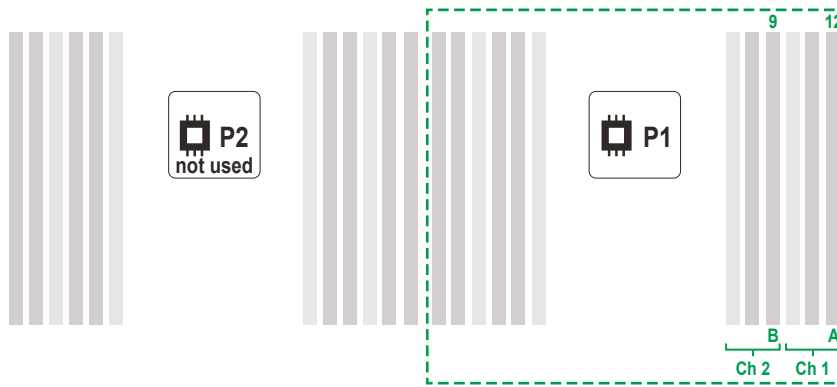


Figure 17 DIMM locations for HPE StoreOnce 3100 System

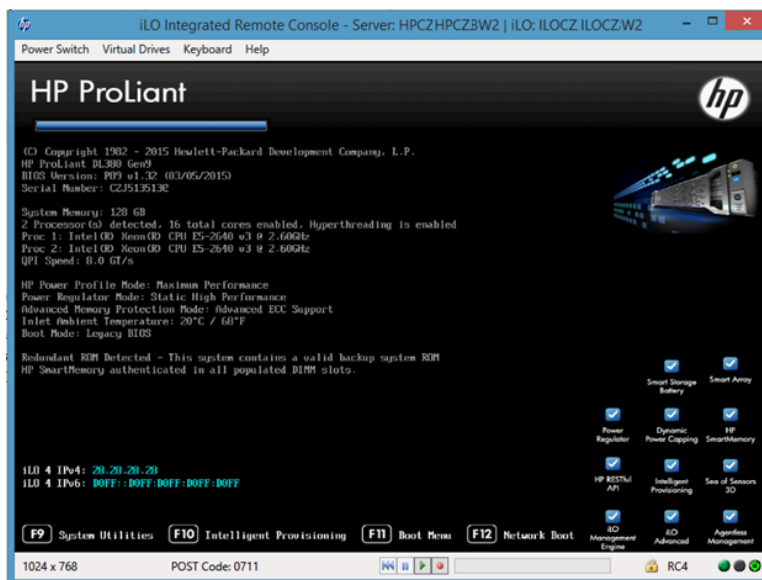


After replacing the motherboard—BIOS and iLO configuration

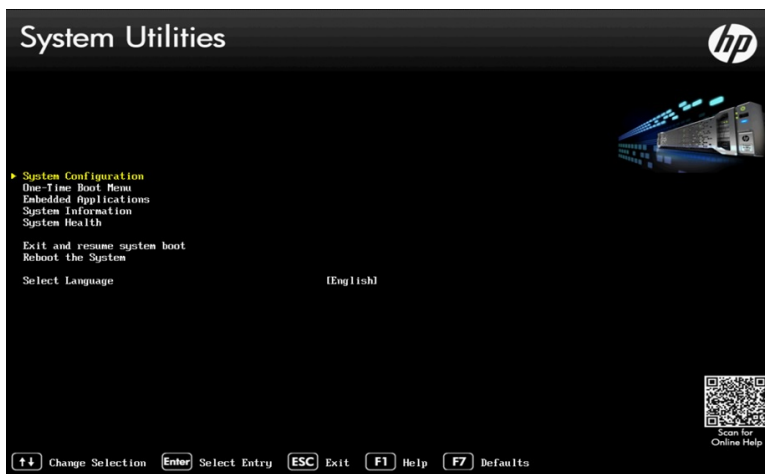
For all products you must:

1. Boot up the StoreOnce System and watch the local console; the iLO4 IP addresses are shown (IPv4 and IPv6).

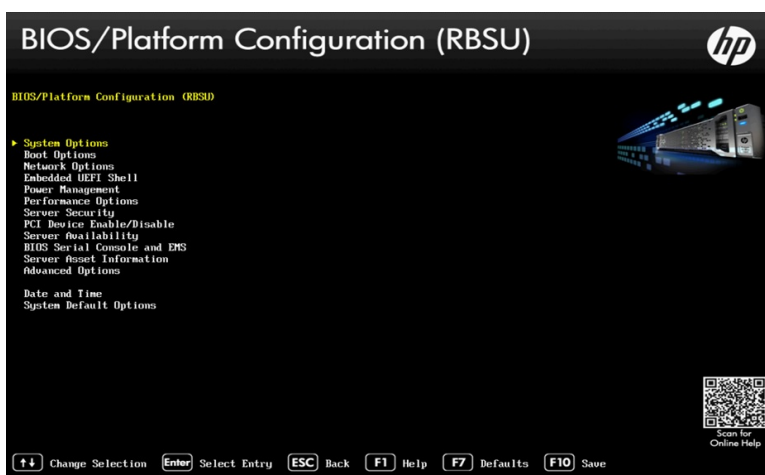
NOTE: If the iLO port is plugged into a network that provides DHCP, the acquired addresses will be shown here and you can connect to the network address in a web browser in order to configure iLO. If not, you can edit iLO4 during bootup as described later in this procedure.



2. Press F9 in the ProLiant POST screen to access **System Utilities**. Select **System Configuration**



3. Select **BIOS/Platform Configuration (RBSU) — System Options**.



4. Change the RBSU settings, as shown in the following tables.

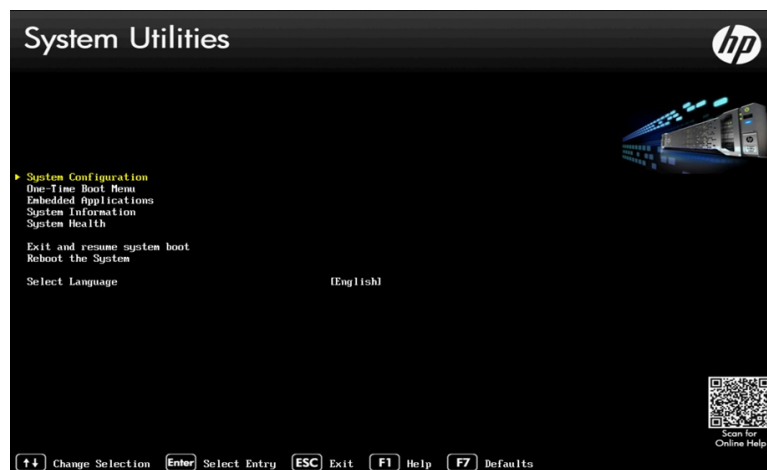
Table 15 RBSU settings for HPE StoreOnce 3100 System

Top menu item	Sub menu 1	Sub menu 2	Current default state	Change to—
Boot options	Boot Mode		UEFI Mode	Legacy BIOS mode
Power Management Options	HP Power Profile		Balanced Power and Performance	Maximum performance
Advanced Options	Advanced System ROM Option	Product ID		794750-B21
	Thermal configuration		Optimal Cooling	Increased cooling
Date and Time	Time (hh:mm:ss)			As appropriate
	Time zone		UTC-07:00, Mountain Time (US & Canada)	As appropriate
BIOS Serial Console and EMS	BIOS Serial Console Port		Auto	Physical
USB Options	Embedded User Partition		Disabled	Only if 'enabled' in the first place

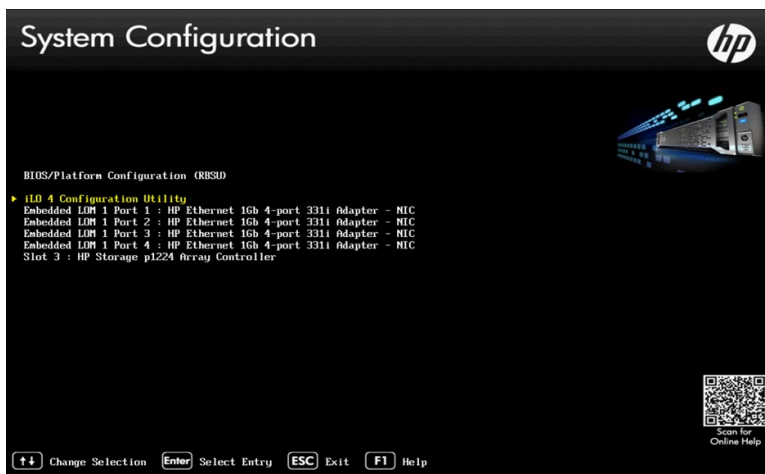
Table 16 RBSU settings for HPE StoreOnce 3500 Series and HPE StoreOnce 5100 System

Top menu item	Sub menu 1	Sub menu 2	Current default state	Change to...
Boot options	Boot Mode		UEFI Mode	Legacy BIOS mode
Power Management Options	HP Power Profile		Balanced Power and Performance	Maximum performance
Performance Options	Advanced Performance Tuning Options	Node interleaving	Disabled	Enabled - i.e Turn NUMA off for the OS
Advanced Options	Advanced System ROM Option	Product ID		HPE 3520: 794751-B21 HPE 3540: 797731-B21 HPE 5100: 794752-B21
	Thermal configuration		Optimal Cooling	Increased cooling
Date and Time	Time (hh:mm:ss)			As appropriate
	Time zone		UTC-07:00, Mountain Time (US & Canada)	As appropriate
BIOS Serial Console and EMS	BIOS Serial Console Port		Auto	Physical
USB Options	Embedded User Partition		Disabled	Only if 'enabled' in the first place

- Press **F10** to save. Then press **ESC** until the System Utilities menu is displayed.
At this point, you can either press ESC to exit System Utilities and continue with the system reboot.
Or, if there are no DHCP–assigned IP addresses, you can manually configure iLO using the local console. Select **System Configuration**.



- Select the **iLO 4 Configuration Utility**.



7. Select **Network Options**.



8. Configure your network settings and press **F10** to save.
9. Press ESC until you exit System Utilities and can continue with the system reboot.

Warranty serial numbers

After power up, it is necessary to re-write warranty serial numbers into BIOS. Please contact HPE Support for assistance in doing this.

Once this has been done, use the **Rescan** button on the **Remote Support — Entitlement** page of the StoreOnce GUI to view the warranty details. (Or use the StoreOnce CLI command, `system scan devices`.)

6 Replacing the p1224 RAID controller and components

Overview

All HPE StoreOnce Systems described within this guide use the p1224 RAID controller fitted with a RAID cache module and SuperCapacitor. Each model has a single RAID controller.

The RAID cache module is seated on the RAID card and has one port to connect to the SuperCapacitor (which is located in the center of the unit, clipped to the floor of the chassis behind the disk cage).

HPE StoreOnce 3500 Series and HPE StoreOnce 5100 System also have a SAS Expander card.

NOTE: The locations of RAID cards and the internal SAS cabling configuration are also shown on the StoreOnce hood label inside the server.

Part numbers

Replacement spares part numbers for the p1224 card, SuperCapacitor module and SAS expander card are as follows:

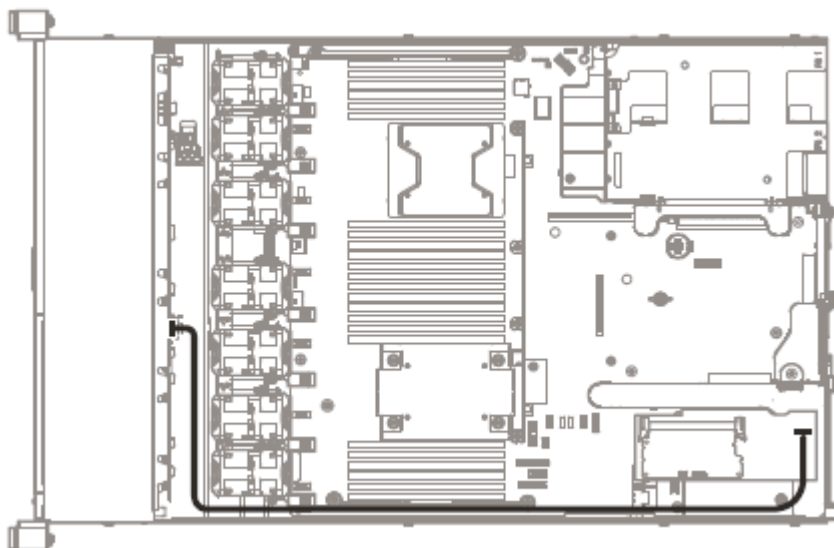
- HP p1224 RAID controller with 1GB cache module: 842475-001 (minimum firmware revision = 2.50)
- SuperCapacitor: 660093-001
- SAS expander card (not used with HPE StoreOnce 3100 System): 761879-001

For information about the part numbers for replacement internal SAS cables, see [Internal SAS cabling \(page 41\)](#).

Internal SAS cabling

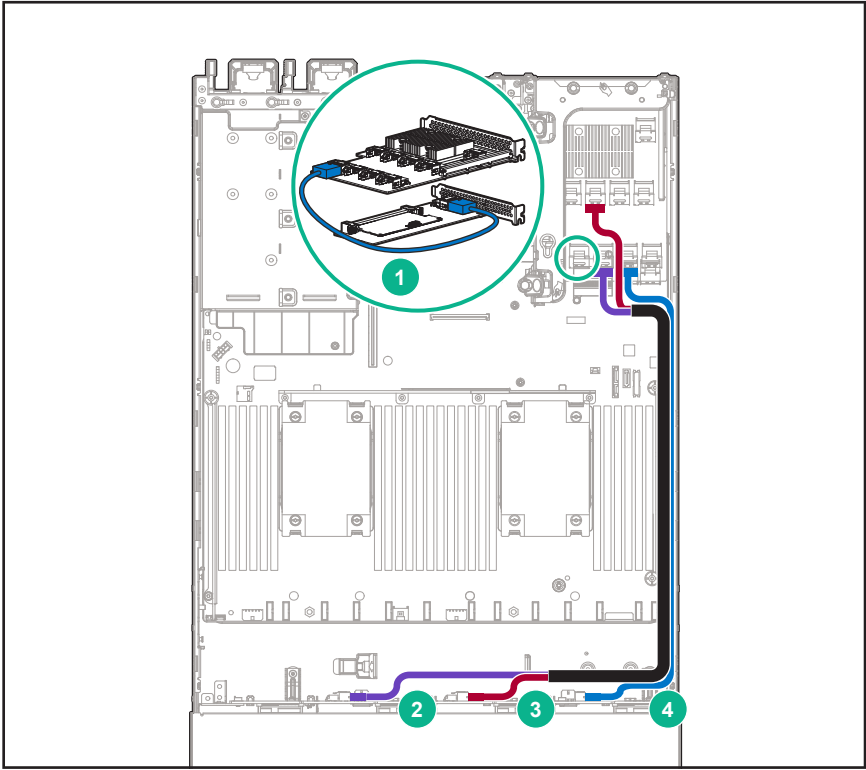
HPE StoreOnce 3100 System

Figure 18 Internal SAS cabling for HPE 3100

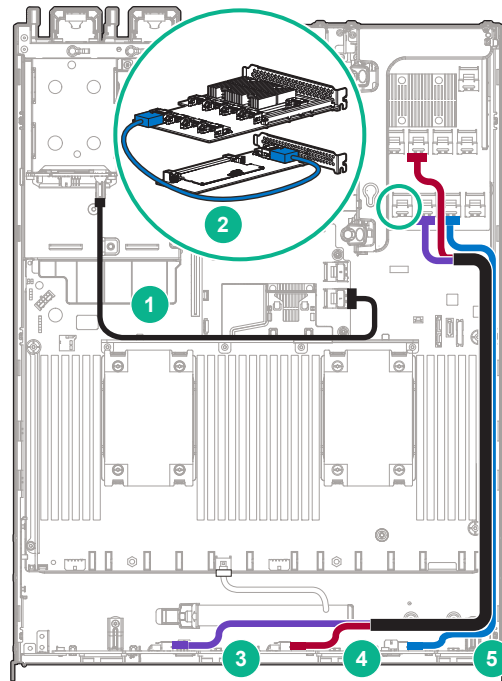


From	To	SAS cable
Port on backplane	Port on RAID controller card	780423-001

Figure 19 Internal SAS cabling 3500 Series



Item	From	To	Cable
1	Port 1, RAID controller (slot 3)	Port 1, SAS expander (slot 2)	729357-001
2	Port 5, SAS expander	Port 1, backplane	784627-001 (kit for all three SAS expander to backplane cables)
3	Port 4, SAS expander	Port 2, backplane	
4	Port 3, SAS expander	Port 3, backplane	

Figure 20 Internal SAS cabling 5100 System

Item	From	To	Spares Part Number
1	Port 1, RAID controller (OS)	Rear drive cage	784625-001
2	Port 1, RAID controller (slot 3)	Port 1, SAS expander (slot 2)	729357-001
3	Port 5, SAS expander	Port 1, backplane	784627-001 (kit for all three SAS expander to backplane cables)
4	Port 4, SAS expander	Port 2, backplane	
5	Port 3, SAS expander	Port 3, backplane	

Identifying a RAID controller failure

HPE StoreOnce 3100, 3520 and 3540 Systems boot from the p1224 RAID controller that is also connected to the customer data storage disks.

HPE StoreOnce 5100 Systems boot from the onboard smart array controller which is connected to the two OS disk drives in the rear of the server.

If a catastrophic failure of the boot RAID controller occurs, the system will not boot. This 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 will be reported in the Event Log and the Hardware pages on the StoreOnce GUI.

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

Replacing the RAID components

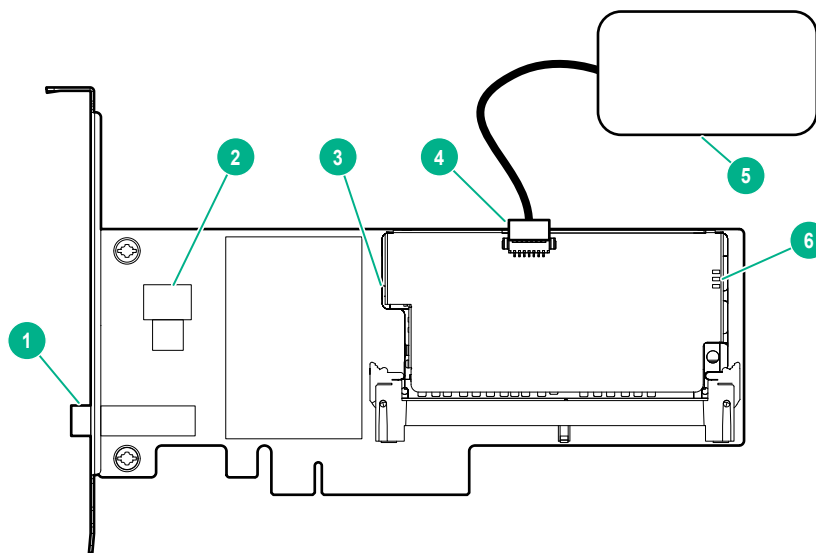
- ⚠ CAUTION:** To reduce the risk of personal injury or damage to the equipment, consult the safety information and user documentation provided with the server and RAID component before replacing it.
- ❗ IMPORTANT:** When replacing the p1224 controller or SAS expander card be sure to always replace the card into the same slot from which it was removed. Make sure the card is connected to the SuperCapacitor module and to the internal SAS data storage. On an HPE StoreOnce 5100 System, if the system has been expanded be sure to also connect the card to the external SAS storage.

p1224 RAID controller

The p1224 RAID controller card is located in:

- HPE StoreOnce 3100 System: PCIe slot 1 and is connected to the backplane.
- HPE StoreOnce 3500 Series and HPE StoreOnce 5100 System: PCIe slot 3 and is connected to the SAS expander card in slot 2 and to the backplane. In the HPE StoreOnce 5100 System it is also connected to any external SAS storage.

Figure 21 HP p1224 RAID card



- | | | | |
|---|---|---|--|
| 1 | Connector to external SAS storage (HPE 5100 only) | 2 | Connector to internal SAS disks |
| 3 | Cache module | 4 | SuperCapacitor (located in the center of the unit, clipped to the floor of the chassis behind the disk cage) |
| 5 | SuperCapacitor connector | 6 | LEDs |

The RAID cache module and SuperCapacitor

There is one SuperCapacitor and cache module for each RAID Controller. The RAID cache module is slotted onto the RAID card; the SuperCapacitor is located in the center of the unit, clipped to the floor of the chassis behind the disk cage.

These items ensure cache contents are maintained after a loss of power. The LEDs on the cache module flash when the SuperCapacitor is disconnected and POST error messages provide more information.

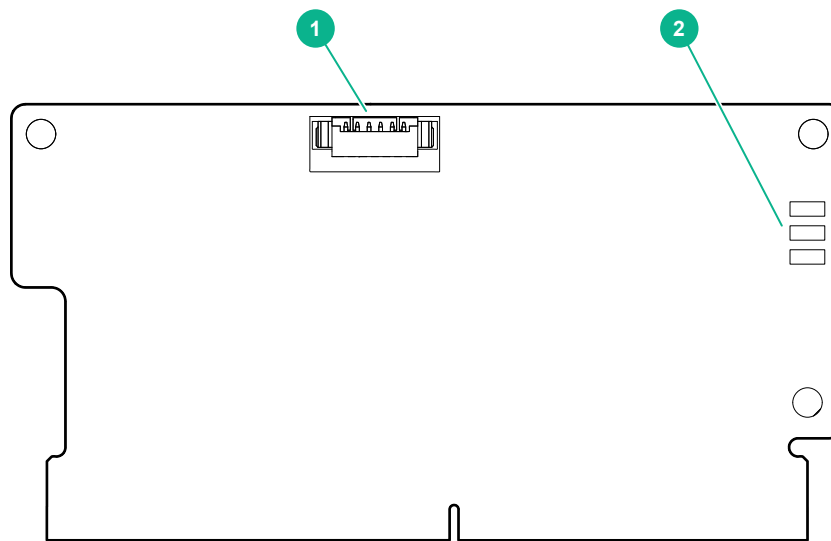
NOTE: The recommendation is to replace both the SuperCapacitor and RAID cache module at the same time, regardless of which element has failed.

NOTE: Never move cache modules from one RAID controller to another within or between systems.

If the SuperCapacitor is disconnected on the RAID card in the HPE StoreOnce System, the system will not boot. If boot fails, it is a good idea to check that the SuperCapacitor is seated correctly.

If the SuperCapacitor or cache module has failed, the system may still boot with error messages and it will run more slowly. Remove and dispose of the old module, and replace it with the new one. Check that the cable is connected correctly to the SuperCapacitor.

Figure 22 SuperCapacitor module connector on RAID card



1 SuperCapacitor connector

2 LEDs

HPE SAS expander card (HPE StoreOnce 5100 System and HPE StoreOnce 3500 Series)

If no disks are showing on the **Storage-Shelves** page of the StoreOnce GUI, there may be a problem with the HPE SAS expander card.

The part number for a replacement card is: 761879-001. It must be installed in PCIe slot 2.

Mini-SAS cables connect the RAID controller card to the SAS expander card, and the SAS expander card to the hard disk drive backplane.

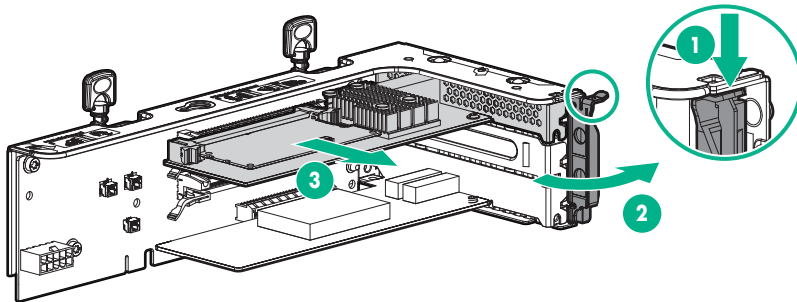
NOTE: Tuck the mini-SAS cables to be routed to the backplane into the side of the chassis. See Figures 17 and 18.

Replacement procedure

The following example describes how to replace the p1224 card. The general procedure is the same to access the SAS expander card or the SuperCapacitor cache module.

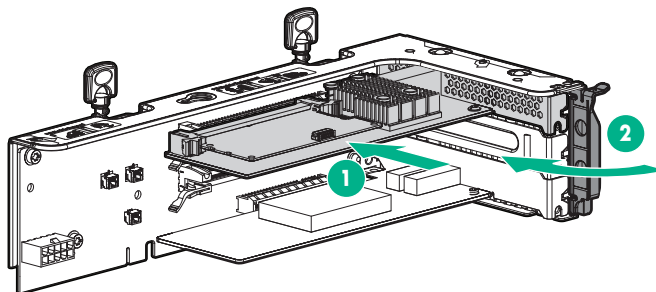
1. Power off the HPE StoreOnce System and, observing the safety and antistatic procedures, remove all external cabling to the PCIe cards and remove the cover from the HPE StoreOnce System, as described in the appropriate HPE ProLiant Maintenance and Service Guide.
 - The HPE StoreOnce 3500 Series and HPE StoreOnce 5100 System may have a PCIe 10GbE Network or Fibre Channel card in slot 1.
 - The HPE StoreOnce 5100 System may be connected to external SAS storage.
2. Remove the PCIe riser cage (for slots 1 to 3) and locate the p1224 controller card in slot 3.. Detach the cables connecting the p1224 card to the SuperCapacitor, and the SAS storage.
3. As shown in the following figure, unclip the blue retaining latch on the PCIe card (1 and 2) and remove the PCIe card (3).

Figure 23 Removing a p1224 card



4. Install the new p1224 card (1) and check that it is seated properly. Close the blue PCIe card retaining latch (2).

Figure 24 Inserting a p1224 card



5. Reconnect all internal SAS cables. See [Internal SAS cabling \(page 41\)](#) and the hood label for internal SAS cabling.

① **IMPORTANT:** The HPE StoreOnce 3500 Series and HPE StoreOnce 5100 System may have a PCIe 10GbE Network or Fibre Channel card in slot 1. Verify that this card has not been dislodged.

6. Replace the PCIe riser cage and the server cover, as described in the appropriate HP ProLiant Maintenance and Service guide.
7. Reconnect all external cables.
8. Power on the HPE StoreOnce System
9. Once rebooted, the HPE StoreOnceSystem will identify the new RAID controller and will remap the existing disk storage volumes and enclosures to the controller. It will take 5 to 10 minutes for the process to complete. During this time the product will be online but several

warning events will be generated and the GUI **Hardware** and **Events** pages will show errors being reported and cleared.

10. Verify the firmware and upgrade, if necessary, as described in [Upgrading BIOS or hardware firmware \(page 30\)](#)

7 Disk replacement

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

NOTE: For instructions on how to connect additional storage to an HPE StoreOnce 5100 System by adding a new capacity upgrade enclosure (not available with the HPE StoreOnce 3500 Series and HPE StoreOnce 3100 System), please see the printed documentation supplied with the additional storage.

Figure 25 Disk numbering in HPE 3500 and 5100 Systems



RAID configuration

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

Table 17 RAID configuration

HP StoreOnce model	Number of disks (and location)	Notes
HPE StoreOnce 3100 System	4 x 2 TB	This is a RAID 5 system; operating system and backup data are stored on the same RAID Set. This allows for a single drive failure without loss of either the backup data or OS partitions.
HPE StoreOnce 3500 Series	3520 = 12 x 2 TB 3540 = 12 x 4 TB	Both systems have two RAID 6 (4+2) sets. The basic capacity is capped at 50% of the available usable capacity. A software license is required to use the full capacity. No additional hardware is required. No further enclosures may be added.
HPE StoreOnce 5100 System	2 x 900 GB for the OS in the rear of the server unit Plus 12 x 4 TB in front disk bays	The two OS disks in the rear disk bays are dedicated for use by the operating system and are in a mirrored configuration, such that one disk can be lost without the system failing. The 12 storage disks in the front disk bays are in a RAID 6 (9+2 + 1 hotspare) set, such that two disks can be lost without loss of backup data. The hot spare disk is in bay 12. Up to five additional enclosures may be added to increase the backup data capacity, also RAID 6 (9+2 + 1 hotspare).

❗ **IMPORTANT:** It is very important that failed disks are replaced promptly.

In order to ensure that you are alerted to disk failures ensure that either or both of SNMP traps and email alerts are configured so that in the event of a disk failure you are notified immediately and can take action to replace the disks.

Note that In the case of the

- HPE StoreOnce 5100 System: All enclosures of storage must be working for the system to operate; if any RAIDset fails on any one enclosure due to exceeding the maximum amount of failed disks then ALL data is lost.
- HPE StoreOnce 3500 Series: All 12 disks are used for data storage with or without the license to expand the storage capacity to 100%.
- HPE StoreOnce 3100 System: If more than one disk fails then the data and operating system are lost and a “Quick Restore” of the appliance OS will be required before the unit can be used again.

Hot spare disk and LEDs on the HPE StoreOnce 5100 System

Both the HPE StoreOnce 5100 System and any Capacity Upgrade enclosures have a hot spare disk in bay 12. If one disk fails in the RAIDset, the 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:

- Head server: The LED is off on the 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.
- Capacity Upgrade enclosure: 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.

Ordering the correct replacement disk for a failed disk

- ❗ **IMPORTANT:** HPE strongly recommends replacing a failed disk with a fresh disk from the factory. Do not substitute a disk from another RAID set.

HPE StoreOnce 5100 System: In the event of a disk failure, it is important to identify whether the disk is in one of the two OS disk bays or one of the storage disk bays, because different disks are used in the two locations and the carriers are different.

Always quote the serial number and product number for the enclosure that contains the failed disk so that support can replace the correct part.

Table 18 Disk types

Disk	Where used	Spares Part Number
900GB entry SAS Level HDD	HPE StoreOnce 5100 System (2 disks), head server unit, rear disk bays	653971-001
4 TB HDD	HPE StoreOnce 5100 System (12 disks), head server unit, front disk bays HPE StoreOnce 3540 System (12 disks)	695842-001
4 TB HDD	HPE StoreOnce 5100 System (12 disks), capacity upgrade expansion	697966-001
2 TB HDD	HPE StoreOnce 3520 System (12 disks) HPE StoreOnce 3100 System (4 disks)	653948-001

Replacing a hot-plug hard disk



WARNING! It is important to replace a failed or predictive failed disks as soon as possible. Multiple disk failures within the same array will result in complete data loss.

Note that ALL enclosures of storage must be working for the system to operate; if the RAID fails on any one array due to exceeding the maximum amount of failed disks in a pool then ALL data is lost. In the case of the HPE StoreOnce 3100 System, if more than one disk fails then the data and operating system are lost and a “Quick Restore” of the appliance OS will be required before the unit can be used again.

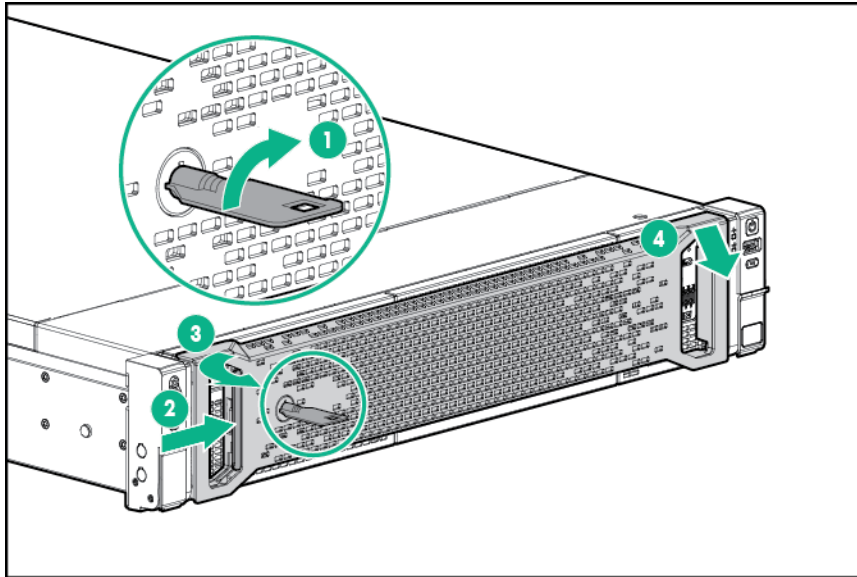
Procedure 1

1. Identify the disk that has failed. If you have configured recipients for SNMP traps or email alerts, they will be notified of a disk failure. You can also use the GUI as follows:
 - Go to the appropriate **Hardware** page to get the details for the device: **Hardware — Storage Clusters — Storage Cluster 1 — Drive Enclosures — Drives**.
 - You can use the **Beacon LED On** button on this page to turn the LED on the front of the disk on, which makes it easier to identify and replace. The disk fault LED (amber) will also be illuminated on the disk carrier.

St...	Volu...	Type	Name	UUID	Seri...	Model	Fir...	Loc...	Properties	Message	Diagnostic Message
OK	LUN...	drive	Disk ...	5000...	S1Z...	MB4...	HPD5	Port...	capacity:4.00 TB, driv...	-	-
OK	LUN...	drive	Disk ...	5000...	S1Z...	MB4...	HPD5	Port...	capacity:4.00 TB, driv...	-	-
OK	LUN...	drive	Disk ...	5000...	S1Z...	MB4...	HPD5	Port...	capacity:4.00 TB, driv...	-	-
OK	LUN...	drive	Disk ...	5000...	S1Z...	MB4...	HPD5	Port...	capacity:4.00 TB, driv...	-	-
OK	LUN...	drive	Disk ...	5000...	S1Z...	MB4...	HPD5	Port...	capacity:4.00 TB, driv...	-	-
OK	LUN...	drive	Disk ...	5000...	S1Z...	MB4...	HPD5	Port...	capacity:4.00 TB, driv...	-	-
OK	LUN...	drive	Disk ...	5000...	S1Z...	MB4...	HPD5	Port...	capacity:4.00 TB, driv...	-	-
ML...	LUN...	drive	-	Driv...	-	-	-	Port...	capacity:4.00 TB, driv...	The drive is missing o...	Reseat the drive. If re...
OK	LUN...	drive	Disk ...	5000...	S1Z...	MB4...	HPD5	Port...	capacity:4.00 TB, driv...	-	-
OK	LUN...	drive	Disk ...	5000...	S1Z...	MB4...	HPD5	Port...	capacity:4.00 TB, driv...	-	-
OK	LUN...	drive	Disk ...	5000...	S1Z...	MB4...	HPD5	Port...	capacity:4.00 TB, driv...	-	-
OK	LUN...	drive	Disk ...	5000...	S1Z...	MB4...	HPD5	Port...	capacity:4.00 TB, driv...	-	-

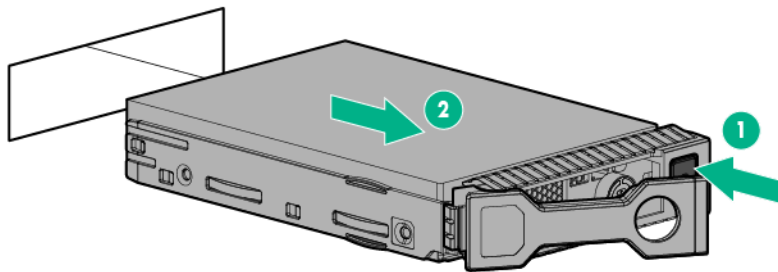
2. Remove the front bezel from the HPE StoreOnce System. Turn the key (1) to unlock the security bezel and pull it out (2) and away (3) from the front of the appliance, using the handle (4). (The example shows an HPE StoreOnce 5100 System.)

Figure 26 Removing the front bezel



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

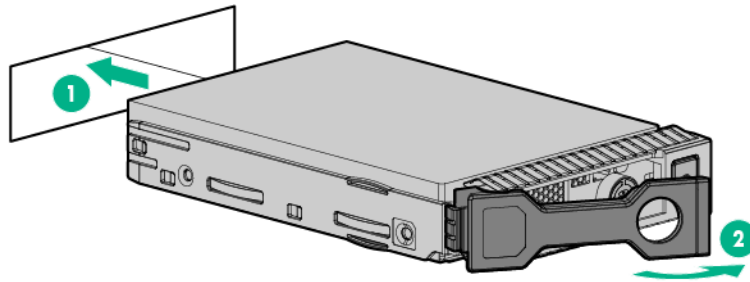
Figure 27 Removing the hard drive



4. Replace the failed disk with the new disk.

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

Figure 28 Installing a replacement hard disk



5. Replace the front bezel.
6. Log in to the GUI and look at the **Hardware — Storage Clusters — Storage Cluster 1 — Drive Enclosures — Drives** page. While the RAID rebuilds, the drive Status will be DEGRADED and appropriate messages are displayed against it.

The drive is currently the target of a rebuild operati... Wait for the rebuild to complete.

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 will be generated reflecting the status of the physical disks and the logical storage system.

7. Verify the firmware and upgrade, if necessary, as described in [Upgrading BIOS or hardware firmware \(page 30\)](#)

If multiple disks fail and a RAIDset is broken

In the event of multiple disk failures on a single enclosure all backup data will be lost so it is very important that if disk failures do occur they are dealt with swiftly and disks are replaced. This section explains how to rebuild your storage in the event of a complete data loss. This should be done under the guidance of HPE Support.

After the failed disks have been replaced it will be necessary to remove the old filesystem configuration and rebuild a new one as follows:

1. Use the following StoreOnce CLI to remove all configured storage on the appliance (except that used by the operating system):

```
hardware delete storage all
```
2. This will clean up all filesystem configuration and delete logical drives (LUNs) on all storage devices.

⚠ WARNING! This command will completely remove all configured storage, and will run at any time even if the storage is healthy.

3. After the delete command has completed rebuild the storage system using the following StoreOnce CLI commands to discover and add storage to the system

```
hardware discover storage
```

Monitor the status of the LUN creation process using the StoreOnce CLI command:

```
hardware show storage status
```

Look for the **Formatted** and **Discovered** information under **Status**. When all the storage has been discovered, add it to the system.

```
hardware add storage
```

This will configure both the storage in the appliance (base storage) and any attached expansion shelves. Licenses must be present for all attached storage before the command will complete successfully. If insufficient licenses are available, **no** storage will be configured.

8 Replacing Optional Hardware

NOTE: This chapter is not applicable to the HPE StoreOnce 3100 System because it does not support Optional Hardware.

The HPE StoreOnce 3500 Series and HPE StoreOnce 5100 System support the addition of 10GbE Network cards and Fibre Channel cards. The StoreOnce CLI and GUI will report any errors to the user.

Error messages

The following table details messages that indicate problems with the Optional Hardware. Other error messages may be displayed that relate to licensing issues. See the *HPE StoreOnce 10GbE Network and Fibre Channel Card Installation and Configuration Guide* for more details.

Table 19 Messages that indicate problems with Optional Hardware

Short message	Error message	Description	Recommended Action
Failed	Failed hardware found	There is a valid license but the hardware is in a failed/degraded state	Contact HPE Support.
Unlicensed	Invalid hardware found (License mismatch)	The hardware is valid but does not match the license	One type of card has been and installed and licensed, and then replaced with a different type of card. Either put the original card back or contact HPE support to delete the original license and apply the new one.
Degraded	Hardware reported as degraded	The hardware is reported as degraded.	Contact HPE Support.
Missing	Hardware missing	The hardware is missing	Verify that the card has been installed.
Incorrect	Invalid load order	The load order is invalid	This usually means that a card has been installed in the wrong slot. Put the card in the correct slot and try to activate again. It can also occur if a card fails in a lower order slot (if the NIC in slot 1 fails and you are adding a NIC to slot 4 then slot 1 would display MISSING or FAILED and slot 4 would display Invalid load order.)
Faulty	Hardware reporting as failed	Hardware is in a failed state	Contact HPE Support.
Unsupported	Unsupported hardware found	Hardware is unsupported type/model	Verify that you have installed the appropriate HPE StoreOnce Optional Hardware.
Invalid	Invalid Hardware	The hardware is invalid (generic error)	Contact HPE Support.

Replacing Optional Hardware cards

NOTE: Providing the replacement card is of the same type and is installed in the same slot, no activation or licensing is required.

Follow the instructions in the *HPE StoreOnce 10GbE Network and Fibre Channel Card Installation and Configuration Guide* to install the replacement card. The following additional guidelines apply to the replacement procedure:

- Replace a 10GbE-T card with another 10GbE-T card, a 10GbE SFP card with another 10GbE SFP card and an 8Gb FC card with another 8Gb FC card.
- Replace the card in the same slot from which the failed card was removed.

Fibre Channel card considerations

StoreOnce Device configuration

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

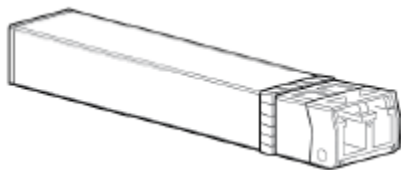
- If using only VTL over Fibre Channel, no further configuration is required when replacing the Fibre Channel card.
- If using StoreOnce Catalyst over Fibre Channel there are replacement considerations. The World Wide Port Name (WWPN) and World Wide Node Name (WWNN) of the StoreOnce Catalyst over Fibre Channel device 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 re-zone their clients with the new WWPN / WWNN. The replaced port will not be seen by clients until this re-zoning is performed.

Removing and replacing a Fibre Channel or 10GbE SFP

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

⚠ WARNING! When the system is on, do not stare at the fibers. Doing so could damage your eyes.

1. Disconnect the FC or 10GbE cable and lift the retaining clip to carefully slide the SFP out of the enclosure.



2. Remove the replacement SFP module from its protective packaging.

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

3. Carefully slide the replacement SFP into the enclosure until fully seated, close the retaining clip to secure it in place.
4. Place the failed SFP into the packaging for return to HPE.
5. Reconnect the FC or 10GbE network cable to the SFP and verify that the link status LED is solid green.

9 HPE StoreOnce 5100 System Capacity Upgrade expansion shelves

NOTE: This chapter is not relevant for the HPE StoreOnce 3500 Series nor the HPE StoreOnce 3100 System.

The HPE StoreOnce 5100 System supports capacity expansion by the addition of up to five Capacity Upgrade Kits.

❗ **IMPORTANT:** The system must be taken offline before replacing most components. The only parts that are hot-pluggable are:

- Hard disks: this is the same procedure as replacing a hard disk in the server, see [Replacing a hot-plug hard disk \(page 50\)](#)
- Fan modules
- Power supply modules

NOTE: Before replacing the I/O module or SAS cables thoroughly check that all cables are fully seated and connected. Refer also to the instructions supplied with the I/O module and to earlier sections in this guide for illustrations showing SAS cabling.

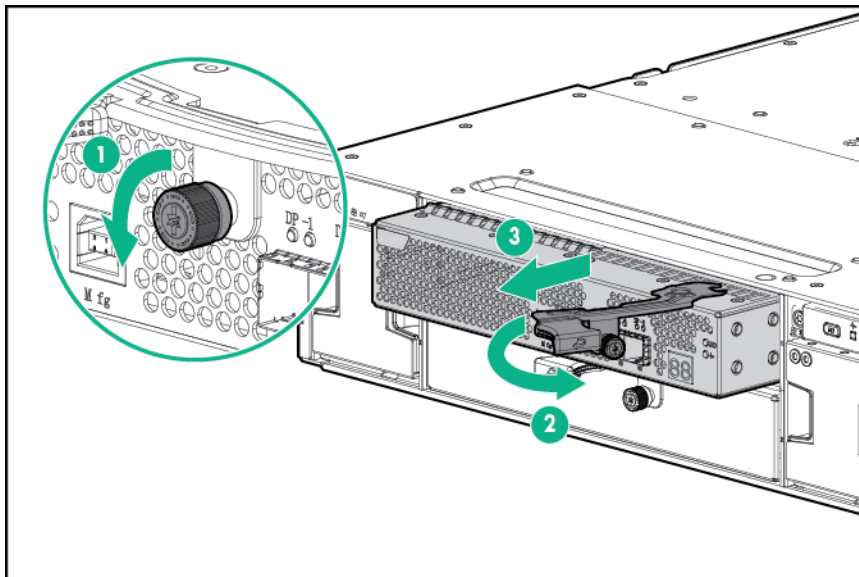
Removing and replacing the I/O module

❗ **IMPORTANT:** Power down the HPE StoreOnce 5100 System, as described in [\(page 30\)](#).

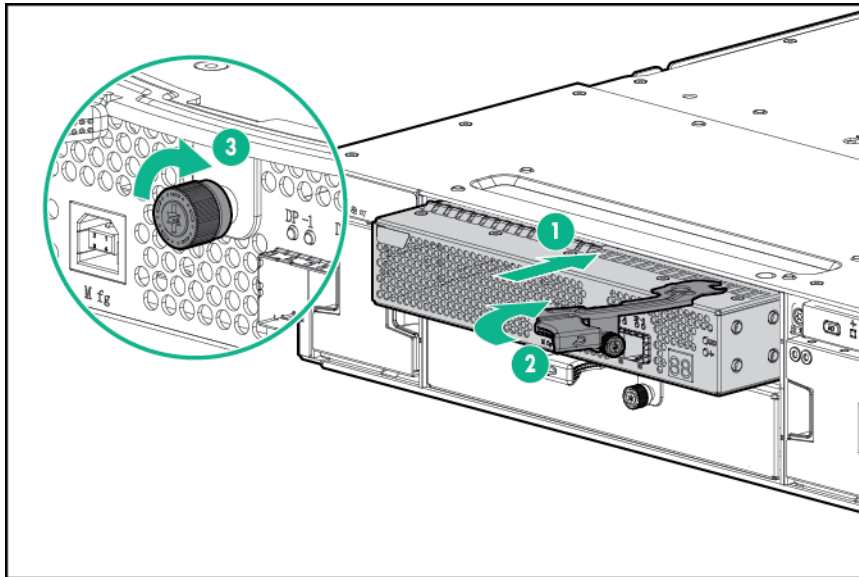
1. Unplug the cables from the back panel of the I/O module.

If this is the only Capacity Upgrade expansion shelf or the last in the daisy chain, there is one cable to disconnect. If it is one of several daisy-chained Capacity Upgrade shelves, there will be two cables to disconnect on the I/O module.

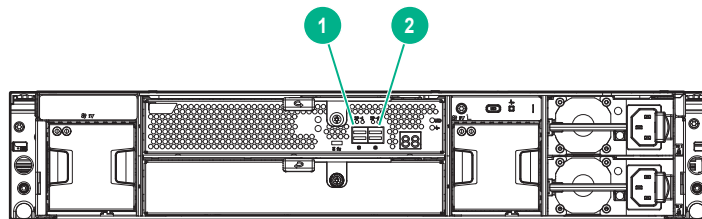
2. Loosen the captive retaining thumbscrew (1), and swing out the hood latch (2).



3. Slide out the I/O module (3) and set aside.
4. Slide the replacement I/O module into the correct bay and swing in the hood latch until it closes.



5. Re-tighten the captive retainer thumbscrews
6. Replace the I/O cable(s).



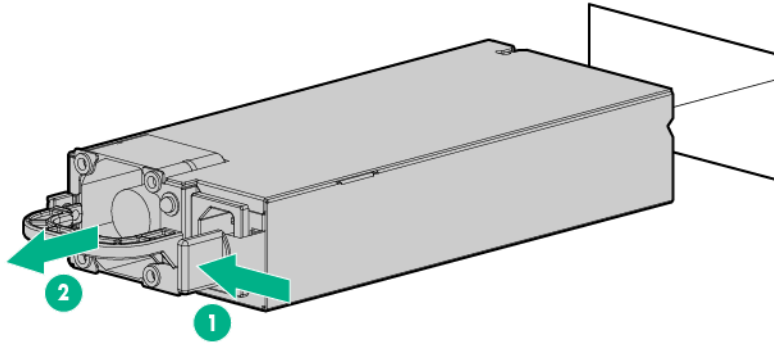
1	SAS IN from RAID controller in server or from previous enclosure
2	SAS OUT to next enclosure

7. Read the LEDs to confirm the unit is operating. See [Storage enclosure LEDs \(page 26\)](#).

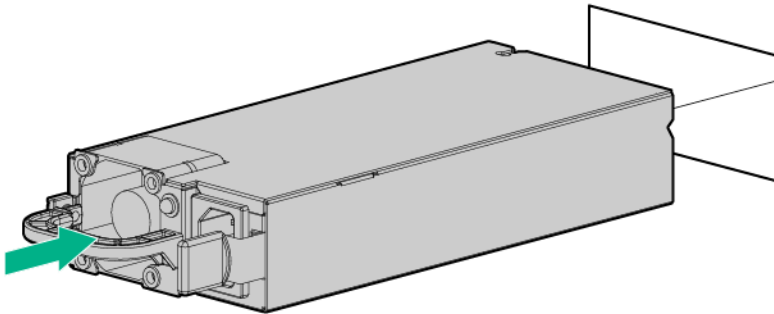
Removing and replacing a power supply module

NOTE: If one of the PSUs is removed and re-inserted, but the power cord is not reattached, the hardware report will show the failed AC Supply & a TempSensor Failure.

1. Remove the power cable from the power supply to be replaced.
2. Press the latch (1) and slide the power supply module out of the enclosure (2).



3. Slide the replacement power supply into the enclosure bay until it clicks into place.



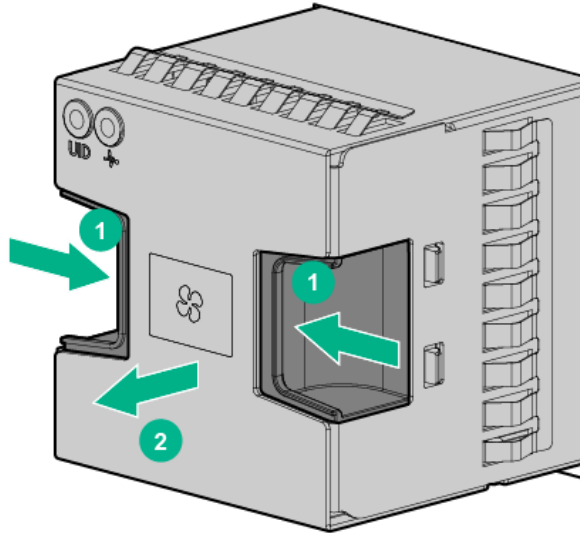
4. Connect the power cable.
5. Check the power supply module status LED to ensure the module is operating properly. See [Storage enclosure LEDs \(page 26\)](#).

Removing and replacing a fan module



WARNING! To maintain the correct airflow to the HPE StoreOnce system, this procedure should be completed within 3 minutes.

1. Press the fan module release buttons (1) and slide the module (2) out of the enclosure.



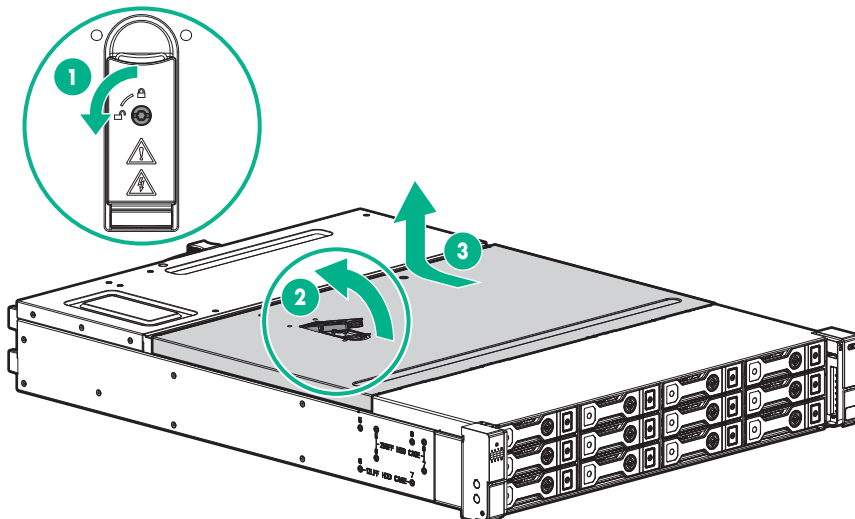
2. Slide the replacement fan module into the enclosure until it clicks into place
3. Check the fan module status LEDs to ensure the module is operating properly. See [Storage enclosure LEDs \(page 26\)](#).

Replacing the fan control card

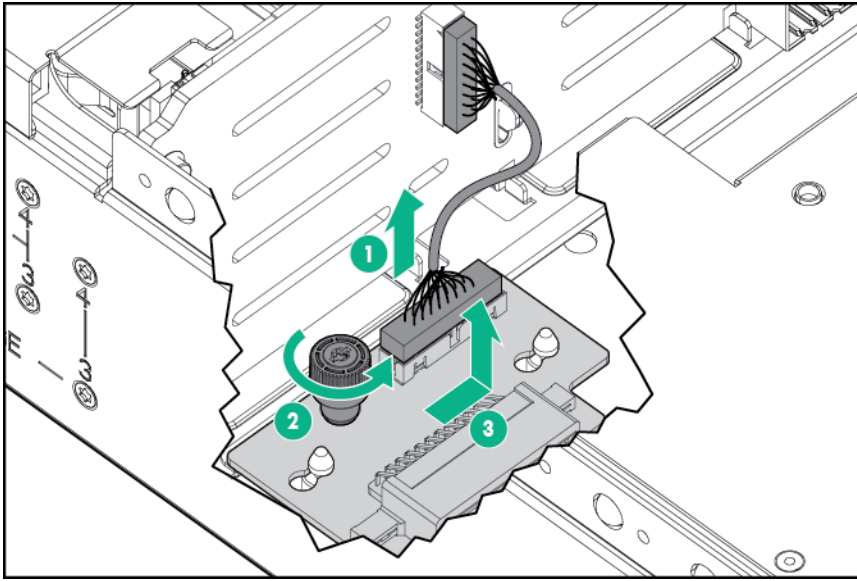
This procedure should be performed only after HPE Support determines that the fan control card is the source of the problem and recommends the fan control card be replaced.

⚠ CAUTION: This procedure requires removing the enclosure from the rack. Before removing the enclosure, power down the HPE StoreOnce 5100 System as described in [\(page 30\)](#).

1. Disconnect all cables from the enclosure, including the power cables.
2. Remove the fan modules. See [“Removing and replacing a fan module” \(page 58\)](#)
3. Remove the enclosure from the rack. See [“Removing and replacing an enclosure” \(page 64\)](#)
4. Pull the hood latch up and back (1 and 2), and lift the enclosure cover up and remove it (3).



5. Remove the fan control card cable (1).



6. Loosen the captive thumbscrew (2).
7. Slide the fan control card sideways to free it from the retaining pins and lift it out (3).
8. Insert the new fan control card and slide it sideways to engage it with the retaining pins.
9. Tighten the captive thumbscrew.
10. Attach the fan control card cable.
11. Install the enclosure cover and press the hood latch down to engage the latch.
12. Install the enclosure in the rack. See [“Removing and replacing an enclosure” \(page 64\)](#).
13. Tighten the front retaining screws.

CAUTION: The front retaining screws must be attached at all times when the enclosure is racked.

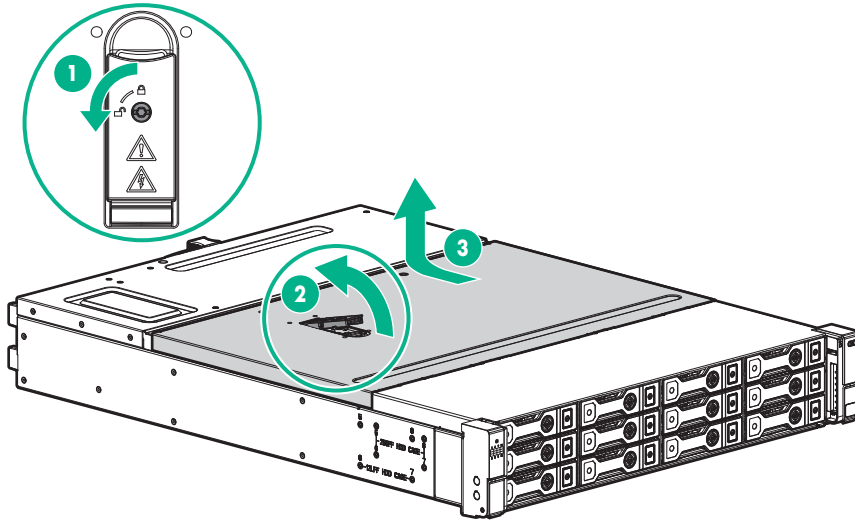
14. Install the fan modules. See [“Removing and replacing a fan module” \(page 58\)](#)
15. Reconnect all cables to the enclosure, including the power cables.
16. When the enclosure has completed its power on sequence, check all enclosure status LEDs to ensure the enclosure is operating properly.

Removing and replacing the power distribution board

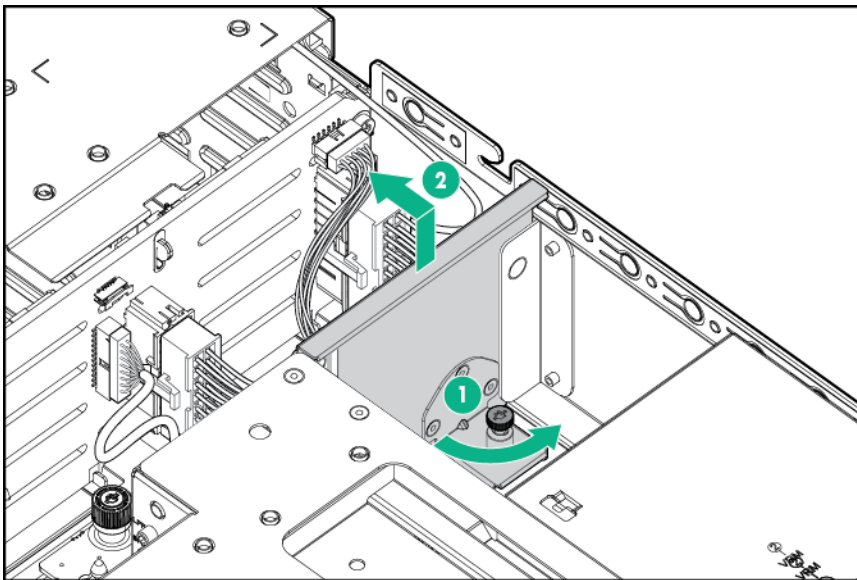
This procedure should be performed only after HPE Support determines that the enclosure is the source of the problem and recommends the power distribution board be replaced

CAUTION: This procedure requires removing the enclosure from the rack. Before removing the enclosure, power down the HPE StoreOnce 5100 System as described in [\(page 30\)](#).

1. Disconnect all cables from the enclosure, including the power cables.
2. Remove the power supplies. See [“Removing and replacing a power supply module” \(page 57\)](#).
3. Remove the rear hold down bracket.
4. Remove the enclosure from the rack. See [“Removing and replacing an enclosure” \(page 64\)](#)
5. Pull the hood latch up and back (1 and 2), and lift the enclosure cover up and remove it (3).



6. Loosen the captive thumbscrew (1) on the air guide.



7. Remove the power cables from the backplane.
8. Lift up the air guide and pull it toward front of enclosure to remove (2).
9. Loosen the captive thumbscrew on the power distribution board.
10. Slide the power distribution board toward the front of the enclosure and lift it out of the enclosure.
11. Install the replacement power distribution board in the enclosure and slide it toward the back of the enclosure.
12. Tighten the captive screw to secure the power distribution board.
13. Connect the power cables to the backplane.
14. Install the air guide making sure all cables are routed through the air guide opening.
15. Tighten the captive screw to secure the air guide in the enclosure.
16. Install the enclosure cover and press the hood latch down to engage the latch.
17. Install the enclosure in the rack. See [“Removing and replacing an enclosure” \(page 64\)](#).
18. Install the power supplies. See [“Removing and replacing a power supply module” \(page 57\)](#).
19. Reconnect all cables to the enclosure, including the power cables.

20. When the enclosure has completed its power on sequence, check all enclosure status LEDs to ensure the enclosure is operating properly.

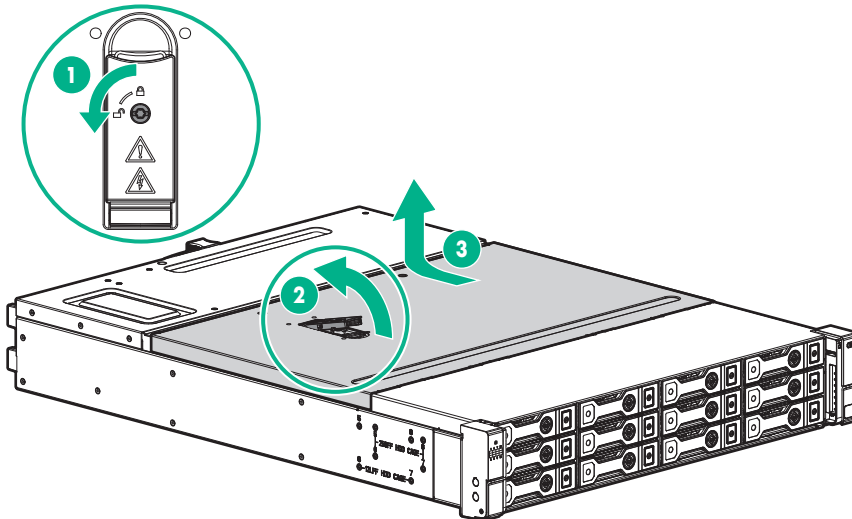
Removing and replacing the enclosure backplane

The operation is performed after HPE Support determines that the enclosure backplane is the source of the issue and recommends the backplane be replaced

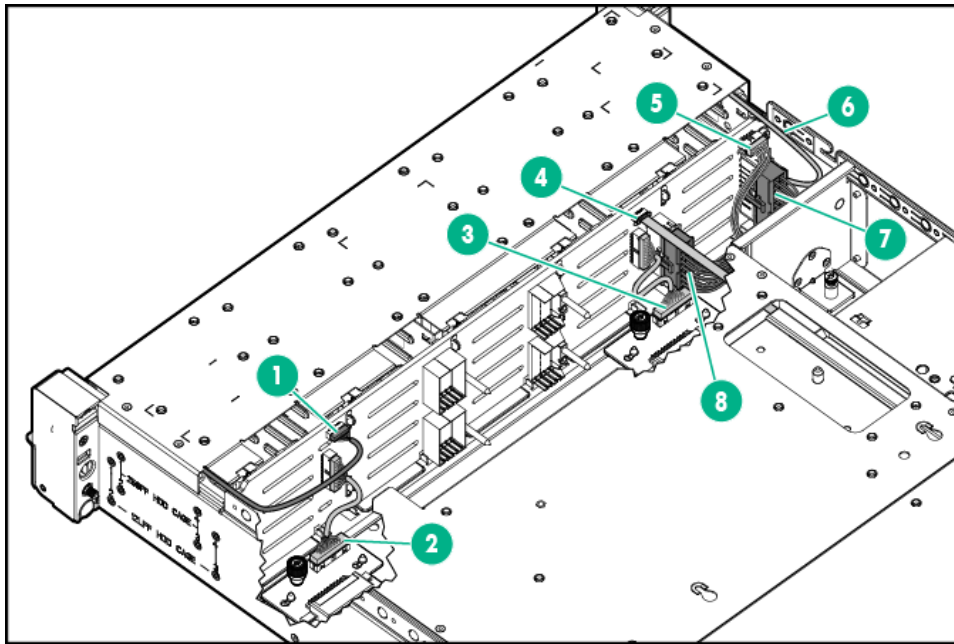
❗ **IMPORTANT:** After replacement and power up, it is necessary to re-write warranty serial numbers into BIOS. Contact HPE Support for more information.

⚠ **CAUTION:** Before removing the enclosure, power down the HPE StoreOnce 5100 System as described in [\(page 30\)](#).

1. Disconnect all cables from the enclosure, including the power cables.
2. Label all the disk drives before removing them to ensure they are reinstalled in the proper enclosure bays.
3. Remove all the disk drives. See [“Replacing a hot-plug hard disk” \(page 50\)](#)
4. Remove the power supplies See [“Removing and replacing a power supply module” \(page 57\)](#)
5. Remove the I/O module. See [“Removing and replacing the I/O module” \(page 56\)](#).
6. Remove the fan modules. See [“Removing and replacing a fan module” \(page 58\)](#).
7. Remove the enclosure from the rack. See [“Removing and replacing an enclosure” \(page 64\)](#).
8. Pull the hood latch up and back (1 and 2), and lift the enclosure cover up and remove it (3).



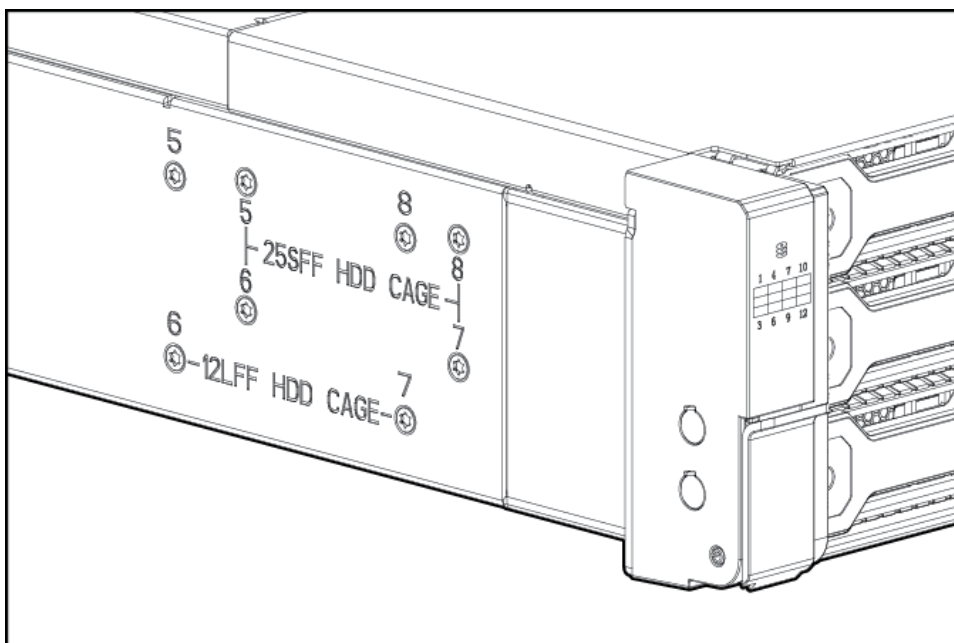
9. Disconnect the following cables from the backplane:



Number	Cable
1	Front UID health module
2	Fan control card
3	Fan control card
4	Rear UID health module
5	Power distribution unit
6	Rear UID health module
7	Power supply
8	Power supply

10. Remove the eight drive cage retaining screws. There are four to a side.

NOTE: The StoreOnce System has 12 hard disks and the screws are in the 12LFF HDD Cage location.



11. Slide the drive cage toward the front of the enclosure and lift free of the enclosure.
12. Remove the two screws attaching the back plane to the drive cage.
13. Slide the back plane toward the top of the drive cage and lift the back plane off the drive cage.
14. Place the replacement back plane on the drive cage and slide toward the bottom of the drive cage on to the retaining hooks.
15. Install the two back plane screws.
16. Place the drive cage in the enclosure and slide toward the back of the enclosure making sure the locating pins in the bottom of the enclosure are all correctly located in the drive cage.

NOTE: Depending on the specific unit, there are 6 or 8 locating pins.

17. Install the eight drive cage retaining screws.
18. Connect the two UID/Health module cables.
19. Connect the power cables.
20. Connect the fan control card cables.
21. Install the enclosure cover and press the hood latch down to engage the latch.
22. Install the enclosure in the rack. See [“Removing and replacing an enclosure” \(page 64\)](#).
23. Install the I/O module. See [“Removing and replacing the I/O module” \(page 56\)](#).
24. Install the power supplies. See [“Removing and replacing a power supply module” \(page 57\)](#).
25. Install the fan modules. See [“Removing and replacing a fan module” \(page 58\)](#).
26. Install the disk drives in the same bays they were in the original enclosure. See [“Replacing a hot-plug hard disk” \(page 50\)](#).
27. Reconnect all cables to the enclosure, including the power cables.
28. When the enclosure has completed its power on sequence, check all enclosure status LEDs to ensure the enclosure is operating properly.

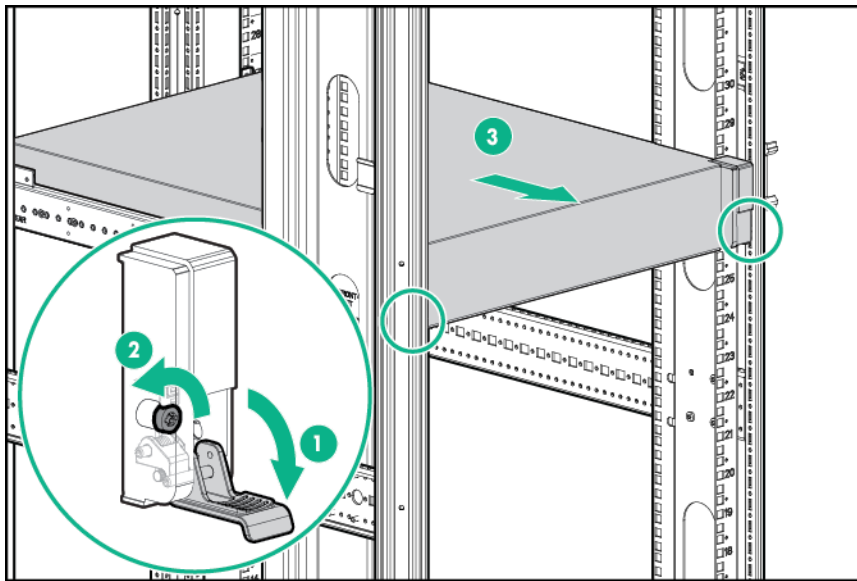
Removing and replacing an enclosure

This operation is required before the user can carry out a number of the other tasks described in this chapter.

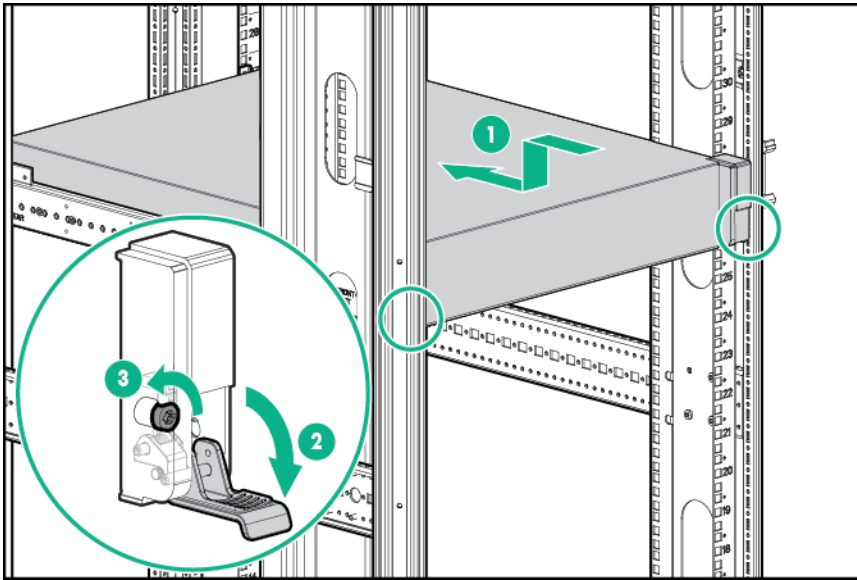
1. Power down the HPE StoreOnce 5100 System, as described in [\(page 30\)](#).

2. Disconnect all cables from the enclosure, including the power cables.
3. Depending upon the maintenance task, it may be necessary to carry out some of the following tasks:
 - Remove all the disk drives. Make sure all disks are labeled before removing them to ensure they can be reinstalled in the proper enclosure bays. See [“Replacing a hot-plug hard disk” \(page 50\)](#).
 - Remove the power supplies See [“Removing and replacing a power supply module” \(page 57\)](#)
 - Remove the I/O module. See [“Removing and replacing the I/O module” \(page 56\)](#)
 - Remove the fan modules. See [“Removing and replacing a fan module” \(page 58\)](#)
4. Loosen the captive screws behind the latch on the front left and right bezel ears of the chassis (1)
5. Loosen the rear hold-down bracket.
6. Slide the enclosure out of the rack (2) and set it on a secure surface.

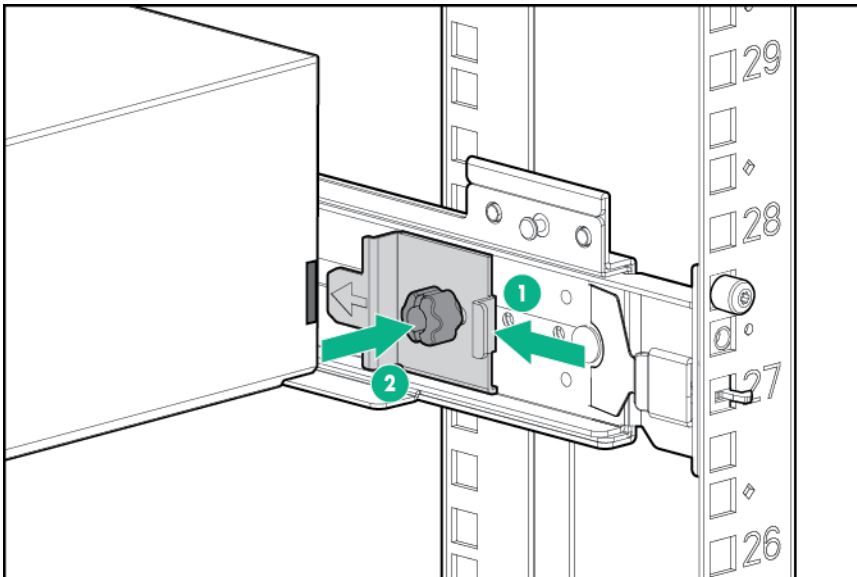
⚠ WARNING! Always use at least two people to lift an enclosure into the rack. If the enclosure is being loaded into the rack above chest level, a third person must assist with aligning the enclosure with the rails while the other two people support the weight of the enclosure.



7. Carry out appropriate maintenance tasks.
8. Slide the enclosure back into the rack and tighten the retaining screws.

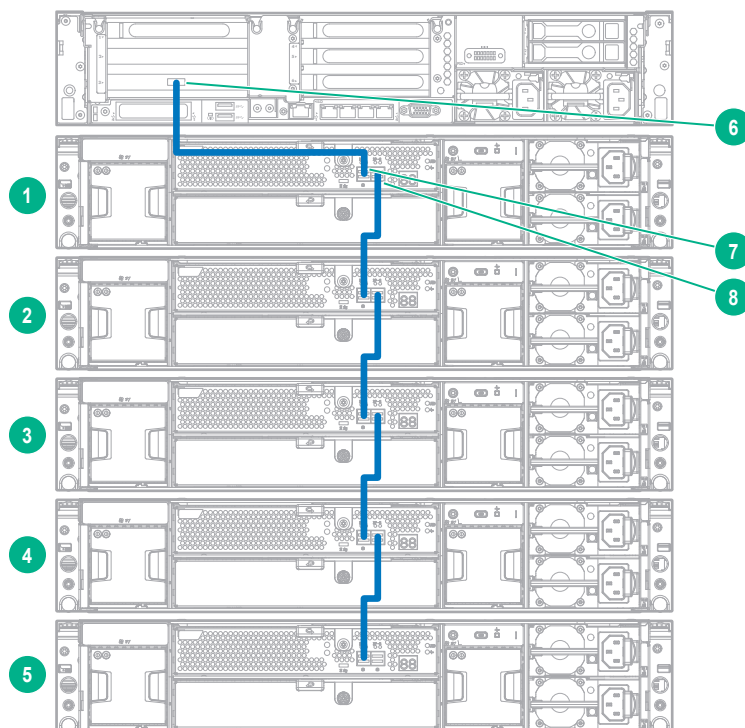


9. Re-attach the rear hold-down bracket.



10. Re-install any items that were removed prior to removing the enclosure.
 - Install the I/O module. See [“Removing and replacing the I/O module”](#) (page 56)
 - Install the power supplies. See [“Removing and replacing a power supply module”](#) (page 57)
 - Install the fan modules. See [“Removing and replacing a fan module”](#) (page 58)
 - Install the disk drives in the same bays as they were prior to maintenance. See [“Replacing a hot-plug hard disk”](#) (page 50).
11. Reconnect the SAS cables and power cables.

Figure 29 SAS cabling showing five storage enclosures below the head server



- | | | | |
|---|--|---|--|
| 1 | JBOD1 | 2 | JBOD2 |
| 3 | JBOD3 | 4 | JBOD4 |
| 5 | JBOD5 | 6 | SAS connector on RAID controller on head unit |
| 7 | P1 connector on I/O module (SAS IN from head unit or previous expansion shelf) | 8 | P2 connector on I/O module (SAS OUT to next expansion shelf) |

12. When the enclosure has completed its power on sequence, check all enclosure status LEDs to ensure the enclosure is operating properly.
13. Power on the HPE StoreOnce 5100 System.

10 The QR ISO image

In the rare occurrence of a complete system failure it may be necessary to re-install the product software. This task is normally carried out on the recommendation and under the supervision of HPE Support.

-
- ⚠ **CAUTION:** The Quick Restore process will delete all stored data and configuration settings returning your product to factory default settings.
-

Download Quick Restore ISO Image

The StoreOnce Quick Restore ISO Image is used to install the Gen 3 software image onto the StoreOnce appliance disks.

1. Go to the HPE Support page at <http://www.hpe.com/support/hpesc>, search on your product and select **HPE StoreOnce Backup**.
2. Under **Download Options** select the **Get drivers, software & firmware** link.
3. Select **OS Independent** under **Operating Systems** to display a list of all available downloads.
4. The QR ISO image is under **Software**.
5. Click **Obtain Software** and select the QR ISO image appropriate to your product. You will be required to sign in with HP Passport to download the QR ISO image, and can create an HP Passport account when you first access the site.
6. Create the physical QR media.

Use the HP USB Key Utility for Windows to copy the ISO image to a USB key using a Windows PC. The HP USB Key Utility for Windows can be downloaded from the downloads page. It is under **Utility**.

Alternatively, use the iLO4 ISO mounting utility to mount the virtual CD-ROM over iLO.

-
- ❗ **IMPORTANT:** HPE recommends that you label the new media for ease of identification.
-

Create a bootable QR USB Stick

Use the HP USB Key Utility for Windows to copy the ISO image to a 4 GB USB key using a Windows PC.

1. Go to <http://www.hpe.com>.
2. Click the **Support** link in the upper right corner to take you to the Support Center site for HPE products.
3. Click the **HPE Servers, Storage and Networking** link (under Product Support).
4. As product name enter **HP USB Key Utility for Windows** and click Go.
5. Click **drivers, software & firmware** (under Download options).
6. Select your product's operating system and select any Windows version, e.g. Windows Server 2012 (the utility support all versions with one binary)
7. Click the **+** next to **Utility – Tools**
8. Click the **Download** button to download the latest version.

Download the Smart Component to a directory on your hard drive and change to that directory. The downloaded file is a self-extracting executable with a filename based on the Smart Component Number. From that drive and directory, execute the downloaded file.

9. After installation, the utility will place a shortcut in **HP System Tools** in the **Programs** start menu folder. To make your drive key bootable and copy the ISO image to it:
 - Place your HP USB drive key (minimum size 4 GB flash stick) in an available USB port.
 - Select the **HP USB Key Utility** shortcut in the **HP System Tools** folder.
 - Complete each step presented by the application.
10. Once complete safely remove the USB stick from the Windows PC.

Delete storage

Before running QR it is advisable to remove all configured storage on the appliance. If you do not do this, you may get error messages during QR, reporting the presence of Alien LUNs.

1. Use the following StoreOnce CLI to remove all configured storage on the appliance (except that used by the operating system):

```
hardware delete storage all
```
2. This will clean up all filesystem configuration and delete logical drives (LUNs) on all storage devices.

Boot the appliance and install the StoreOnce software

Make sure that power, network, keyboard and monitor, and all expansion enclosures are attached to the StoreOnce appliance, then insert the QR USB stick into a USB port and power on the system.

After the system powers up and completes self-tests it will boot from the USB key and launch the Linux installation process.

NOTE: An error will be displayed: `[Firmware Bug]: the BIOS has corrupted hw-PMU resources (MSR 38d is 330)`. This error does not have any affect on the StoreOnce solution and is an expected output during QR. No action needs to be taken by customer or support engineer.

After a few seconds a boot splash screen will appear offering the choice of Restore (R) or Exit (E). Press R to continue to the installation process.

A warning will now be displayed indicating that all data will be lost after entering “yes”. THIS IS THE LAST CHANCE TO EXIT THE INSTALL PROCESS WITHOUT DATA LOSS.

Enter “yes” to continue.

The installation process will now continue and will:

1. Delete the existing logical storage configuration on the appliance head disks.
2. Create a new logical storage partition; depending on the appliance type this may be a pair of mirrored disks or a LUN stripe across all disks in the appliance.
3. Install the Operating System and appliance software on the system.
4. After installation completes you will be prompted to remove the USB stick and reboot. Press a key to reboot the system.
5. During the reboot process, the system will perform an install process and return to the login prompt. During this sequence, you may need to answer questions presented on the console screen.

Performing a configuration restore

This process is normally carried out after a quick restore (QR) or if a replacement appliance has been received. It restores the appliance to the same state as it was when the configuration file was created. It is important that there are no configured backup target devices on the appliance.

-
- ❗ **IMPORTANT:** During this process you may be prompted to provide the Cluster ID. The Cluster ID is the same as the System ID that can be found on the Device Management page of the StoreOnce Management Console. Its value is assigned in the factory set up process and is a 12-character string in the format HP<SerialNumber of Appliance>.
-

This process requires the latest configuration files that should have been saved and copied locally to the local system. You will require the following files:

- <config_filename>.zip
 - <config_filename>.txt
 - <keystore_filename>.kms (if keystores have been saved for Security features)
1. Check the Cluster ID against the value shown in the configuration text file, <config_filename>.txt, using the StoreOnce CLI command:

```
system show config
```
 2. If necessary reset the Cluster ID of the cluster to the ID of the original appliance, the cluster ID is shown in the configuration text file, run the command:

```
system set cluster <cluster_id>
```

This step may not be necessary if there has been no replacement hardware or if the serial number of the original appliance has been copied to the BIOS settings of the replacement appliance.

-
- ❗ **IMPORTANT:** You can only restore the configuration file to an appliance that has the same cluster ID as the one from which the configuration was taken.
-

3. Using the latest <config_filename>.txt file, manually apply all of the settings within this configuration text file using the StoreOnce CLI commands and instructions exactly as shown. This will ensure that the customer configuration is restored to its previous configuration. It is very important that this is done manually before attempting to restore the device settings automatically.

NOTE: If the product has additional storage connected, please ensure Capacity Upgrade Kit licenses are applied.

4. Reconfigure the storage for the appliance using the commands:

```
hardware discover storage
hardware add storage
```

5. Monitor the expansion using the following command:

```
system show status
```

This command will return either of the following after an add command has been sent:

- Adding X,XXXGB...
- Formatted XXGB, which means that the storage and file system has been configured and is ready for use. Parity initialization may still be in progress.

The following output is an example; the values shown may not match your appliance-specific values.

```
# system show status
```

```
Status
```

```
-----
```

```
Formatted 15,070.76GB
```

```
Service Sets Status Notes
```

NOTE: The addition of storage will take a minimum of two hours to complete. You will not be able to complete the next steps until storage is formatted.

6. Using an SFTP client copy the saved configuration zip file to the `config` folder on the appliance.
 - **Using Linux**

```
sftp Admin@<IP_address>
cd config
put <config_filename>.zip
exit sftp
```
 - **Using a Windows sftp client**

Ensure the File Protocol is set to SFTP, not SCP.
Login as Admin.
Copy `<config_filename>.zip` to `config`.
7. Use the following StoreOnce CLI command to check that the file has been uploaded:

```
config show list
```
8. Run the StoreOnce CLI command:

```
config restore devices <config_filename>
```

This will restore device settings for the appliance.
9. After configuration recovery backups can be configured and replication mappings re-established in order to reverse replicate data back to the appliance (see replication information in the user guide)

11 Support and other resources

Accessing Hewlett Packard Enterprise Support

- For live assistance, go to the Contact Hewlett Packard Enterprise Worldwide website:
www.hpe.com/assistance
- To access documentation and support services, go to the Hewlett Packard Enterprise Support Center website:
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, go to either of the following:
 - Hewlett Packard Enterprise Support Center **Get connected with updates** page:
www.hpe.com/support/e-updates
 - Software Depot website:
www.hpe.com/support/softwaredepot
- 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:
www.hpe.com/support/AccessToSupportMaterials

① **IMPORTANT:** Access to some updates might require product entitlement when accessed through the Hewlett Packard Enterprise Support Center. You must have an HP Passport set up with relevant entitlements.

Websites

Website	Link
Hewlett Packard Enterprise Information Library	www.hpe.com/info/enterprise/docs
Hewlett Packard Enterprise Support Center	www.hpe.com/support/hpesc

Website	Link
Contact Hewlett Packard Enterprise Worldwide	www.hpe.com/assistance
Subscription Service/Support Alerts	www.hpe.com/support/e-updates
Software Depot	www.hpe.com/support/softwaredepot
Customer Self Repair	www.hpe.com/support/selfrepair
Insight Remote Support	www.hpe.com/info/insightremotesupport/docs
Serviceguard Solutions for HP-UX	www.hpe.com/info/hpux-serviceguard-docs
Single Point of Connectivity Knowledge (SPOCK) Storage compatibility matrix	www.hpe.com/storage/spock
Storage white papers and analyst reports	www.hpe.com/storage/whitepapers

Customer self repair

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

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

www.hpe.com/support/selfrepair

Remote support

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

For more information and device support details, go to the following website:

www.hpe.com/info/insightremotesupport/docs

Documentation feedback

Hewlett Packard Enterprise is committed to providing documentation that meets your needs. To help us improve the documentation, send any errors, suggestions, or comments to Documentation Feedback (docsfeedback@hpe.com). When submitting your feedback, include the document title, part number, edition, and publication date located on the front cover of the document. For online help content, include the product name, product version, help edition, and publication date located on the legal notices page.

A Warranty and regulatory information

For important safety, environmental, and regulatory information, see *Safety and Compliance Information for Server, Storage, Power, Networking, and Rack Products*, available at www.hpe.com/support/Safety-Compliance-EnterpriseProducts.

Warranty information

HPE ProLiant and x86 Servers and Options

www.hpe.com/support/ProLiantServers-Warranties

HPE Enterprise Servers

www.hpe.com/support/EnterpriseServers-Warranties

HPE Storage Products

www.hpe.com/support/Storage-Warranties

HPE Networking Products

www.hpe.com/support/Networking-Warranties

Regulatory information

Belarus Kazakhstan Russia marking



Manufacturer and Local Representative Information

Manufacturer information:

- Hewlett Packard Enterprise Company, 3000 Hanover Street, Palo Alto, CA 94304 U.S.

Local representative information Russian:

- **Russia:**

ООО «Хьюлетт Паккард Энтерпрайз», Российская Федерация, 125171, г. Москва, Ленинградское шоссе, 16А, стр.3, Телефон/факс: +7 495 797 35 00

- **Belarus:**

ИООО «Хьюлетт-Паккард Бел», Республика Беларусь, 220030, г. Минск, ул. Интернациональная, 36-1, Телефон/факс: +375 17 392 28 20

- **Kazakhstan:**

ТОО «Хьюлетт-Паккард (К)», Республика Казахстан, 050040, г. Алматы, Бостандыкский район, проспект Аль-Фараби, 77/7, Телефон/факс: + 7 727 355 35 52

Local representative information Kazakh:

- **Russia:**

ЖШС "Хьюлетт Паккард Энтерпрайз", Ресей Федерациясы, 125171,
Мәскеу, Ленинград тас жолы, 16А блок 3, Телефон/факс: +7 495 797 35 00

- **Belarus:**

«HEWLETT-PACKARD Bel» ЖШС, Беларусь Республикасы, 220030, Минск қ.,
Интернациональная көшесі, 36/1, Телефон/факс: +375 17 392 28 20

- **Kazakhstan:**

ЖШС «Хьюлетт-Паккард (К)», Қазақстан Республикасы, 050040, Алматы қ.,
Бостандық ауданы, Әл-Фараби даңғылы, 77/7, Телефон/факс: +7 727 355 35 52

Manufacturing date:

The manufacturing date is defined by the serial number.

CCSYWWZZZZ (serial number format for this product)

Valid date formats include:

- YWW, where Y indicates the year counting from within each new decade, with 2000 as the starting point; for example, 238: 2 for 2002 and 38 for the week of September 9. In addition, 2010 is indicated by 0, 2011 by 1, 2012 by 2, 2013 by 3, and so forth.
- YYWW, where YY indicates the year, using a base year of 2000; for example, 0238: 02 for 2002 and 38 for the week of September 9.

Turkey RoHS material content declaration

Türkiye Cumhuriyeti: [EEE Yönetmeliğine Uygundur](#)

Ukraine RoHS material content declaration

Обладнання відповідає вимогам Технічного регламенту щодо обмеження використання деяких небезпечних речовин в електричному та електронному обладнанні, затвердженого постановою Кабінету Міністрів України від 3 грудня 2008 № 1057