Hewlett Packard Enterprise

HPE Cloudline CL2100 Gen10 Server User and Maintenance Guide

Abstract

This document is for the person who installs, administers, services, and troubleshoots servers. This guide describes identification and maintenance procedures, and specifications and requirements for hardware components and software. Hewlett Packard Enterprise assumes you are qualified in the servicing of computer equipment, trained in recognizing hazards in products, and are familiar with weight and stability precautions.

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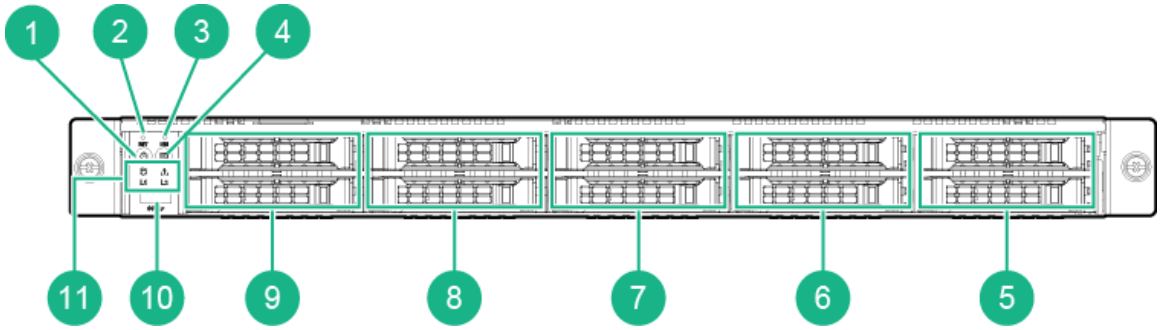
Edition: 1

Contents

Component identification

Front panel identification

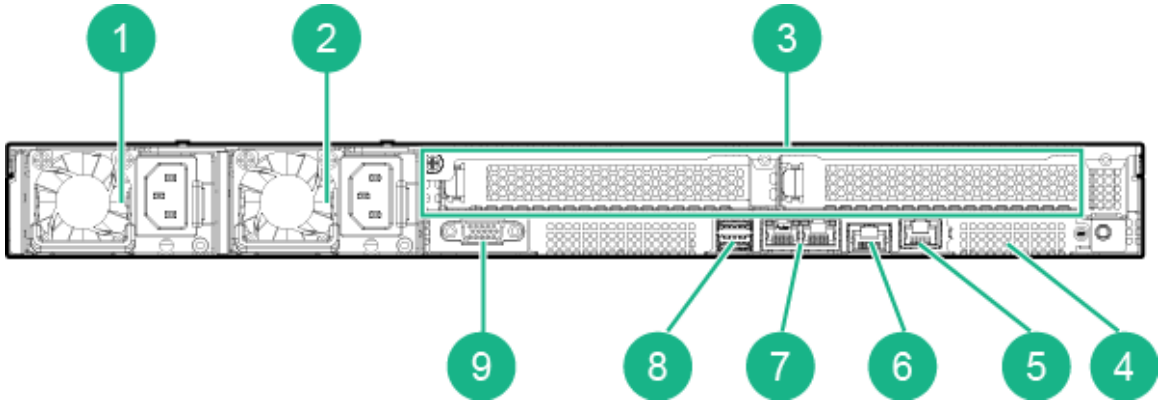


Item	Description
1*	Power button with LED
2	Reset button
3	NMI button
4*	UID button
5	Hard drives 8 / 9
6**	Hard drives 6 / 7
7**	Hard drives 4 / 5
8**	Hard drives 3 / 2
9**	Hard drives 0 / 1
10	USB 3.0 port
11*	System LEDs

*See “Front panel LEDs” on page 16 for descriptions of LEDs.

**Hard drive sequence is from top to bottom

Rear panel identification



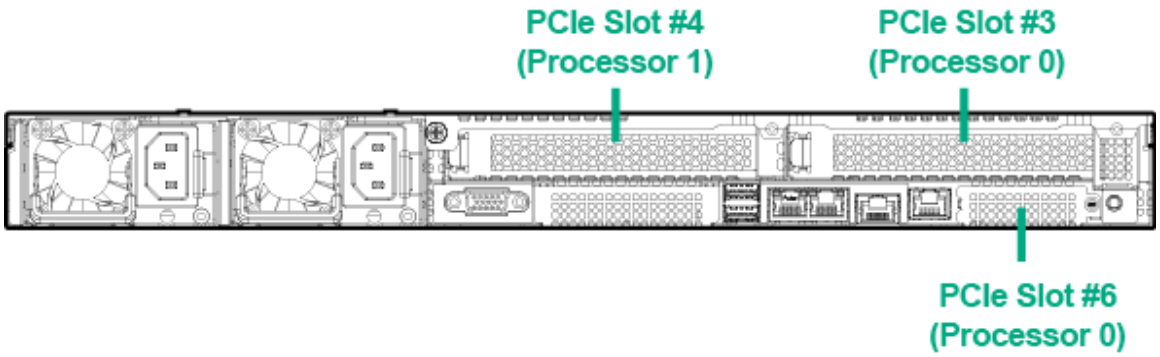
Item	Description
1*	Power Supply Unit 2
2*	Power Supply Unit 1
3**	PCIE slot 3 (Processor 1) PCIE slot 2 (Processor 0)
4	OCP mezzanine card slot
5*	RJ-45 management port
6	Serial port (If a DB9 connector interface is required, an RJ-45 to DB9 cable is needed)
7*	RJ-45 LAN ports (2)
8	USB 3.0 ports (2)
9	VGA port

*See “Rear panel LEDs” on page 18 for descriptions of LEDs.
** Sequence is from left to right.

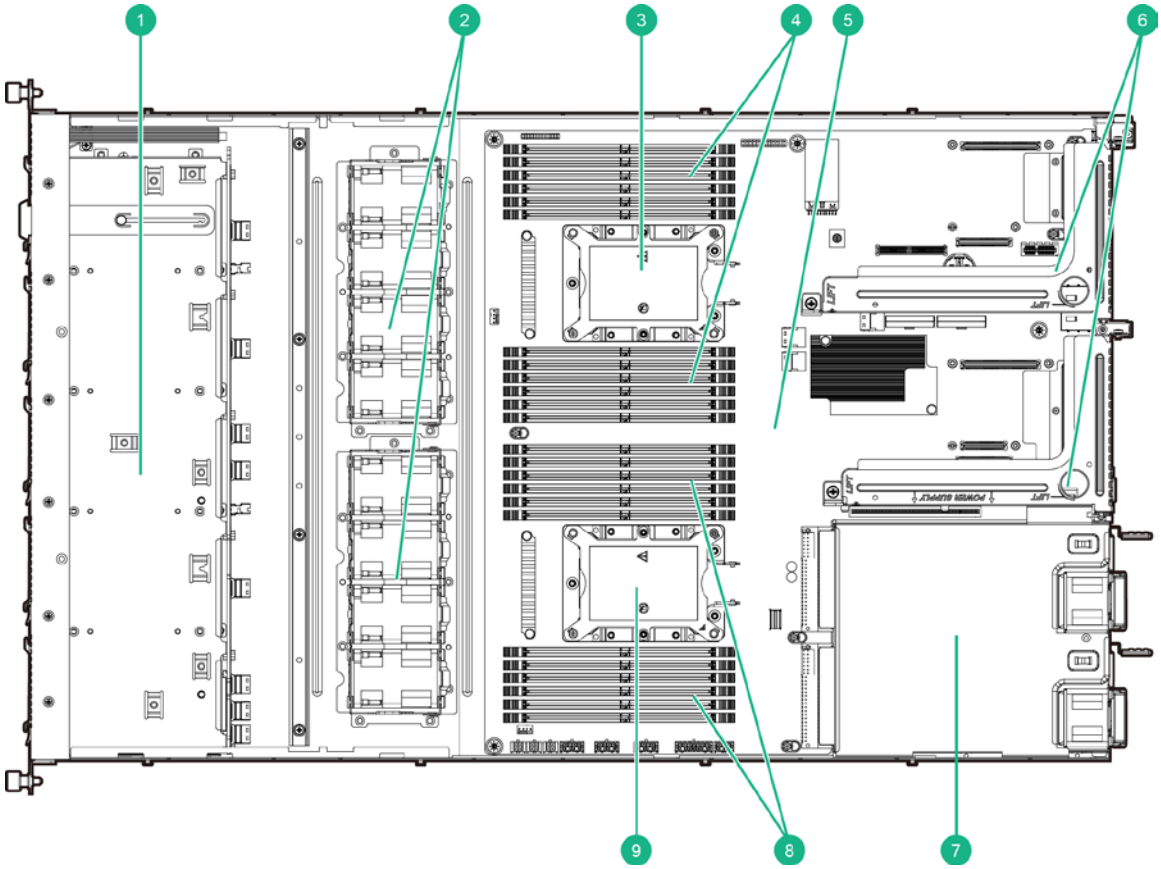
BIOS PCIe Slot Number Mapping

The following table and image describes how each PCIe slot is defined in BIOS:

Physical Slot	BIOS Definition
PCIe Slot 2 (Processor 0)	PCIe slot 3 (Processor 0)
PCIe Slot 3 (Processor 0)	PCIe slot 4 (Processor 1)
OCP Mezzanine Card Slot (Processor 0)	PCIe slot 6 (Processor 0)

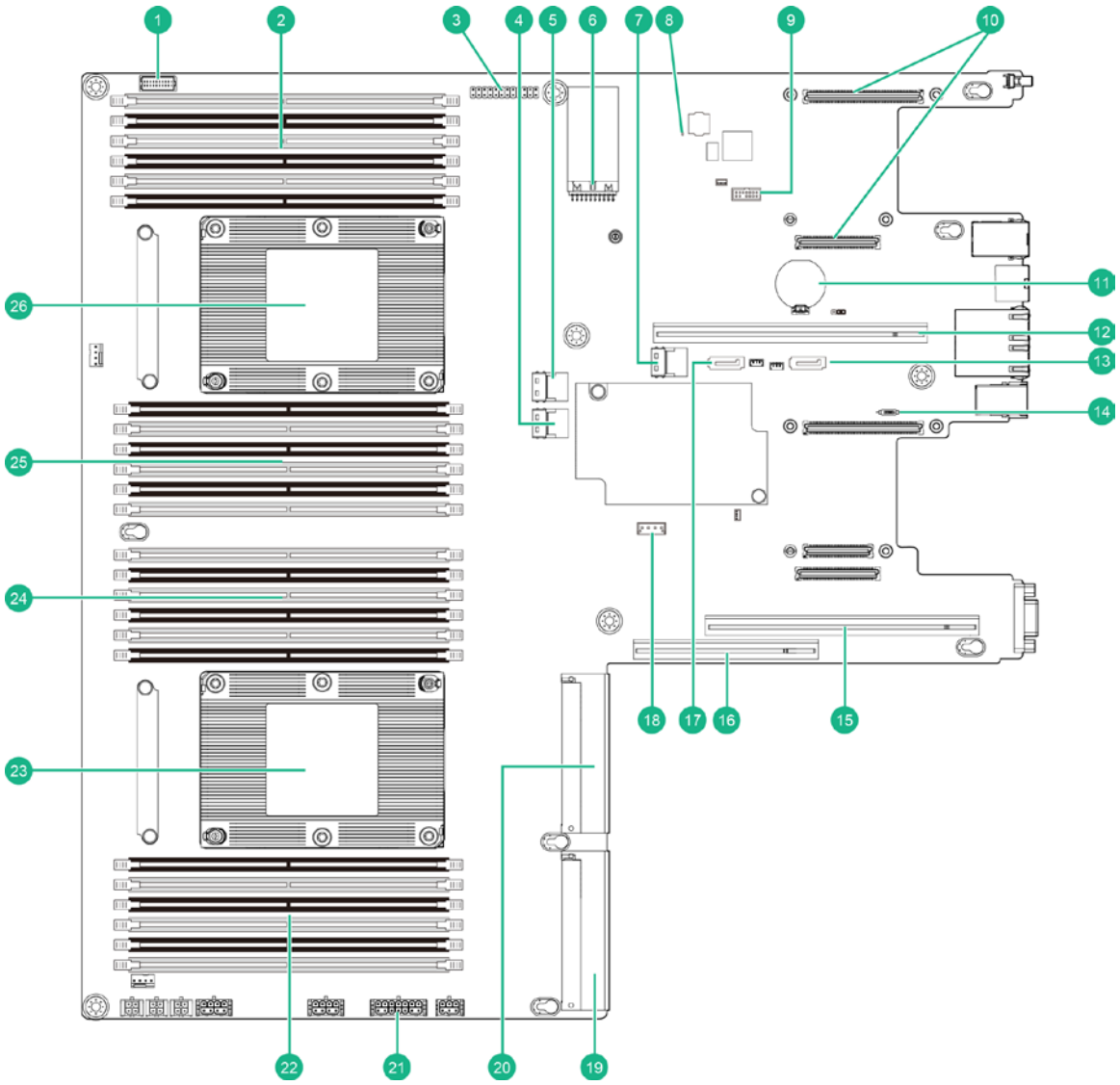

PCIe Slot #4
(Processor 1)
PCIe Slot #3
(Processor 0)
PCIe Slot #6
(Processor 0)

Server components



Item	Description
1	Front hard drives (10)
2	System fans (8)
3	Heatsink / Processor 0 socket
4	Processor 0 DIMM slots (12)
5	System board
6	PCIE add-on cards (2)
7	Redundant Power Supply Units (2)
8	Processor 1 DIMM slots (12)
9	Heatsink / Processor 1 socket

System board components



Item	Description
1	HDD back plane board connector
2	Processor 0 DIMM slots (6)
3	Front panel connector
4	Slimline SAS connector #1 (SATA1)
5	Slimline SAS connector #0 (SATA0)
6	Front panel USB 3.0 connector
7	sSATA connector #0 (sSATA0)
8	BMC firmware readiness LED
9	TPM module connector
10	OCP mezzanine connector #1
11	System battery
12	Riser slot connector #2
13	sSATA connector #5 (for ODD/2.5” HDD)

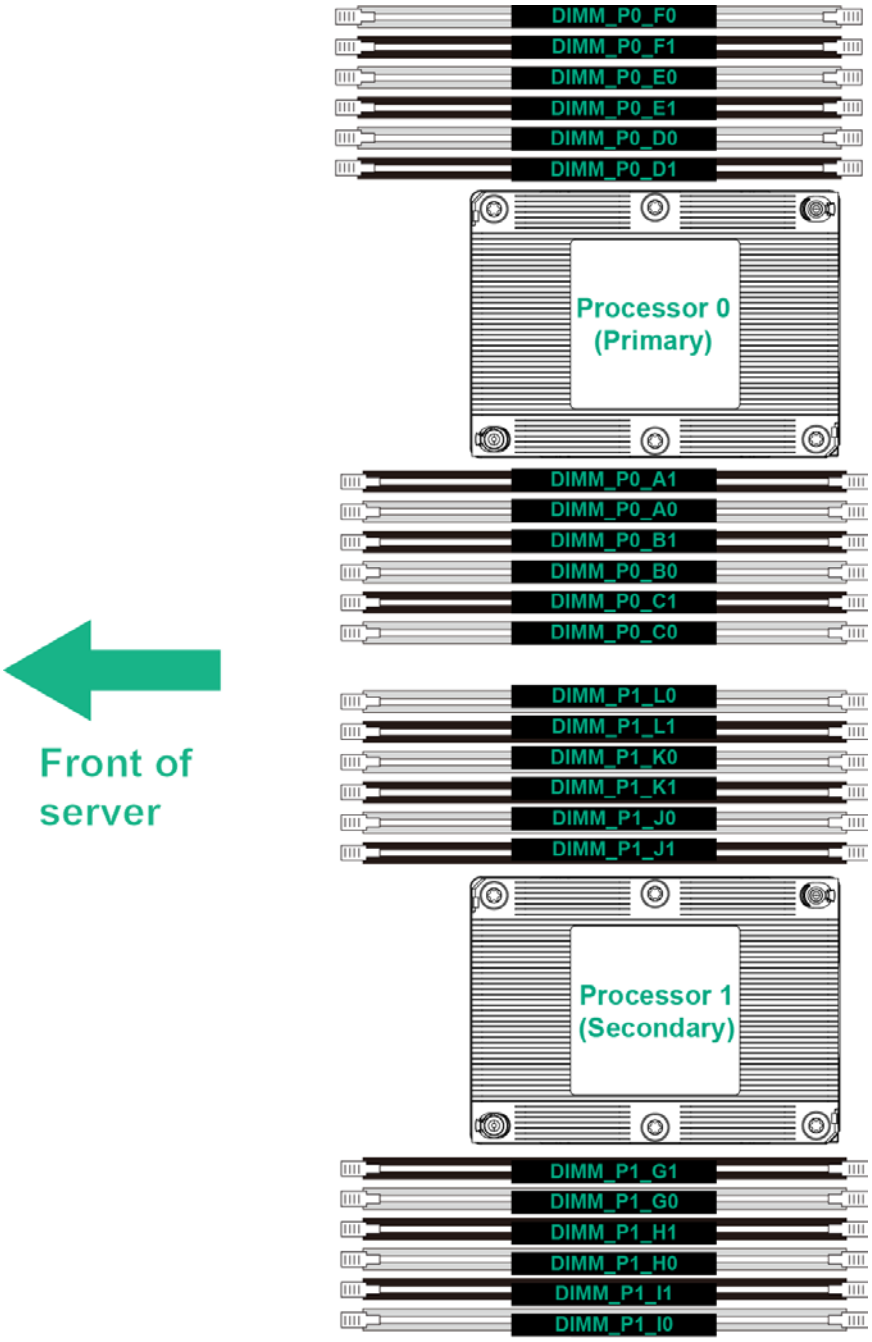
Item	Description
14	NCSI switch*
15	Riser slot connector #3
16	NVMe riser connector
17	sSATA connector #4
18	VROC upgrade module (optional)
19	Power Supply Unit connector 2 (secondary)
20	Power Supply Unit connector 1 (primary)
21	HDD back plane board power connector
22	Processor 1 DIMM slots (6)
23	Processor 1 socket
24	Processor 1 DIMM slots (6)
25	Processor 0 DIMM slots (6)
26	Processor 0 socket

***** The following table describes the type of connections enabled for various LAN combinations as determined by the NCSI switch .

Connection Devices			NCSI Switch Setting	Connection Setting
Dedicated LAN	Shared NIC	OCP Card		
✓	✓		Disabled	Both, with dedicated LAN as the first priority
✓			Disabled	Dedicated LAN only
	✓		Disabled	Shared NIC only
✓		✓	Disabled	Dedicated LAN only
✓		✓	Enabled	Both, with dedicated LAN as the first priority
✓	✓	✓	Enabled	Dedicated LAN and OCP card only, with dedicated LAN as the first priority
	✓	✓	Enabled	OCP card only

DIMM slot locations

DIMM slots are numbered sequentially for each processor. Use the following population order for spare replacement.



Memory Module Population Rules

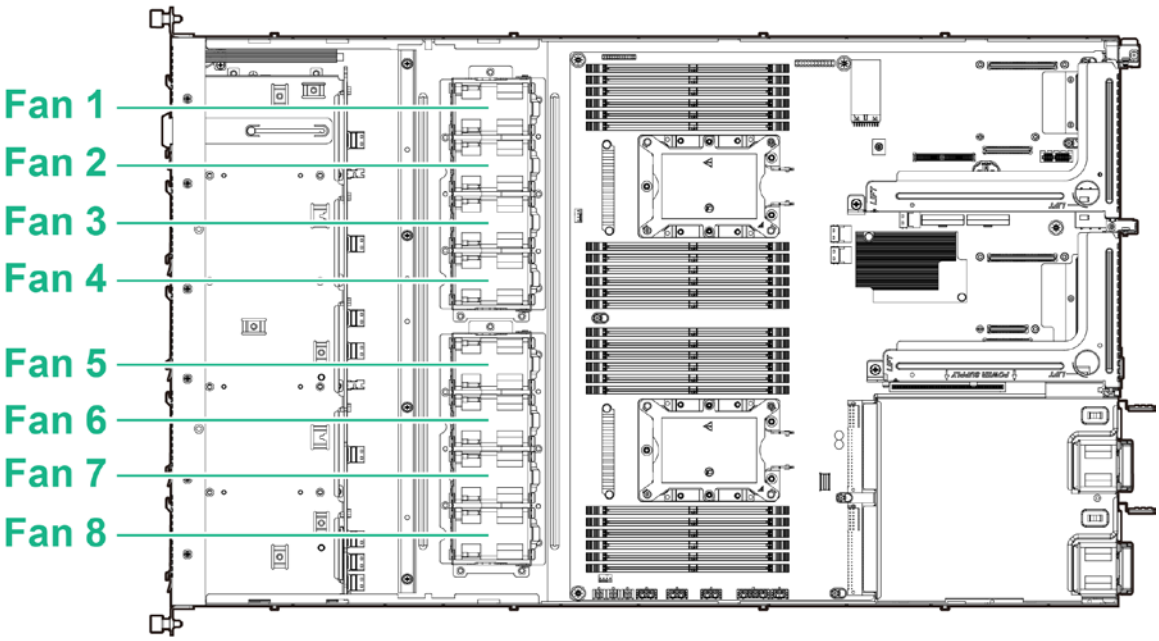
All DIMMs must be DDR4 DIMMs.

- DIMMs must be installed in the Processor0 memory slots first.
- There is no priority for populating DIMMs into channels.
- When populating DIMMs into a channel, slot #0 must be populated first, and then followed by slot #1.

- Mixing of LRDIMMs and RDIMMs is not allowed in the same channel.
- Mixing of non-3DS and 3DS LRDIMMs is not allowed in the same channel.

Type	Rank Per DIMM and Data Width	DIMM Capacity (GB)		Speed (MT/s); Voltage (V); Slots per Channel (SPC) & DIMMs per Channel (DPC)	
				2 Slots per Channel	
		DRAM Density		1DPC	2DPC
		4Gb	8Gb	1.2V	1.2V
RDIMM	SRx4	8GB	16GB	2666	2666
RDIMM	SRx8	4GB	8GB		
RDIMM	DRx8	8GB	16GB		
RDIMM	DRx4	16GB	32GB		
RDIMM 3DS	QRx4	N/A	2H-64GB		
	8Rx4	N/A	4H-128GB		
LRDIMM	QRx4	32GB	64GB		
LRDIMM 3DS	QRx4	N/A	2H-64GB		
	8Rx4	N/A	4H-128GB		

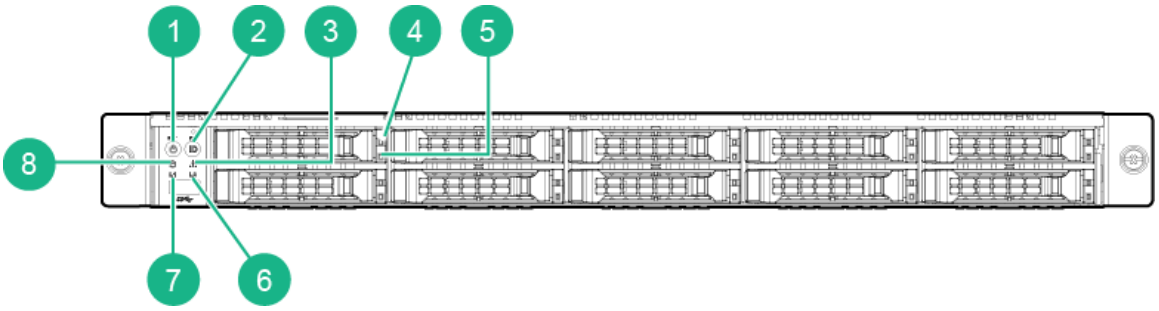
Fan locations



Status LEDs

The status LED indicators aid in problem diagnosis by indicating the status of system components and operations of the server.

Front panel LEDs



Item	Function	Status	Status Description
1	Power	Off	System is not powered on or in ACPI S5 (powered off) or S4 state (hibernate)
		Flashing Green	System is in ACPI S1 state (Sleep)
		Solid Green	System is powered on
2	Unit identification	Off	UID is off
		Blue	UID is on
3	System status	Off	Non-critical condition, may include: Redundant power module failure Temperature and voltage issue
		Flashing Amber	Non-critical condition, may include: Redundant power module failure Temperature and voltage issue
		Solid Amber	Critical condition, may include: System fan failure System temperature
		Green	System is operating normally.
4	HDD LED 1	See following table	
5	HDD LED 2	Off	No hard drive is present
		Solid Green	Hard drive is present
6	LAN2 Active/ Link	Off	No data transmission is occurring
		Flashing Green	Data transmission is occurring.
		Solid Green	Link between system and network or no access
7	LAN1 Active/ Link	Off	No data transmission is occurring
		Flashing Green	Data transmission is occurring.
		Solid Green	Link between system and network or no access
8	HDD Status	Off	No HDD access or no HDD fault
		Flashing Green & Amber	HDD is rebuilding
		Solid Amber	HDD fault
		Flashing Green	HDD accessed

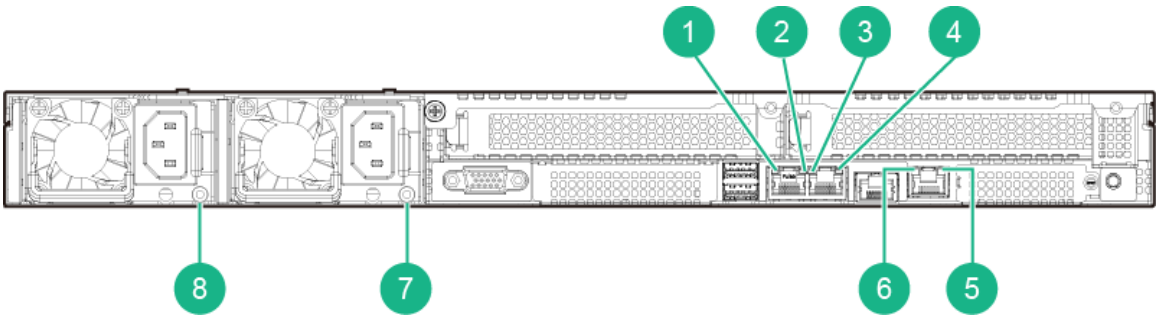
Item	Function	Status	Status Description
		Solid Green	HDD located

Hard drive LED1 behavior

RAID SKU	LED1	Locate	HDD Fault	Rebuilding	HDD Access	HDD Present (No Access)
No RAID Configuration (via HBA, PCH)	Disk LED	Green	On (*1)	Off	Green	Off
		Amber	Off	Off	Amber	Off
	Removed HDD Slot	Green	On (*1)	Off	Green	--
		Amber	Off	Off	Amber	--
RAID Configuration (via HW RAID Card or SW RAID Card)	Disk LED	Green	On	Off	Alternate	Off
		Amber	Off	On	(Low Speed: 2Hz)	Off
	Removed HDD Slot	Green	On (*1)	Off	*3	--
		Amber	Off	On	*3	--

*1 Depends on HBA/Utility specifications.
*2 Blink cycle depends on HDD's activity signal.
*3 If HDD is pulled out during the rebuilding process, the disk status of the HDD is regarded as fault.

Rear panel LEDs



Item	Function	Status	Status Description
1, 3, and 6	NIC Link (left)	Off	10 Mbps data rate
		Green	100 Mbps data rate
		Yellow	1 Gbps data rate
2, 4, and 5	NIC Link (right)	Off	No data transmission is occurring
		Flashing Green	Data transmission is occurring
		Solid Green	Link between system and network or no access
7 and 8	Power Supply	Off	No AC power
		Flashing Green	In standby/sleep/redundant/offline mode
		Flashing Green (2Hz)	Undergoing firmware update
		Solid Green	Output on and OK
		Flashing Amber	Power supply warning event
		Solid Amber	12V Fault, or fan lock

Operations

Power down the server

Before powering down the server for any upgrade or maintenance procedures, perform a backup of critical server data and programs.

IMPORTANT: When the server is in standby mode, auxiliary power is still being provided to the system.

To power down the server, use one of the following methods:

- Press and release the Power On/Standby button.

  This method initiates a controlled shutdown of applications and the OS before the server enters standby mode.

- Press and hold the Power On/Standby button for more than 4 seconds to force the server to enter standby mode.

  This method forces the server to enter standby mode without properly exiting applications and the OS. If an application stops responding, you can use this method to force a shutdown.

- Use a virtual power button selection through BMC.

  This method initiates a controlled remote shutdown of applications and the OS before the server enters standby mode.

Before proceeding, verify that the server is in standby mode by observing that the system power LED is amber.

Using Power Control function through BMC

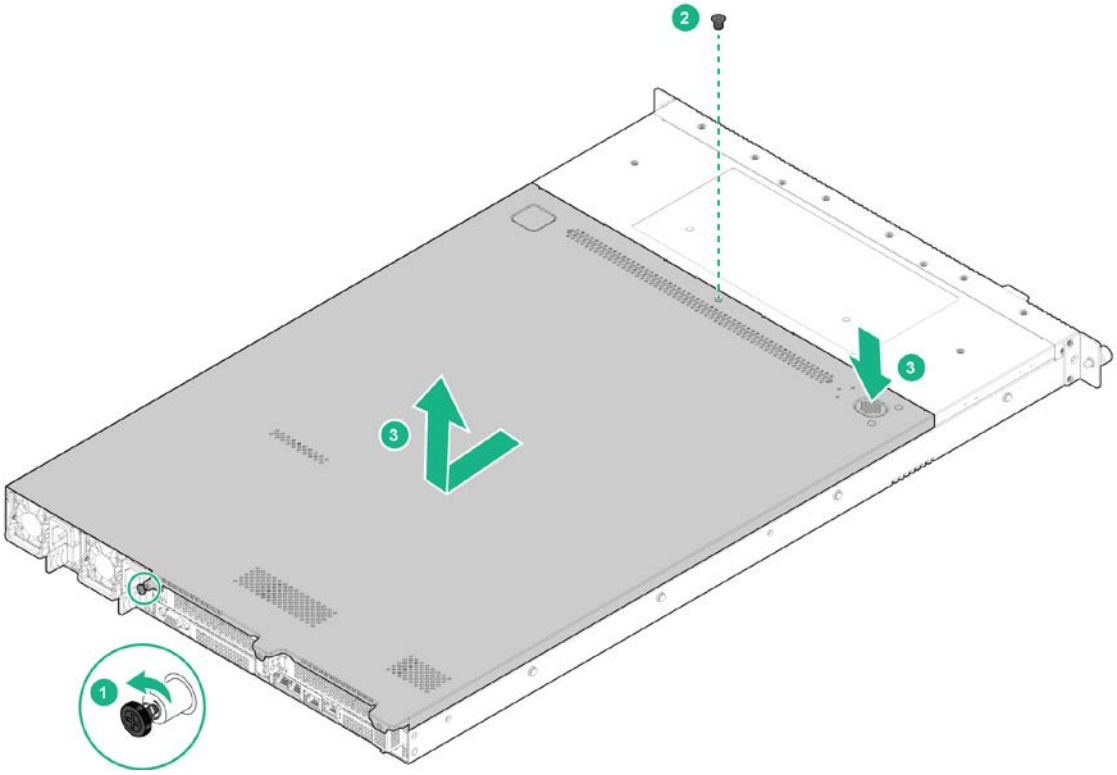
The following options are available when using Power Control function through BMC:

- Power On—Similar to press and release of the Power On/Standby button.
- Power Off—Similar to the press and hold of the Power On/Standby button more than 4 seconds.
- Power Cycle—Power off and then power on the server.
- Hard Reset—A forced reboot that does not reach standby.

Remove the rear access panel

To remove the component:

1. Power down the server (on page 19).
2. Disconnect all peripheral cables from the server.
3. Remove the rear access panel:
   a. Loosen the thumbscrew at the rear of the system securing the rear access panel to the chassis.
   b. Remove the screw at the front of the system securing rear access panel to the chassis.
   c. Using the grip areas on the access panel slide the access panel back about 1.5 cm (0.5 in) to lift and remove the rear access panel.

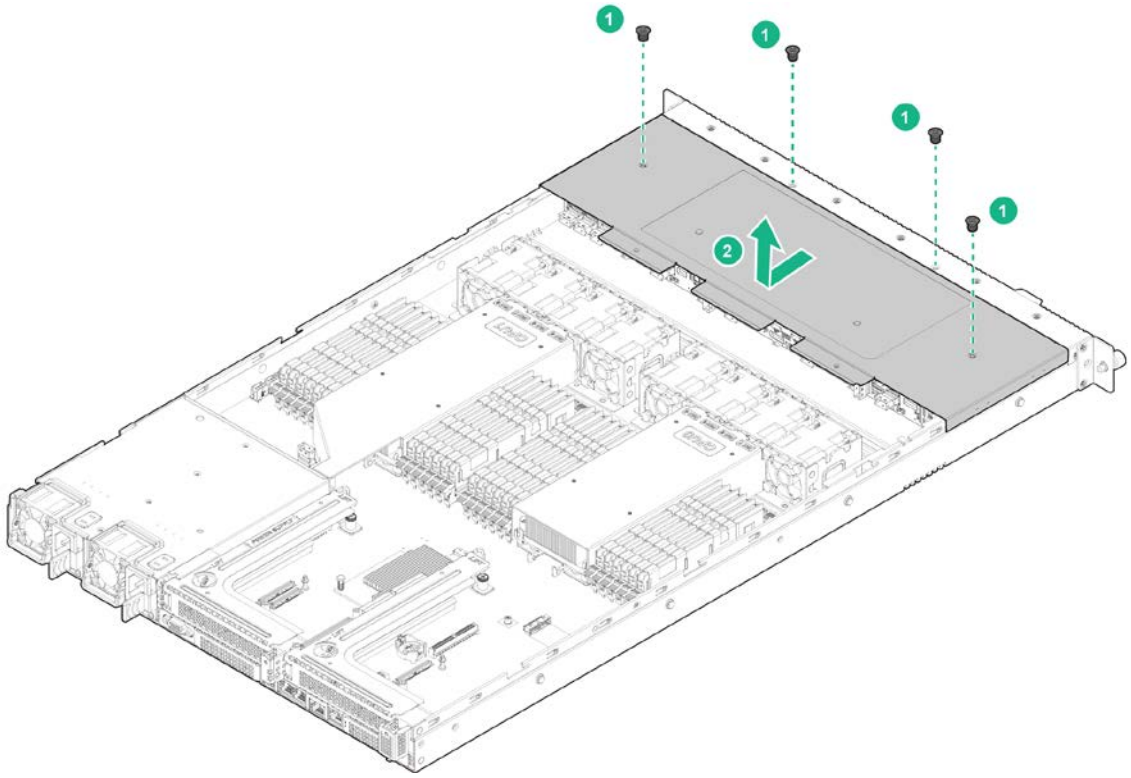


Turn the rear access panel over to locate the access panel label. This label provides information on installing various options, flexible memory configurations, and LED status indicators.

Remove the front access panel

To remove the component:

1. Power down the server (on page 19).
2. Disconnect all peripheral cables from the server.
3. Remove the rear access panel (on page 20)
4. Remove the front access panel:
   a. Remove the four screws securing the front access panel to the chassis.
   b. Lift and remove the front access panel.



Install the front access panel

WARNING: To reduce the risk of personal injury from hot surfaces, allow the internal system components to cool before touching them.

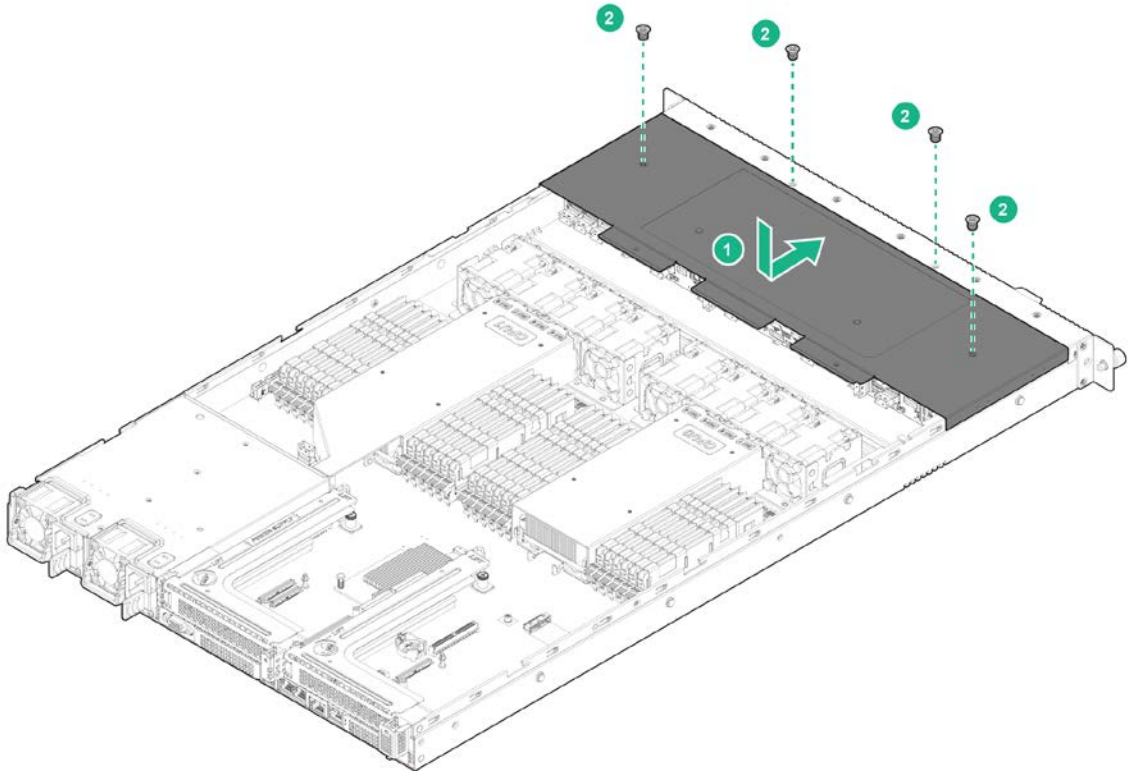
CAUTION: To prevent damage to electrical components, properly ground the server before beginning any installation procedure. Improper grounding can cause ESD.

CAUTION: Do not operate the server with the access panel open or removed. Operating the server in this manner results in improper airflow and improper cooling that can lead to thermal damage.

To install the component:

1. Place the front access panel on top of the front of server.

   Be sure all notches are in alignment.
2. Secure the front access panel to the chassis using the four screws.



Install the rear access panel

WARNING: To reduce the risk of personal injury from hot surfaces, allow the internal system components to cool before touching them.

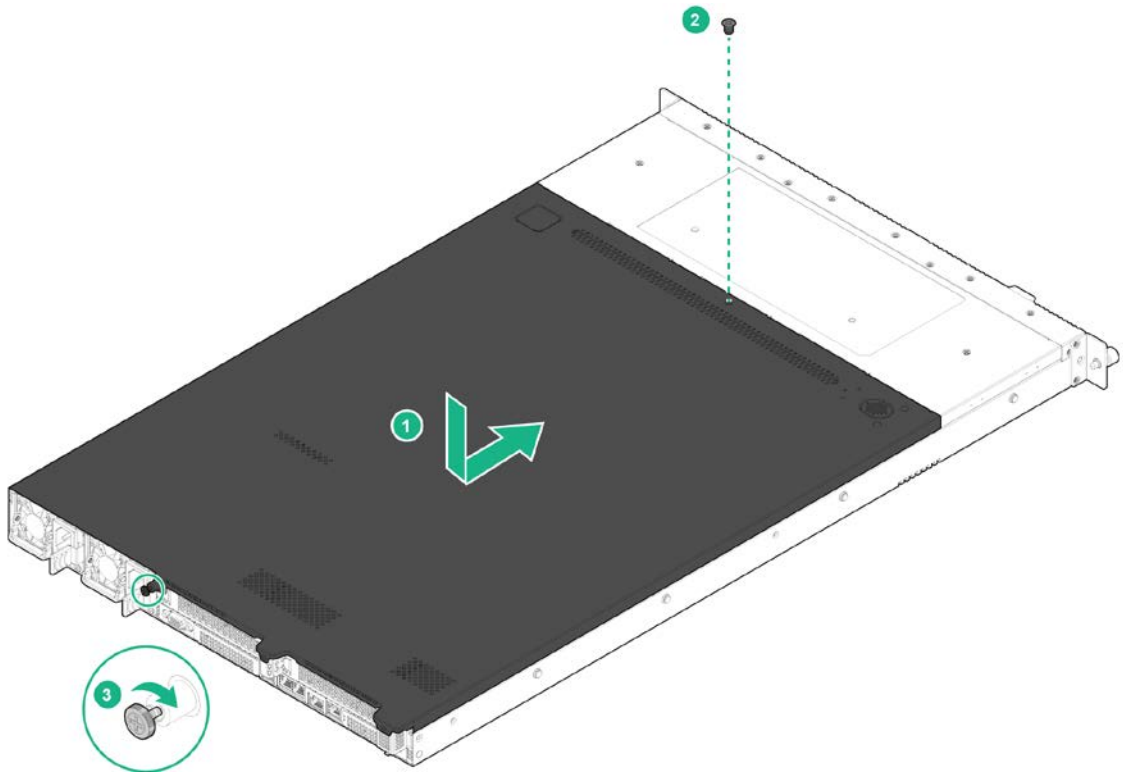
CAUTION: To prevent damage to electrical components, properly ground the server before beginning any installation procedure. Improper grounding can cause ESD.

CAUTION: Do not operate the server with the access panel open or removed. Operating the server in this manner results in improper airflow and improper cooling that can lead to thermal damage.

To install the component:

1. Install the front access panel (on page 22).
2. Place the rear access panel on top of the rear of the server.

   Be sure all notches are in alignment.
3. Slide the rear access panel toward the front of the server. The access panel locks into position.
4. Secure the rear access panel to the chassis using the screw at the front of the system.
5. Secure the rear access panel to the chassis using thumb screw at the rear of the system.



Setup

Overview

Installing a server requires the following steps:

1. Power up the server ("Powering up the server" on page 24).
2. Configure the server ("Installing the operating system" on page 24).

Powering up the server

The rack initiates an automatic power-up sequence when the server is installed. If the default setting is changed, use one of the following methods to power up the server:

- Use Power Control function through BMC web interface.
- Press and release the Power On/Standby button.

When the server goes from the standby mode to the full power mode, the system power LED changes from off to solid green.

Powering on and selecting boot options in BIOS setup

1. Press the Power On/Standby button.
2. During the initial boot, press the **Delete** key in the HPE POST screen to enter the BIOS menu screen. By default, the menus are in the English language.
3. Go to the **Boot menu** screen and select the desired Boot Option Priority.
4. Press **F10** to **Save & Exit** and continue the booting process using the device you have chosen.

Installing the operating system

To operate properly, the server must have a supported operating system installed. For the latest information on operating system support, see the product QuickSpecs on the Hewlett Packard Enterprise website (**http://www.hpe.com/info/supportos**).

To install an operating system on the server, insert the operating system CD into the USB-attached DVD-ROM drive (user provided) and reboot the node.

Software and firmware should be updated before using the node for the first time, unless any installed software or components require an older version.

Driver resources

When adding new components (VGA, NIC, and so on) or re-installing the OS on your server, required drivers can be found in the following websites:

- Core Chipset (Intel® INF Driver) - Intel **https://www.intel.com/**
- NIC (Intel® I350-AM2) - Intel: **https://www.intel.com/**
- VGA (AST2500) - ASPEED: **https://www.aspeedtech.com/**

Software and configuration utilities

Product QuickSpecs

For more information about product features, specifications, options, configurations, and compatibility, see the product QuickSpecs on the Hewlett Packard Enterprise website (http://www.hpe.com/info/qs).

Server mode

The software and configuration utilities presented in this section operate in online mode, offline mode, or in both modes.

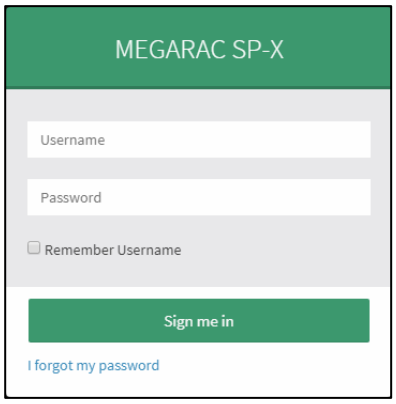
Software or configuration utility	Server mode
HPE BMC	Online and Offline
BMC RESTful API support	Online and Offline

HPE BMC

BMC is a remote server management processor embedded on the system boards of HPE CL2100 Gen10 servers. BMC enables the monitoring and controlling of servers from remote locations. HPE BMC management is a powerful tool that provides multiple ways to configure, update, monitor, and repair servers remotely. BMC (Standard) comes preconfigured on HPE servers without an **additional cost or license**.

Using BMC

To log in, you need to enter your username and password.



Login Page

- For basic login to the BMC Web UI use the following login:
  - Username: Refer to the label on the server for username information
    Password: Refer to the label on the server for password information
- For login using the Redfish protocol use the following login:

- Username: Administrator
  Password: Refer to the label on the server for password information

- For login using the ipmi protocol use the following login:
  - Username: admin
    Password: Refer to the label on the server for password information

BMC RESTful API support

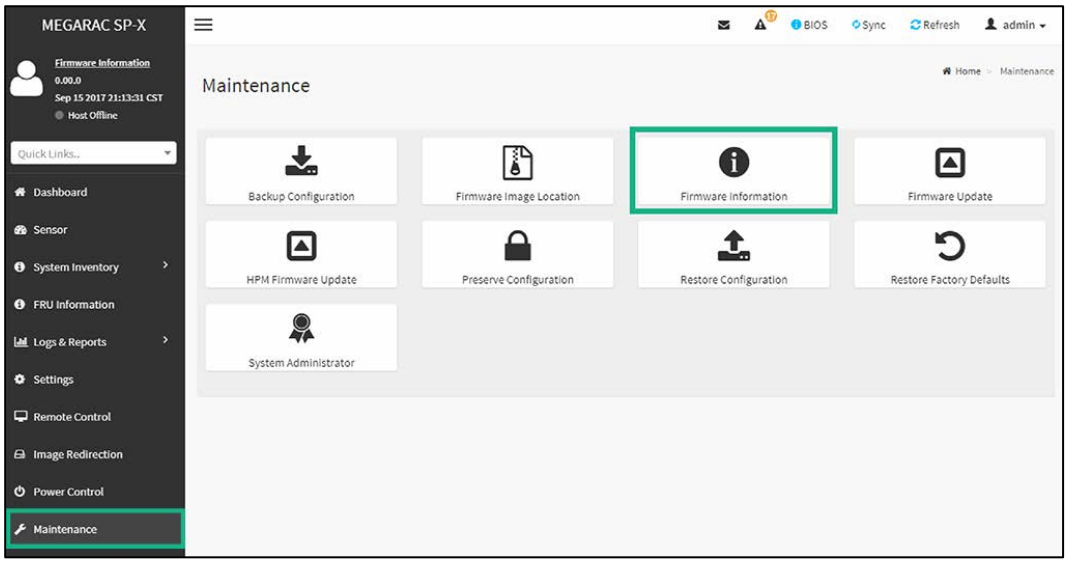
HPE BMC includes the RESTful API. The RESTful API is a management interface that server management tools can use to perform configuration, inventory, and monitoring of the CL2100 Gen10 server via BMC. The RESTful API uses basic HTTPS operations (GET, PUT, POST, DELETE, and PATCH) to submit or return JSON-formatted data with BMC web server. HPE BMC is Redfish 1.0-conformant.

For a comprehensive BMC User Interface guide, visit http://www.hpe.com/support/.

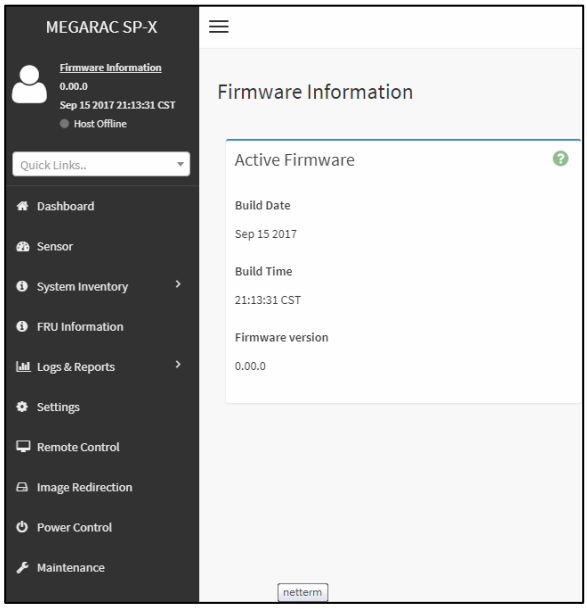
High level information on memory metrics are available under the upper layer: /redfish/v1/Systems/Self/Memory/<instance>, for detailed Metrics field please use other tools under BIOS/DOS/OS to fetch the information on the memory from SPD EEPROM.

Firmware Information

To check the current firmware version that is installed in your server, from the BMC menu bar, click > **Maintenance** > **Firmware Information**.

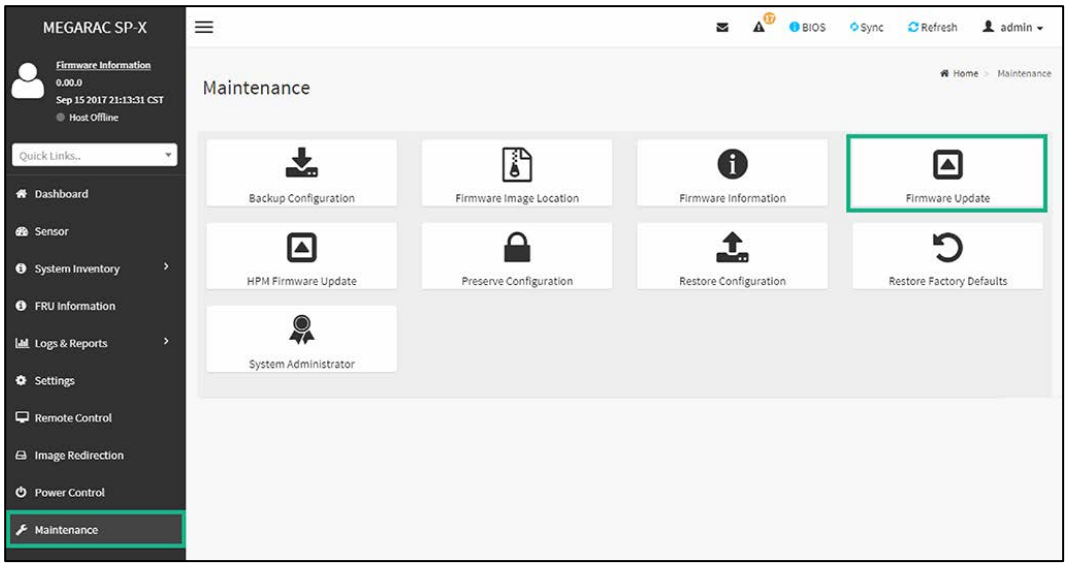


The current firmware information will be displayed.


MEGARAC SP-X
Firmware Information
0.00.0
Sep 15 2017 21:13:31 CST
Host Offline
Quick Links..
Dashboard
Sensor
System Inventory
FRU Information
Logs & Reports
Settings
Remote Control
Image Redirection
Power Control
Maintenance
Firmware Information
Active Firmware
Build Date
Sep 15 2017
Build Time
21:13:31 CST
Firmware version
0.00.0
netterm

Firmware update

To update the current firmware installed in your server, from the BMC menu bar, click **Maintenance** > **Firmware Update**.



WARNING: After entering update mode widgets, other web pages and services will not work. All open widgets will be closed automatically. If upgrade process is cancelled in the middle of the wizard, the device will be reset.

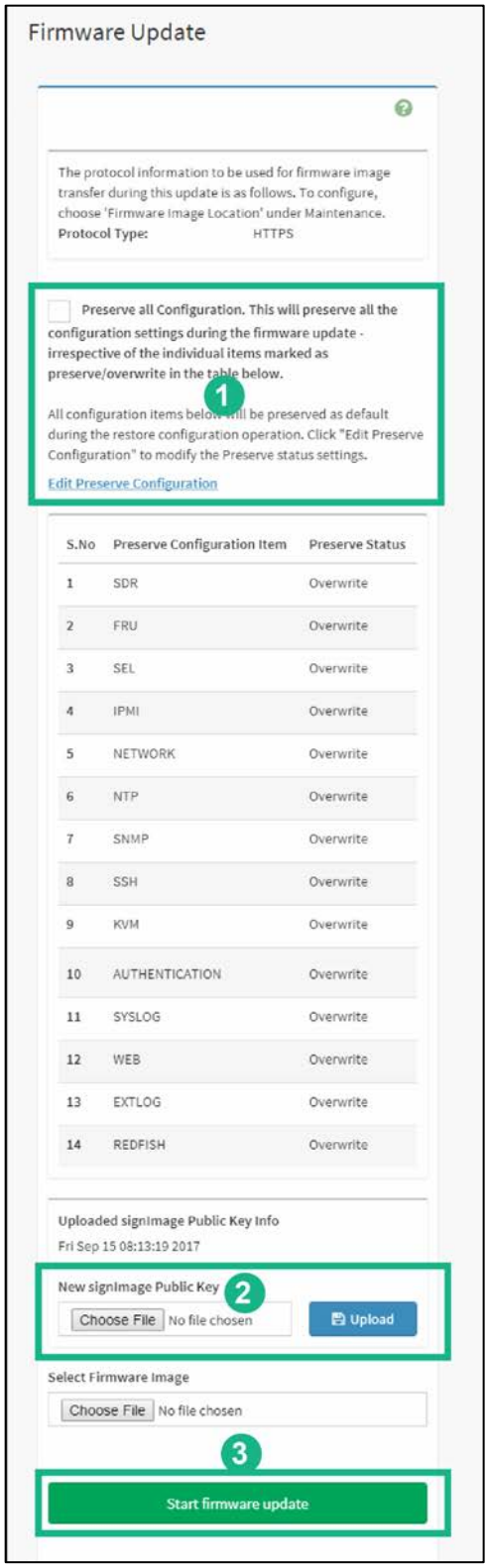
WARNING: The firmware upgrade process is a crucial operation. Make sure that the chances of a power or connectivity loss are minimal when performing this operation.

This wizard takes you through the process of updating the firmware. A reset of the box will automatically follow if the upgrade is completed or cancelled. An option to Preserve All Configuration is available. Enable it, if you wish to preserve configured settings through the upgrade.

Once you enter into Update Mode and choose to cancel the firmware flash operation, the BMC must be reset. This means that you must close the Internet browser and log back onto the BMC before you can perform any other types of operations.

Once Firmware upgrade using web is started, the regular *IPMI* command will not be allowed for safety concern if **Enable IPMI Command** handling during flashing support is disabled in project configuration.

1. Click **Preserve all Configuration** to preserve all configuration. You can also customize which configuration is retained by clicking the **Edit Preserve Configuration** option.

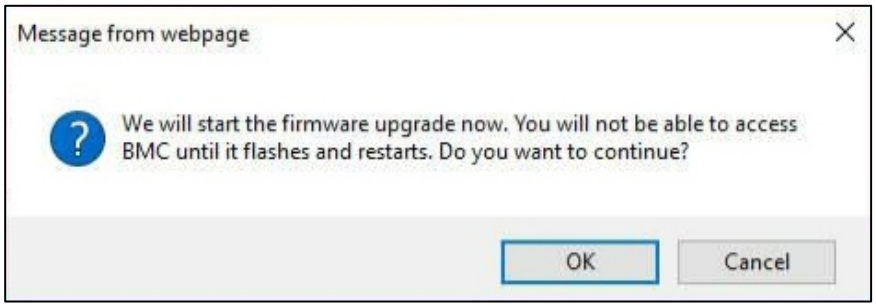


2. Click **Choose File** to select firmware image, then click **Upload**. The following actions will be automatically executed:

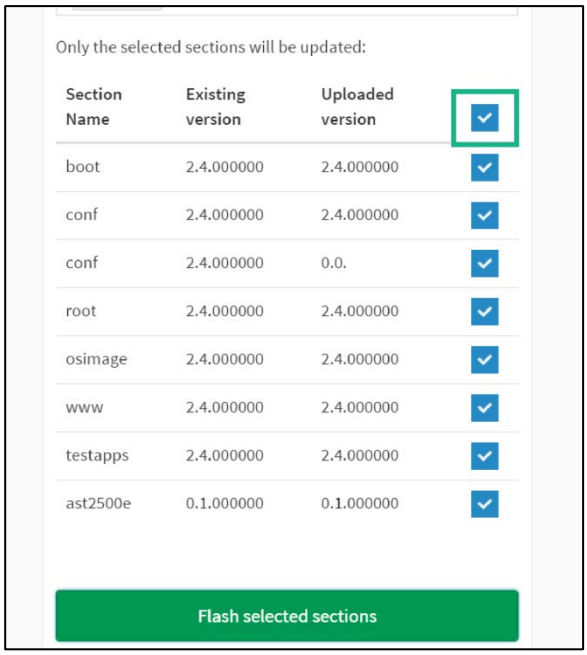
   - Closing all active client requests
   - Preparing Device for Firmware Upgrade
   - Uploading Firmware Image

   Note: A file upload pop-up will be displayed for http/https but in the case of tftp files, the file is automatically uploaded displaying the status of upload.

3. Click **Start firmware update** to start the firmware update. A pop-up window will ask for your confirmation to proceed with the update.
4. Click **OK** to start the firmware update.



5. Select the images you want to update. If you are updating all images, click the select all checkbox.



6. Click **Flash selected sections**. The firmware update page will now be disabled and you will not be able to perform any other tasks until firmware upgrade is completed and the device is rebooted.

Troubleshooting

Troubleshooting resources

Troubleshooting provides procedures for resolving common problems and comprehensive courses of action for fault isolation and identification, issue resolution, and software maintenance on servers and server blades. To view the guide, select a language:

- English (http://www.hpe.com/support/CL2100-2200Gen10-TSG-en)

System utilities

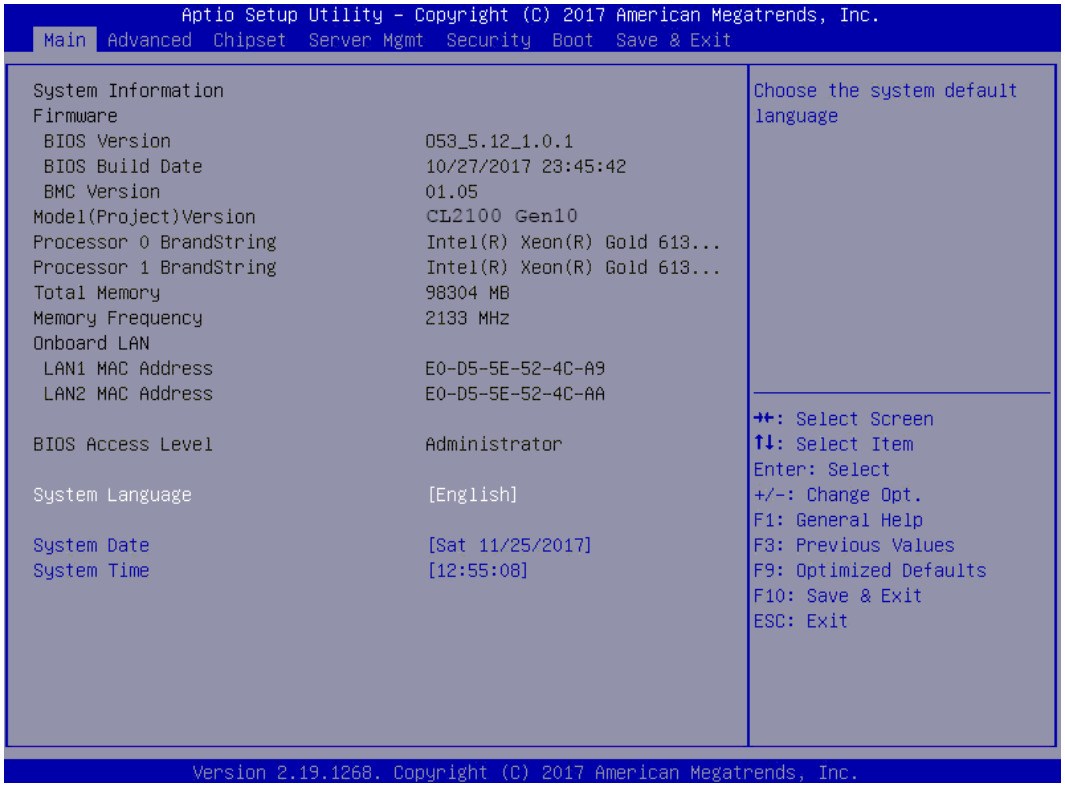
BIOS setup

Accessing the BIOS setup menu screen

1. To access the BIOS setup menu screen, turn on the server.
2. If the server is already turned on, save your data and close all open applications, then restart the server.
3. During POST, press Delete.

   NOTE: The server will take around 3 minutes from turning the power on, booting the system and loading system setup.

   If you fail to press Delete before POST is completed, you will need to restart the server.



Use the Left/Right arrow keys to move between the menu screens, then press Enter to view that menu tab.

Use the Up/Down arrow keys to move between the menu options, then press Enter to execute that option.

Some options lead to pop-up dialog boxes that prompt you to verify that you wish to execute that option. Other options lead to dialog boxes that prompt you for information.

Some options (marked with a ►) lead to submenus that enable you to change the values for the option. Use the Up/Down/Left/Right arrow keys to scroll through the items in the submenu

Navigating the BIOS setup menu screen

Use the keys listed on the bottom right of the Setup screen to work your way through the various BIOS menu and submenu screens. The following table lists these keys and their respective functions.

Key	Function
Left / Right arrow keys	Move the cursor to the menu screen you want. The currently selected screen will be highlighted and the items it contain will be shown.
Up / Down arrow keys	Move the cursor to the item you want. The currently selected field will be highlighted.
Enter	• To open the page for the currently selected menu/submenu • To apply a field value.
+ / - keys	To select a value for the currently selected field (only if it is user-configurable). Press these keys repeatedly to display all possible entries. A parameter that is enclosed in square brackets [ ] is user-configurable. Black font parameters are not user-configurable for one of the following reasons: • The field value is auto-configured or auto-detected.· • The field value is informational only. • The field is password-protected.
F1	To bring up the General Help window. The General Help window describes other setup navigation keys that are not displayed on the legend bar.
F2	Restore the saved User Default settings.
F3	Load optimized default system values.
F10	Save and exit the BIOS setup screen.
Esc	If you press this key: • On one of the primary menu screens, the Exit menu displays. • On a submenu screen, the previous screen displays. • When you are making selections from a pop-up menu, closes the pop-up without making a selection.

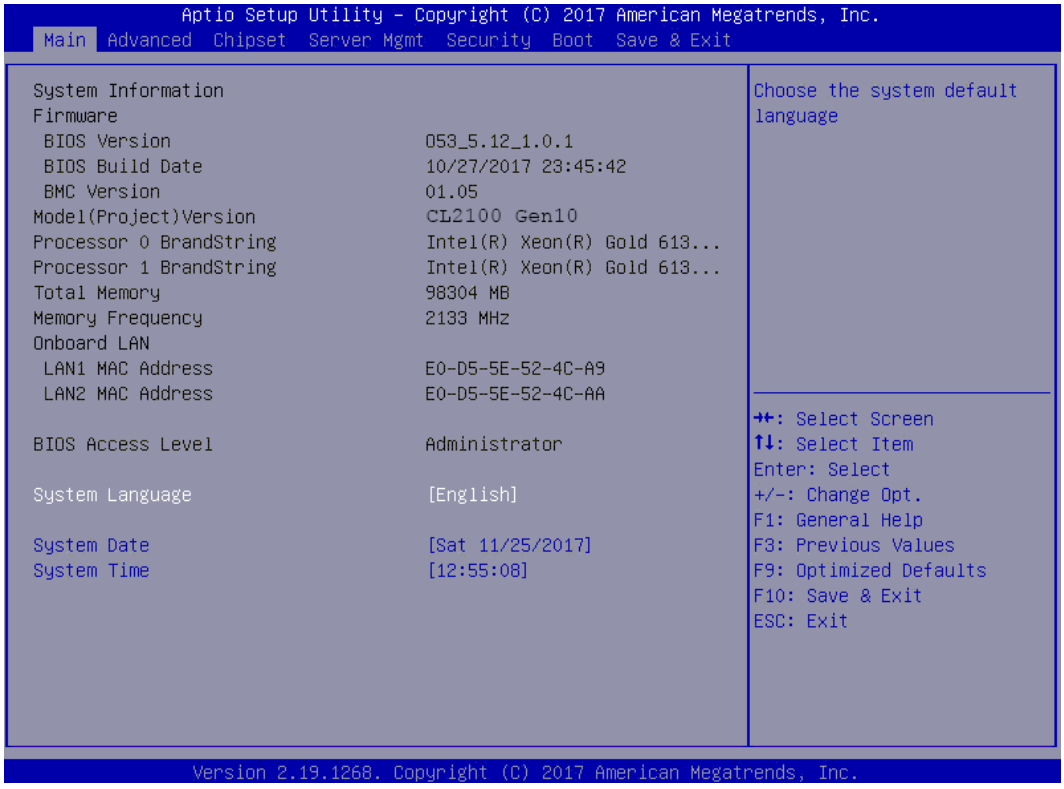
Remote Flash BIOS

To remotely flash BIOS on CL2100 Gen10 Server, visit the Hewlett Packard Enterprise Support Center for complete step-by-step instructions. The document can be found in the RemoteUpdate folder of the BIOS firmware package.

BIOS setup menu screen

NOTE:

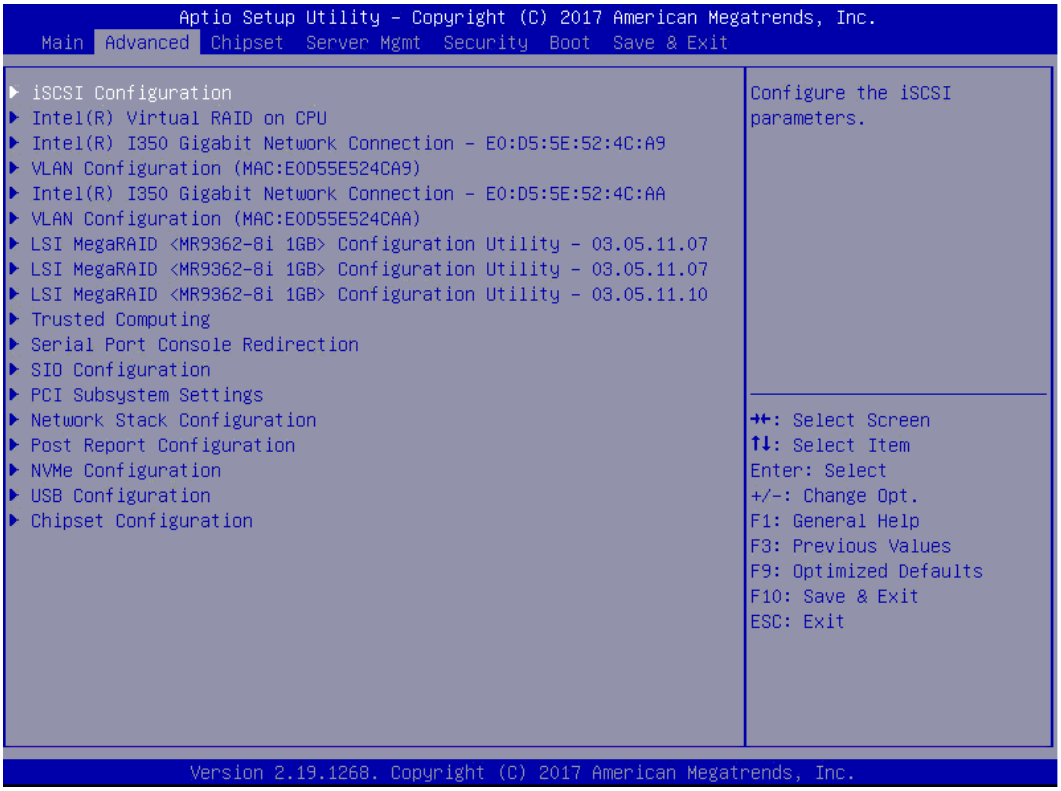
- The screenshots used in this section are for illustration only. The values displayed may not be the same as those in your server.
- In the descriptive tables following each of the menu screen illustrations, settings in **boldface** are the default and suggested settings.
- The Human Interface Infrastructure (HII) submenu is only supported under UEFI mode if the OPROM for the add-on card supporting HII submenu



Parameter	Description
System Information	
Firmware	
BIOS Version	Current system BIOS version.
BIOS Build Date	Date when the system BIOS was built.
BMC Version	Current BMC version.
Model (Project) Version	Official model name of the server.
Processor 0 BrandString	Processor model installed in Processor 0 slot.
Processor 1 BrandString	Processor model installed in Processor 0 slot.
Total Memory	Size of system memory detected during boot-up.
Memory Frequency	Frequency of system memory detected during boot-up.
Onboard LAN	
LAN1 MAC Address	Local network address information for LAN1 port.
LAN2 MAC Address	Local network address information for LAN2 port.

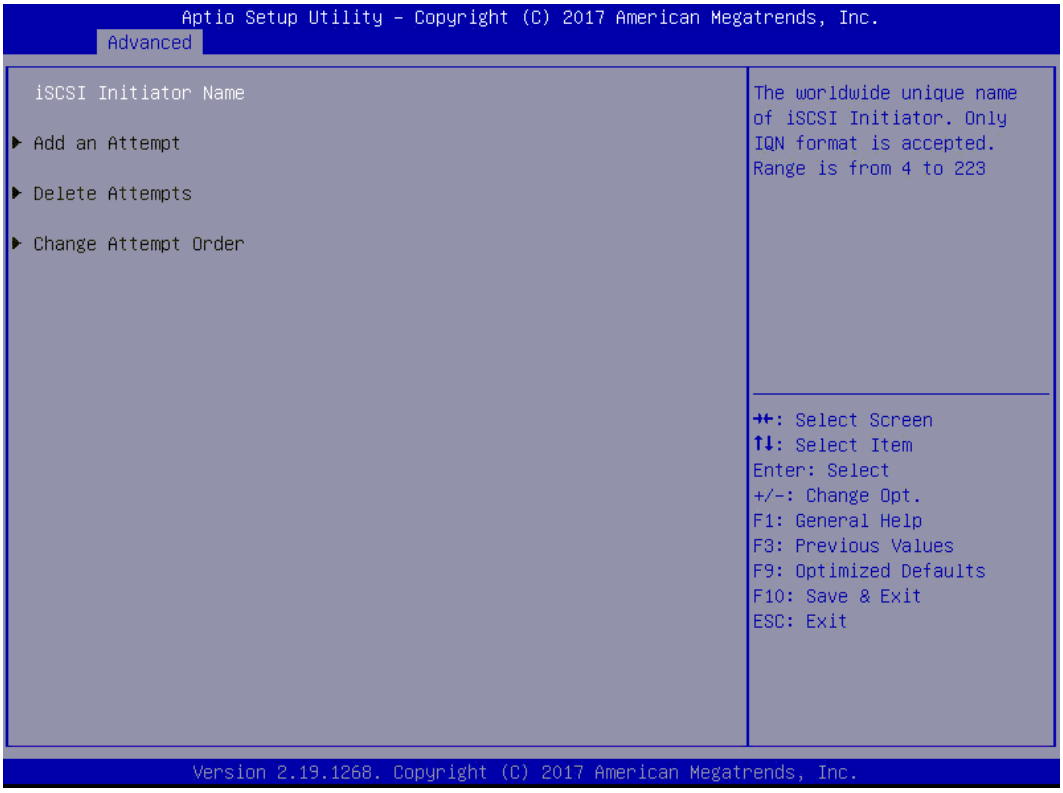
Parameter	Description
BIOS Access Level	The access level for BIOS.
System Language	Sets the system language.
System Date	Sets the system date.
System Time	Sets the system time.

Advanced menu



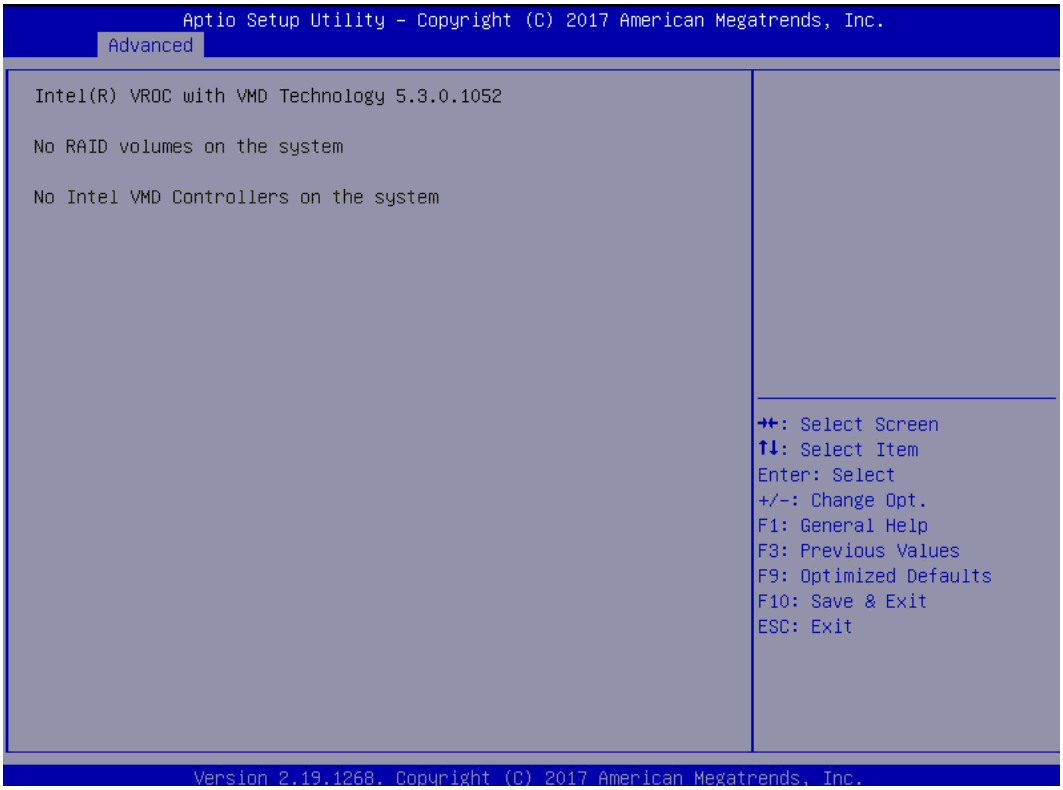
Parameter	Description
iSCSI Configuration	Configure the iSCSI parameters.
Intel® Virtual RAID on CPU	Manage Intel® Virtual RAID on the CPU
Intel® I350 Gigabit Network Connection	LAN Port 1 Configuration.
VLAN Configuration	VLAN Configuration
Intel® I350 Gigabit Network Connection	LAN Port 2 Configuration.
LSI MegaRAID Configuration Utility	RAID Configuration
Trusted Computing	Trusted Computing Setting.
Serial Port Console Redirection	Serial Port Console Redirection.
SIO Configuration	SIO Configuration parameters.
PCI Subsystem Setting	PCI Subsystem Setting.
Network Stack Configuration	Network Stack Settings.
Post Report Configuration	POST Report Setting.
NVMe Configuration	NVMe Device Options Setting.
USB Configuration	USB Device Information.
Chipset Configuration	Chipset Configuration parameters.

iSCSI Configuration menu



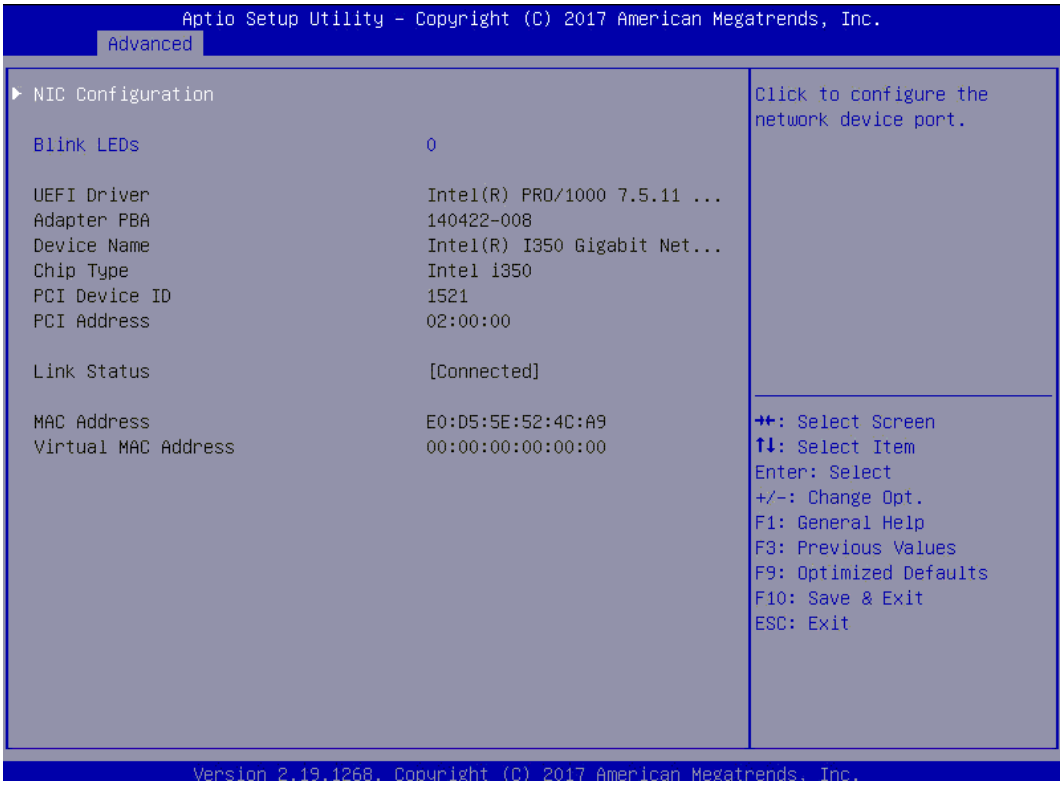
Parameter	Description
iSCSI Initiator Name	The worldwide unique name of iSCSI Initiator. Only IQN format is accepted. Range is from 4 to 223.

Intel® Virtual RAID on CPU (Optional)



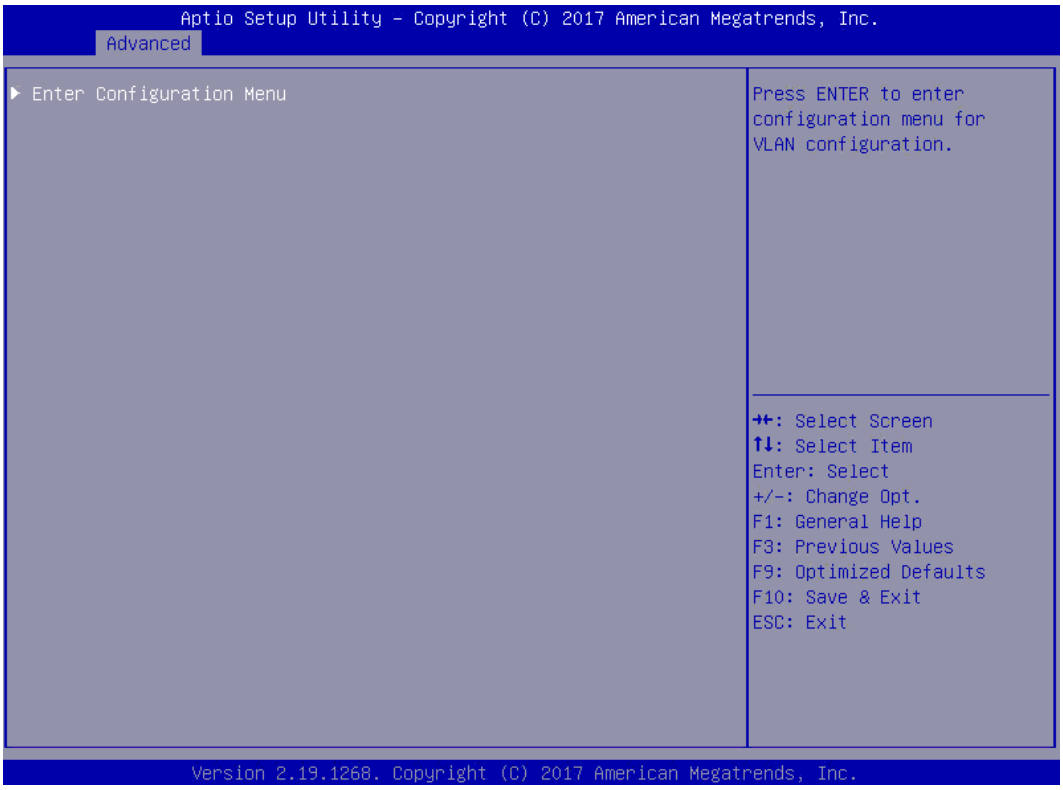
Parameter	Description
All Intel VMD Controllers	Select to see more information about the Intel VMD controllers.

Intel® I350 Gigabit Network Connection



Parameter	Description
NIC Configuration	Network Interface Controller configuration.
Blink LEDs	Identifies the physical network port by Flashing the associated LED. Press the numeric keys to adjust desired values.

VLAN Configuration

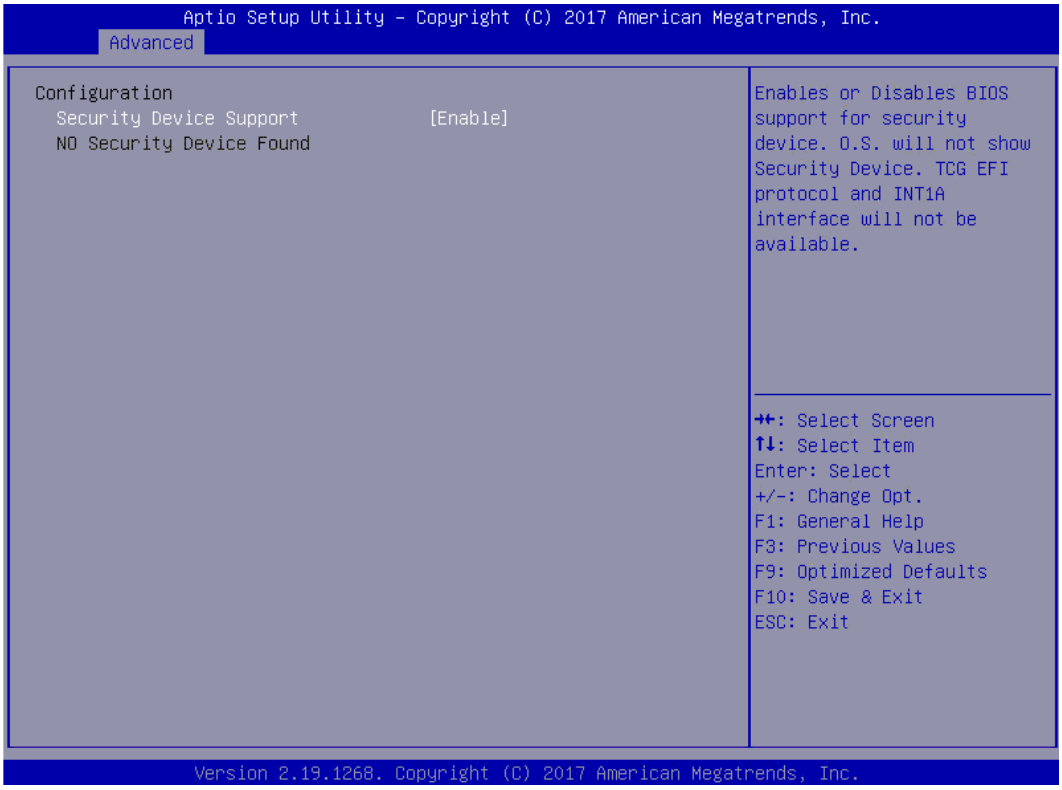


Parameter	Description
Enter Configuration Menu	VLAN Configuration

LSI MegaRAID Configuration Utility

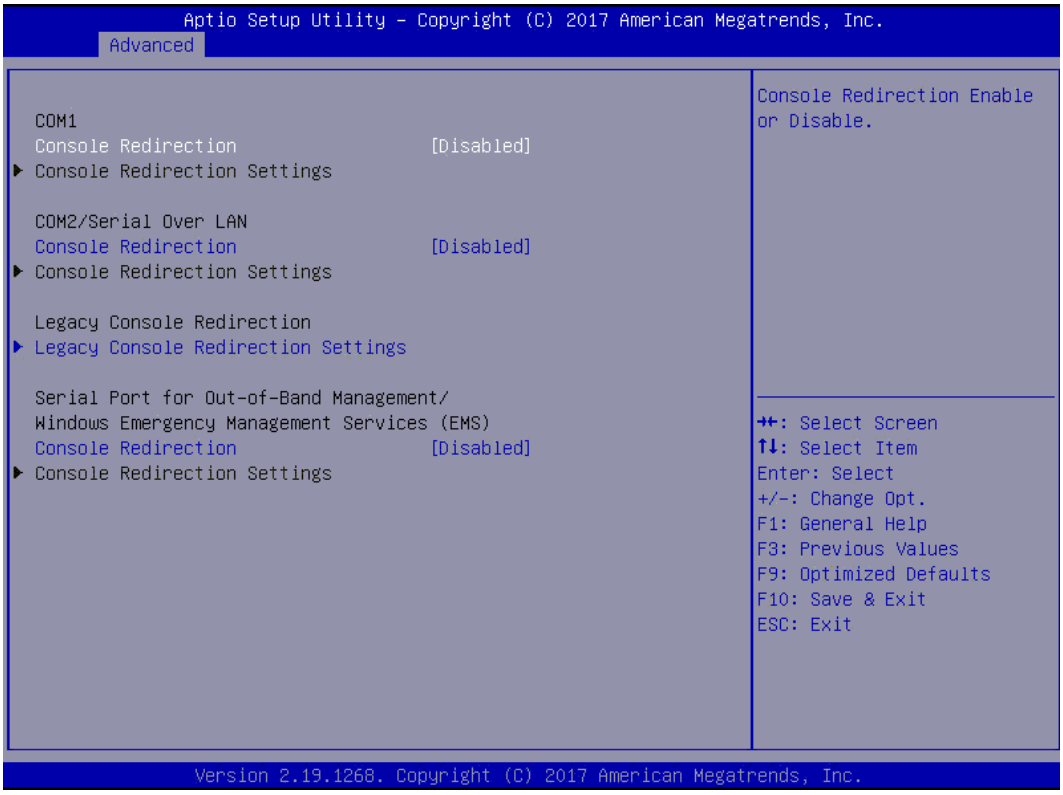
Parameter	Description
Configuration Management	Displays configuration options.
Controller Management	Controller configuration.
Virtual Drive Management	Virtual drive configuration.
Drive Management	Drive configuration.
Hardware Components	Basic hardware status and configuration.

Trusted Computing



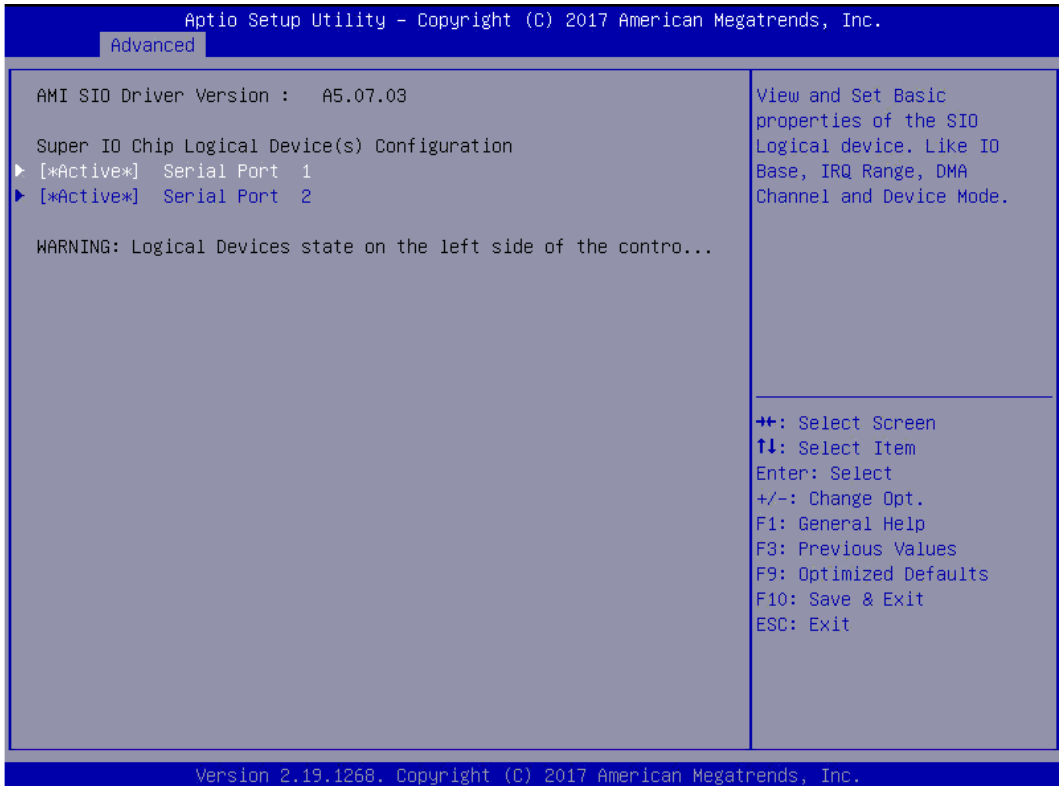
Parameter	Description	Value
Security Device Support	Enable/Disable Security Device. NOTE: Your computer will reboot during restart in order to change State of the Device	**Enable** Disable

Serial Port Console Redirection menu



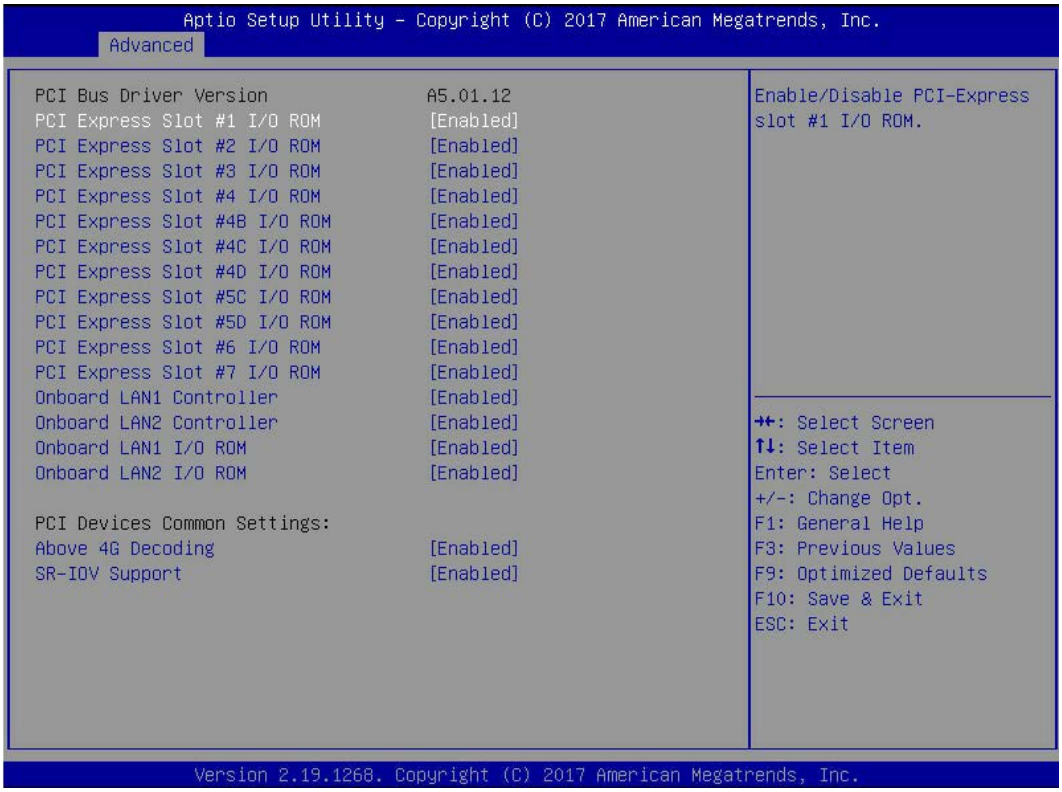
Parameter	Description	Value
Console Redirection	Enable/Disable Console redirection function	Enabled **Disabled**
Console Redirection Settings	This setting specifies the host computer and the remote computer (which the user is using) will exchange data. Both computers should have the same or compatible settings.	
Legacy Console Redirection Settings		

SIO Configuration menu



Parameter	Description
Serial Port 1/2	View and set basic properties of the SIO logical device, such as IO Base, IRQ Range, DMA Channel, and Device Mode.

PCI Subsystem Settings menu



Parameter	Description	Value
PCI Express Slot #1/2/3/4/4B/4C/4D/5C/5D/6/7	Enable/Disable PCI-Express slot I/O ROM	**Enabled** Disabled
Onboard LAN1 Controller	Enable/Disable the onboard LAN1 devices	**Enabled** Disabled
Onboard LAN2 Controller	Enable/Disable the onboard LAN2 devices	**Enabled** Disabled
Onboard LAN1 I/O ROM	Enable/Disable the onboard LAN1 devices, and initializes device expansion ROM.	**Enabled** Disabled
Onboard LAN2 I/O ROM	Enable/Disable the onboard LAN2 devices, and initializes device expansion ROM.	**Enabled** Disabled
PCI Devices Common Settings		
Above 4G Decoding	Enable/Disable memory mapped I/O to 4GB or greater address space (Above 4G Decoding)	**Enabled** Disabled
SR-IOV Support	If system has SR-IOV capable PCIe Devices, this option Enables or Disables Single Root IO Virtualization Support.	**Enabled** Disabled

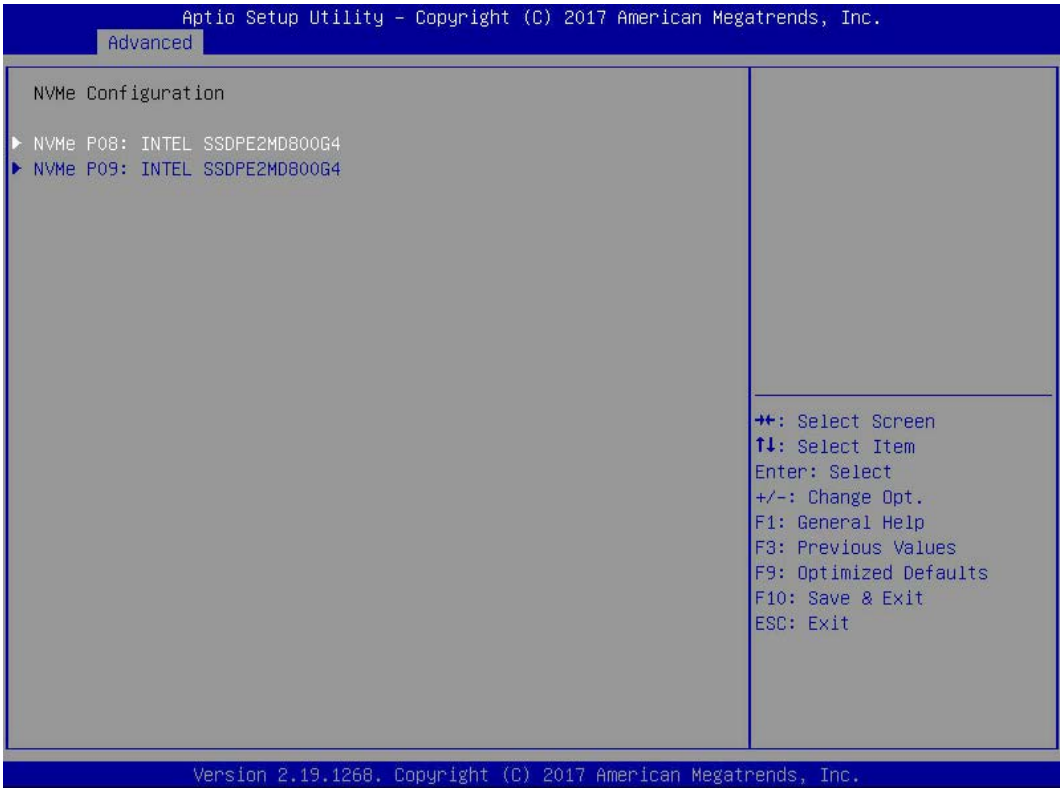
Network Stack Configuration menu

Parameter	Description	Value
Network Stack	Enable/Disable UEFI Network Stack function.	**Enabled** Disabled
Ipv4 PXE Support	Enable Ipv4 PXE Boot Support. If disabled IPV4 PXE boot option will not be created.	**Enabled** Disabled
Ipv4 HTTP Support	Enable/Disable Ipv4 HTTP feature.	Enabled **Disabled**
Ipv6 PXE Support	Enable Ipv6 PXE Boot Support. If disabled IPV6 PXE boot option will not be created.	Enabled **Disabled**
Ipv6 HTTP Support	Enable/Disable Ipv6 HTTP feature.	Enabled **Disabled**
PXE boot wait time	Wait time to press ESC key to abort the PXE boot.	0 - 5
Media detect count	Number of times presence of media will be checked.	1 - 50

Post Report Configuration menu

Parameter	Description	Value
Post Error Message	Enable/Disable POST error message support.	**Enabled** Disabled

NVMe Configuration menu

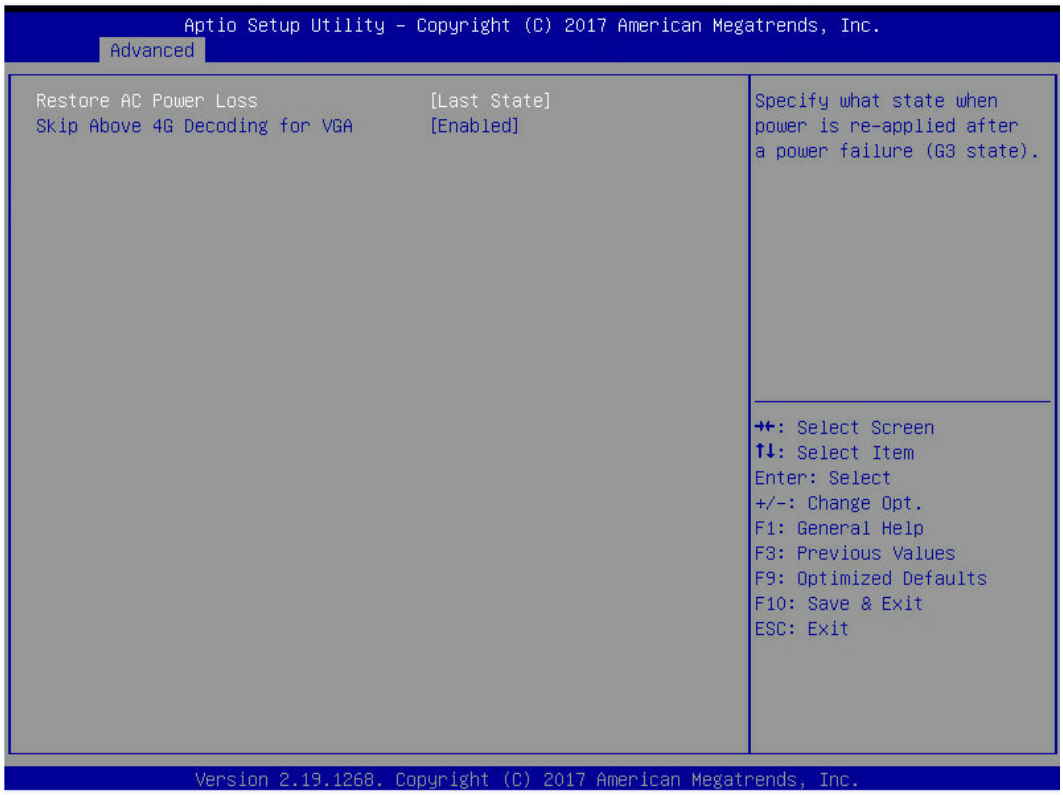


Parameter	Description
NVMe configuration	Shows information on NVMe devices installed

USB Configuration

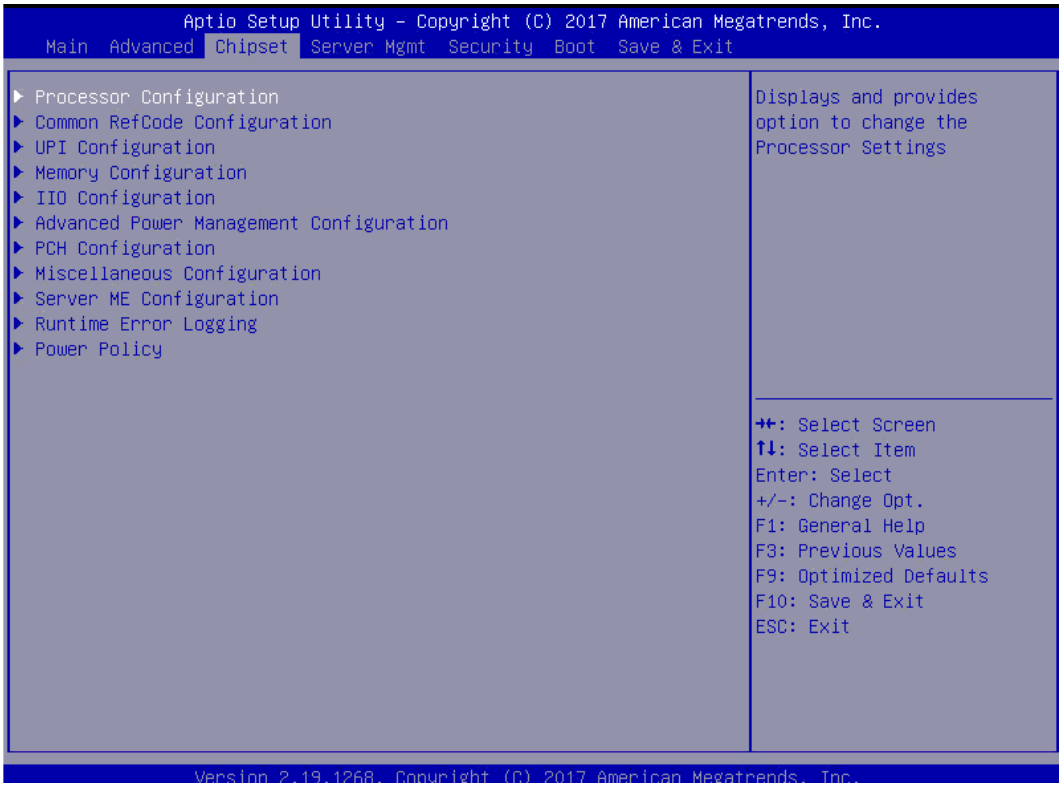
Parameter	Description	Value
USB Configuration	Shows information on USB devices installed	
XHCI Hand-off	Enable/Disable XHCI Hand-off support. This is a workaround for OS without XHCI hand-off support. The XHCI ownership change should be claimed by the XHCI driver.	**Enabled** Disabled
USB Mass Storage Driver Support	Enable/Disable USB Mass Storage Driver support.	**Enabled** Disabled
Port 60/64 Emulation	Enable/Disable the I/O port 60h/64h emulation support. This should be enabled for the complete USB keyboard legacy support for non-USB aware OS.	**Enabled** Disabled

Chipset Configuration



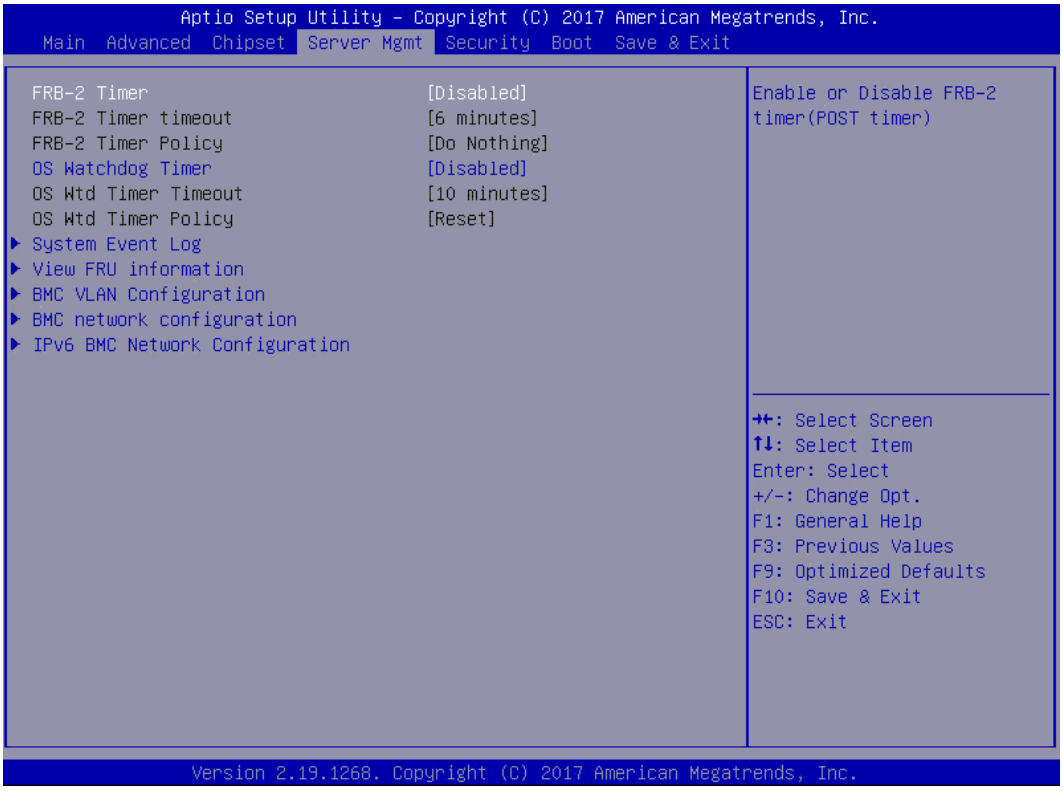
Parameter	Description	Value
Restore on AC Power Loss	Defines the power state to resume to after a system shutdown that is due to an interruption in AC power. Options: LAST STATE - The system will return to the active power state prior to shutdown. STAY OFF - The system will remain off after the power shutdown. POWER ON - The system will power on after the power shutdown.	Last State Stay Off Power On **Default Setting depends on the BMC setting**
Skip Above 4G Decoding for VGA	Enable/Disable 64bit capable devices to be decoded in Skip Above 4G Address VGA Space.	**Enabled** Disabled

Chipset menu



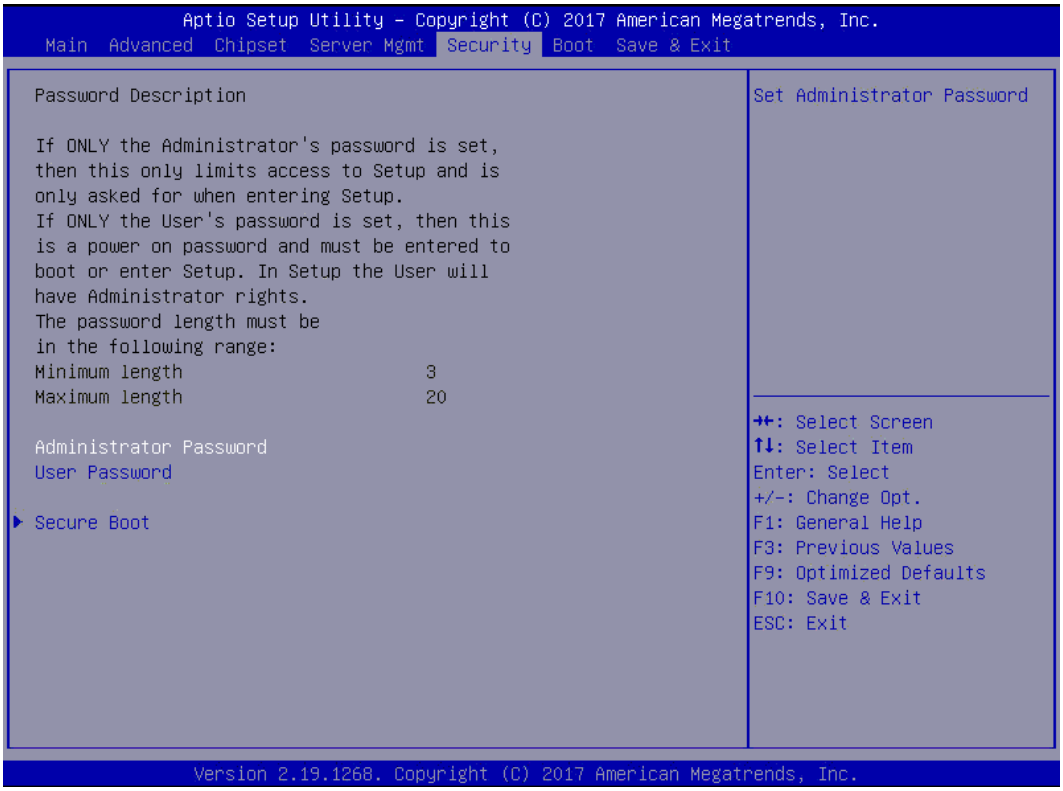
Parameter	Description
Processor Configuration	Configure the processor.
Common RefCode Configuration	Configure the Common RefCode.
UPI Configuration	Configure the UPI.
Memory Configuration	Configure the memory.
IIO Configuration	Configure the IIO
Advanced Power Management Configuration	Configure the Advanced Power Management settings.
PCH Configuration	Configure the PCH.
Miscellaneous Configuration	Configure miscellaneous settings.
Server ME Configuration	Configure the server ME settings.
Runtime Error Logging	Configure error log settings.
Power Policy	Configure general power policy settings.

Server Management menu



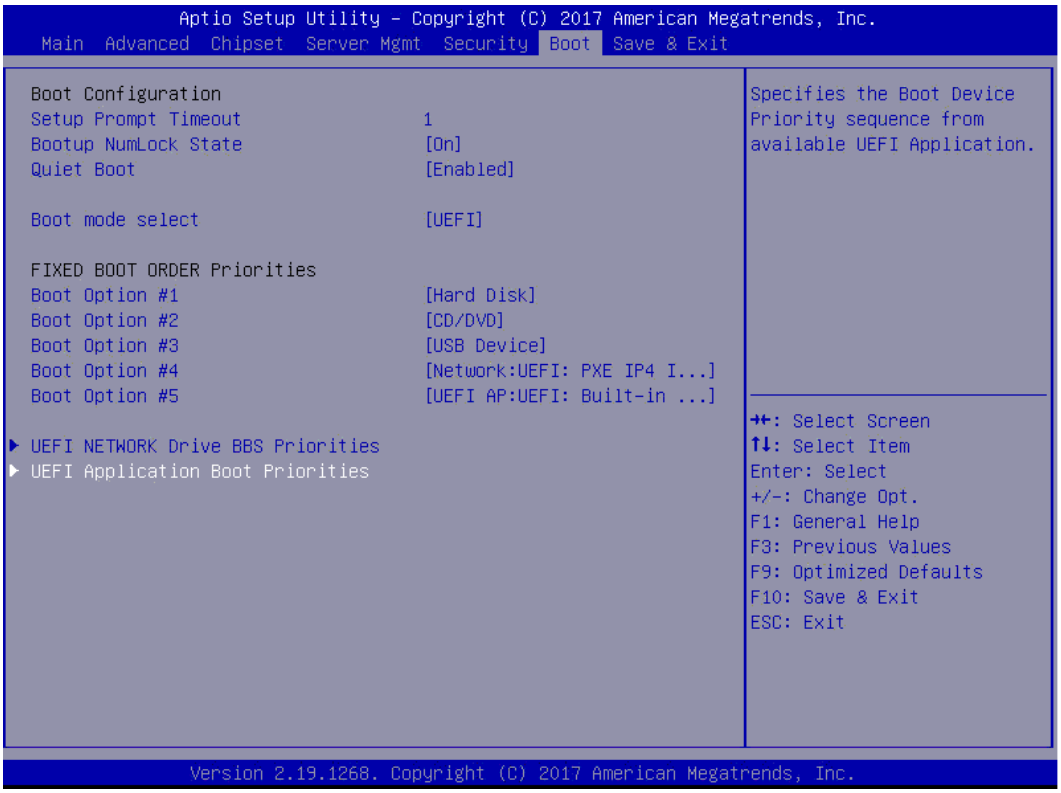
Parameter	Description	Value
FRB-2 Timer	Enable/Disable FRB-2 timer (POST timer).	Enabled **Disabled**
FRB-2 Timer timeout	Configure the FRB-2 timer	3 minutes 4 minutes 5 minutes **6 minutes**
FRB-2 Timer Policy	Configure the FRB-2 timer policy	**Do Nothing** Reset Power Down
OS Watchdog Timer	Enable/Disable OS watchdog timer.	Enabled **Disabled**
OS Wtd Timer Timeout	Configure the OS watchdog timer	5 minutes **10 minutes** 15 minutes 20 minutes
OS Wtd Timer Policy	Configure the FRB-2 Timer policy	Do Nothing **Reset** Power Down
System Event Log	Configure system event log settings	
View FRU Information	View information for installed FRU parts.	
BMC VLAN configuration	Configure BMC VLAN parameters.	
BMC network configuration	Configure BMC network settings.	
IPv6 BMC Network Configuration	Configure IPv6 BMC Network settings.	

Security menu



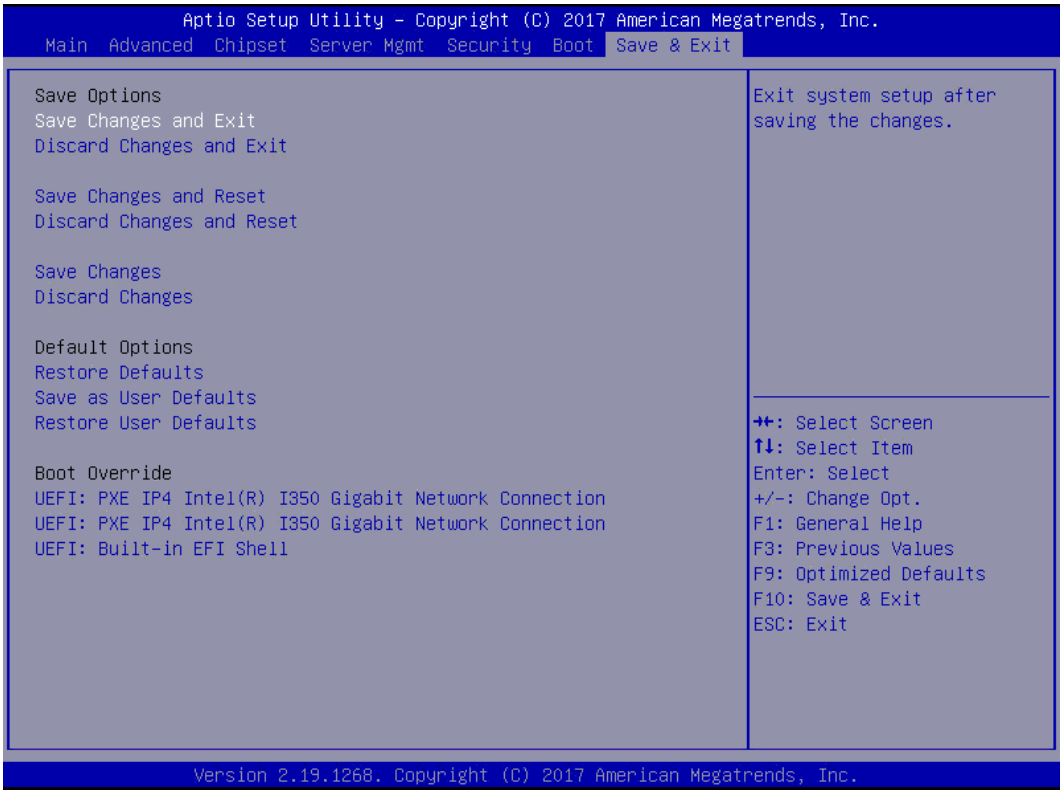
Parameter	Description
Administrator Password	Set the administrator’s password.
User Password	Set the user’s password.
Secure Boot	Select to configure the secure boot function.

Boot menu



Parameter	Description	Value
Boot Configuration		
Setup Prompt Timeout	Set the number of seconds to wait for setup activation key.	1 ~ 65535
Bootup NumLock State	Select to enable or disable the Num-Lock key during boot.	**On** Off
Quiet Boot	When enabled, BIOS will show a full screen logo when booting; if disabled, BIOS will show the diagnostic POST screen when booting.	**Enabled** Disabled
Boot mode select	Selects the boot mode	Legacy **UEFI**
Fixed Boot Order Priorities Boot Option #1 Boot Option #2 Boot Option #3 Boot Option #4 Boot Option #5	Displays the device assigned to the specified boot sequence. The Setup Utility attempts to boot the operating system in this order. By default, the server searches for boot devices in the following order: Storage Device (HDD/SSD/NVMe) Optical Drive (CD/DVD) USB Device Network Boot (LAN) UEFI AP	
UEFI Network Drive BBS Priorities	Configure UEFI network drive boot priorities	
UEFI Application Boot Priorities	Configure UEFI application boot priorities	

Save & Exit menu



Parameter	Description
Save Options	
Save Changes and Exit	Save changes made and exit system setup. Keyboard shortcut: F4.
Discard Changes and Exit	Discard changes made and exit system setup. Keyboard shortcut: Esc.
Save Changes and Reset	Save changes made and restart the system.
Discard Changes and Exit	Discard changes made restart the system.
Save Changes	Save changes made.
Discard Changes	Discard changes made.
Default Options	
Restore Defaults	Load the factory default settings for all setup parameters. Keyboard shortcut: F3.
Save as User Defaults	Save the current configuration settings as user default values.
Restore User Defaults	Load the user default settings for all setup parameters.

Spare parts catalog

Customer self repair

Hewlett Packard Enterprise products are designed with many Customer Self Repair (CSR) parts to minimize repair time and allow for greater flexibility in performing defective parts replacement. If during the diagnosis period Hewlett Packard Enterprise (or Hewlett Packard Enterprise service providers or service partners) identifies that the repair can be accomplished by the use of a CSR part, Hewlett Packard Enterprise will ship that part directly to you for replacement. There are two categories of CSR parts:

- **Mandatory**—Parts for which customer self repair is mandatory. If you request Hewlett Packard Enterprise to replace these parts, you will be charged for the travel and labor costs of this service.
- **Optional**—Parts for which customer self repair is optional. These parts are also designed for customer self repair. If, however, you require that Hewlett Packard Enterprise replace them for you, there may or may not be additional charges, depending on the type of warranty service designated for your product.

NOTE: Some Hewlett Packard Enterprise parts are not designed for customer self repair. In order to satisfy the customer warranty, Hewlett Packard Enterprise requires that an authorized service provider replace the part. These parts are identified as "No" in the Illustrated Parts Catalog.

Based on availability and where geography permits, CSR parts will be shipped for next business day delivery. Same day or four-hour delivery may be offered at an additional charge where geography permits. If assistance is required, you can call the Hewlett Packard Enterprise Support Center and a technician will help you over the telephone. Hewlett Packard Enterprise specifies in the materials shipped with a replacement CSR part whether a defective part must be returned to Hewlett Packard Enterprise. In cases where it is required to return the defective part to Hewlett Packard Enterprise, you must ship the defective part back to Hewlett Packard Enterprise within a defined period of time, normally five (5) business days. The defective part must be returned with the associated documentation in the provided shipping material. Failure to return the defective part may result in Hewlett Packard Enterprise billing you for the replacement. With a customer self repair, Hewlett Packard Enterprise will pay all shipping and part return costs and determine the courier/carrier to be used.

For more information about the Hewlett Packard Enterprise CSR program, contact your local service provider. For the North American program, go to the Hewlett Packard Enterprise CSR website (**http://www.hpe.com/support/selfrepair**).

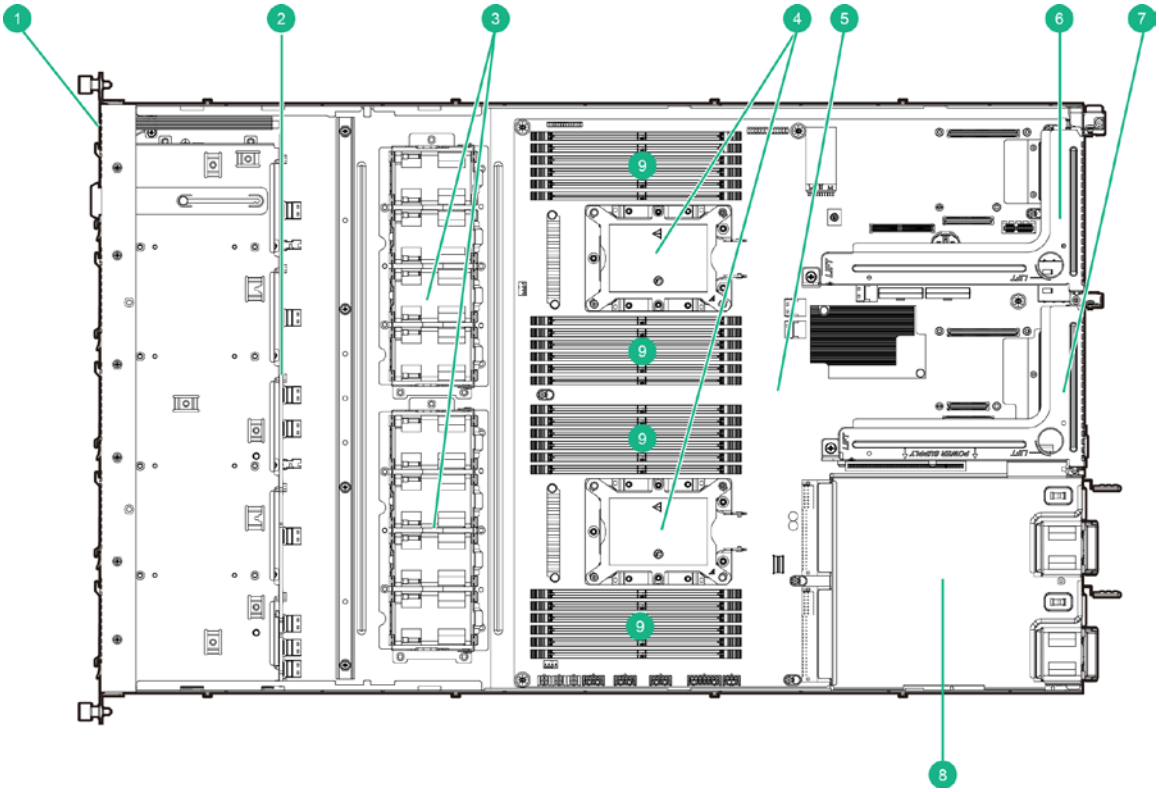
Parts only warranty service

Your Hewlett Packard Enterprise Limited Warranty may include a parts only warranty service. Under the terms of parts only warranty service, Hewlett Packard Enterprise will provide replacement parts free of charge.

For parts only warranty service, CSR part replacement is mandatory. If you request Hewlett Packard Enterprise to replace these parts, you will be charged for the travel and labor costs of this service.

System components

Hewlett Packard Enterprise continually improves and changes product parts. For complete and current supported parts information, see the Hewlett Packard Enterprise PartSurfer website (**http://www.hpe.com/info/partssurfer**).



Item	Description	Spare part number	Customer self repair
1	Front Panel and USB	P02136-001	Mandatory[1] (on page 83)
2	Front drive cage backplane	P02137-001	Mandatory[1] (on page 82)
3	Fan	P02139-001	Mandatory[1] (on page 78)
4	**Processors***	--	--
	a) 1.70 GHz Intel Xeon Bronze 3104, 6C, 85 W	875709-001	Mandatory[1] (on page 74)
	b) 1.70 GHz Intel Xeon Bronze 3106, 8C, 85 W	875710-001	Mandatory[1] (on page 74)
	c) 1.80 GHz Intel Xeon Silver 4108, 8C, 85 W	875712-001	Mandatory[1] (on page 74)
	d) 2.10 GHz Intel Xeon Silver 4110, 8C, 85 W	875711-001	Mandatory[1] (on page 74)
	e) 2.60 GHz Intel Xeon Silver 4112, 4C, 85 W	875714-001	Mandatory[1] (on page 74)
	f) 2.20 GHz Intel Xeon Silver 4114, 10C, 85 W	875713-001	Mandatory[1] (on page 74)
	g) 2.10 GHz Intel Xeon Silver 4116, 12C, 85 W	875716-001	Mandatory[1] (on page 74)
	h) 2.40 GHz Intel Xeon Gold 5115, 10C, 85 W	875715-001	Mandatory[1] (on page 74)
	i) 2.30 GHz Intel Xeon Gold 5118, 12C, 105 W	875717-001	Mandatory[1] (on page 74)
	j) 2.20 GHz Intel Xeon Gold 5120, 14C, 105 W	875718-001	Mandatory[1] (on page 74)
	k) 2.10 GHz Intel Xeon Gold 6130, 16C, 125 W	874736-001	Mandatory[1] (on page 74)

Item	Description	Spare part number	Customer self repair
	l) 2.00 GHz Intel Xeon Gold 6138, 20C, 125 W	874735-001	Mandatory[1] (on page 74)
	m) 2.30 GHz Intel Xeon Gold 6140, 18C, 140 W	874734-001	Mandatory[1] (on page 74)
	n) 2.10 GHz Intel Xeon Gold 6152, 22C, 140 W	874730-001	Mandatory[1] (on page 74)
	o) 3.60 GHz Intel Xeon Gold 5122, 4C, 105 W	875719-001	Mandatory[1] (on page 74)
	p) 3.40 GHz Intel Xeon Gold 6128, 6C, 115 W	875721-001	Mandatory[1] (on page 74)
	q) 3.20 GHz Intel Xeon Gold 6134, 8C, 130 W	875723-001	Mandatory[1] (on page 74)
	r) 3.50 GHz Intel Xeon Gold 6144, 8C, 150 W	875725-001	Mandatory[1] (on page 74)
	s) 2.60 GHz Intel Xeon Gold 6126, 12C, 125 W	875720-001	Mandatory[1] (on page 74)
	t) 3.00 GHz Intel Xeon Gold 6136, 12C, 150 W	875724-001	Mandatory[1] (on page 74)
	u) 2.60 GHz Intel Xeon Gold 6142, 16C, 150 W	874733-001	Mandatory[1] (on page 74)
	v) 2.40 GHz Intel Xeon Gold 6148, 20C, 150 W	874732-001	Mandatory[1] (on page 74)
	a) 1.70 GHz Intel Xeon Bronze 3104, 6C, 85 W	875709-001	Mandatory[1] (on page 74)
	b) 1.70 GHz Intel Xeon Bronze 3106, 8C, 85 W	875710-001	Mandatory[1] (on page 74)
	c) 1.80 GHz Intel Xeon Silver 4108, 8C, 85 W	875712-001	Mandatory[1] (on page 74)
	d) 2.10 GHz Intel Xeon Silver 4110, 8C, 85 W	875711-001	Mandatory[1] (on page 74)
	e) 2.60 GHz Intel Xeon Silver 4112, 4C, 85 W	875714-001	Mandatory[1] (on page 74)
	f) 2.20 GHz Intel Xeon Silver 4114, 10C, 85 W	875713-001	Mandatory[1] (on page 74)
	g) 2.10 GHz Intel Xeon Silver 4116, 12C, 85 W	875716-001	Mandatory[1] (on page 74)
	h) 2.40 GHz Intel Xeon Gold 5115, 10C, 85 W	875715-001	Mandatory[1] (on page 74)
	i) 2.30 GHz Intel Xeon Gold 5118, 12C, 105 W	875717-001	Mandatory[1] (on page 74)
	j) 2.20 GHz Intel Xeon Gold 5120, 14C, 105 W	875718-001	Mandatory[1] (on page 74)
	k) 2.10 GHz Intel Xeon Gold 6130, 16C, 125 W	874736-001	Mandatory[1] (on page 74)
	l) 2.00 GHz Intel Xeon Gold 6138, 20C, 125 W	874735-001	Mandatory[1] (on page 74)
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	n) 2.10 GHz Intel Xeon Gold 6152, 22C, 140 W	874730-001	Mandatory[1] (on page 74)
	o) 3.60 GHz Intel Xeon Gold 5122, 4C, 105 W	875719-001	Mandatory[1] (on page 74)
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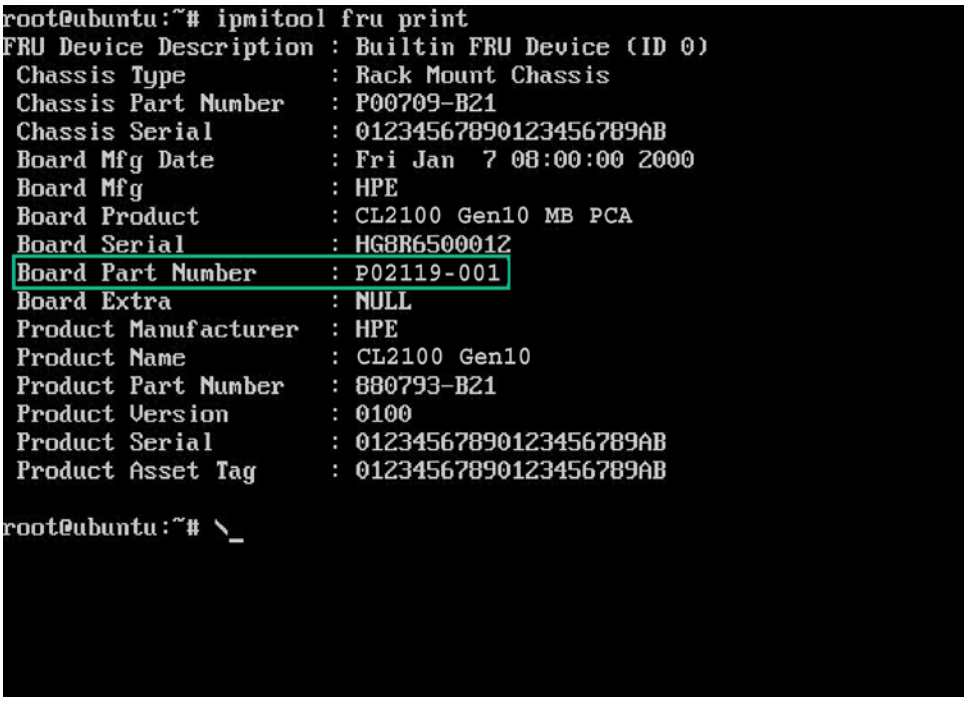
	r) 3.50 GHz Intel Xeon Gold 6144, 8C, 150 W	875725-001	Mandatory[1] (on page 74)
	s) 2.60 GHz Intel Xeon Gold 6126, 12C, 125 W	875720-001	Mandatory[1] (on page 74)
	t) 3.00 GHz Intel Xeon Gold 6136, 12C, 150 W	875724-001	Mandatory[1] (on page 74)
	u) 2.60 GHz Intel Xeon Gold 6142, 16C, 150 W	874733-001	Mandatory[1] (on page 74)
	v) 2.40 GHz Intel Xeon Gold 6148, 20C, 150 W	874732-001	Mandatory[1] (on page 74)
5	System Board	P02119-001	Mandatory[1] (on page 80)
6	Riser #2	P02138-001	Mandatory[1] (on page 68)
7	Riser #3	P02144-001	Mandatory[1] (on page 68)
8	800W Hot Plug Power Supply	P02143-001	Mandatory[1] (on page 66)
9	**DIMMs**	--	--
	a) 16GB PC4-2666V-R 2Gx4	872970-001	Mandatory[1] (on page 73)
	b) 32GB PC4-2666V-R,2Gx4	882448-001	Mandatory[1] (on page 73)
	c) 64GB PC4-2666V-L,2Gx4	882449-001	Mandatory[1] (on page 73)

Item	Description	Spare part number	Customer self repair
	Air Baffle Processor 1*	P02141-001	Mandatory[1] (on page 67)
	Air Baffle Processor 0*	P02140-001	Mandatory[1] (on page 67)
	Heatsink*	P02142-001	Mandatory[1] (on page 74)
	Rail Kit*	P02128-001	Mandatory[1] (on page 86)
	SAS 9400-8i HBA Card*	P02145-001	Mandatory[1] (on page 69)
	SAS 9400-16i HBA Card*	P02146-001	Mandatory[1] (on page 69)
	9460-8i RAID Controller*	P02181-001	Mandatory[1] (on page 69)
	9460-16i RAID Controller*	P02182-001	Mandatory[1] (on page 69)
	RAID Controller Super Capacitor (CVPM05)	P03112-001	Mandatory[1] (on page 100)
	System Battery	319603-001	Mandatory[1] (on page 79)
	Cables**	--	--
	a) Power and Signal Cable Kit**	P02132-001	--
	• Signal, MB to BP, CL2xxx Gen10		Mandatory[1] (on page 104)
	• PWR, BP, CL2100 Gen10		Mandatory[1] (on page 103)
	b) Slimline Cable Kit**	P02147-001	--
	• Slimline 500mm, CL2100 Gen10		Mandatory[1] (on page 104 to 105)
	• Slimline 400mm, CL2xxx Gen10		Mandatory[1] (on page 104 to 105)
	• Slimline 650mm, CL2100 Gen10		Mandatory[1] (on page 104 to 105)
	Miscellaneous Parts*	--	--
	a) Hard Drive Trays	P02134-001	Mandatory[1] (on page 64)
	• 2.5 blue HDD Tray, CL2xxx Gen10		Mandatory[1] (on page 64)
	• 2.5 orange HDD Tray, CL2xxx Gen10		Mandatory[1] (on page 64)
	• SCR, HDD Tray		Mandatory[1] (on page 64)
	• 3.5 HDD Tray, CL2xxx Gen10		N/A
	• SCR, System, CL2xxx Gen10		Mandatory[1] (on page 80)
	Enablement Parts*	--	--
	a) SAS Enablement FIO Kit	--	Mandatory[1] (on page 97)
	• Cable: SAS HD/Slimline CL2100	P02174-001	Mandatory[1] (on page 97)
	b) NVMe Enablement FIO Kit	--	Mandatory[1] (on page 101)
	• PCA NVMe-Passthru to BP w/cable	P02175-001	Mandatory[1] (on page 101)
	c) M.2 Enablement	P02966-001	Mandatory[1] (on page 98)
	d) Trusted Platform Module 2.0	P02967-001	Mandatory[1] (on page 95)

* Not shown
** See Cabling section
[1]Mandatory—Parts for which customer self repair is mandatory. If you request Hewlett Packard Enterprise to replace these parts, you will be charged for the travel and labor costs of this service.
[2]Optional—Parts for which customer self repair is optional. These parts are also designed for customer self repair. If, however, you require that Hewlett Packard Enterprise replace them for you, there may or may not be additional charges, depending on the type of warranty service designated for your product.
[3]No—Some Hewlett Packard Enterprise parts are not designed for customer self repair. In order to satisfy the customer warranty, Hewlett Packard Enterprise requires that an authorized service provider replace the part. These parts are identified as "No" in the Illustrated Parts Catalog.

[4]To get the System Board spare number:

- Locally:
  Command: ipmitool fru print
- Remotely:
  Command: ipmitool –I lanplus -H 10.32.x.x –U admin –P admin fru print 0



Spare Part Number Information

CL2100 Gen10 Vendor P/N	HPE P/N	HPE SPS P/N
CFP1000 (Original) / 5CFP1000NR-HP-10A (New) 25CFB-550620-C2R 25CR5-520604-Y4R	P01486-001	P02136-001
6N0ASP027PR-HP-100	P01204-001	P02139-001
5CRS1015NR-00-10B (Original) / 5CRS1015NR-HP-10A (New)	P01458-001	P02144-001
5CRS1014NR-00-10B (Original) / 5CRS1014NR-HP-10A (New)	P01196-001	P02138-001
5CNVP122NR-00-10A (Original) / 5CNVP122NR-HP-10A (New)	P02198-001	P02175-001
5CBP10A2NR-00-10B (Original) / 5CBP10A2NR-HP-10A (New)	P01195-001	P02137-001
25ST1-363200-C1R 25ST1-343300-T1R	P01207-001	P02142-001
25KSG-130049-S0R	P01211-001	P02134-001
25HB2-3A0202-K0R	P01208-001	P02128-001
25HA8-R18133-G1R	P01205-001	P02140-001
25HA8-R18132-G1R	P01206-001	P02141-001
25EP0-208004-L0S	P01501-001	P02143-001

25EK3-R18N01-I0R	P01210-001	P02134-001
25EK3-H23001-I0R	P01209-001	P02134-001
25CRI-370320-Y4R 25CRI-370320-B1R	P01199-001	P02132-001
25CR5-250800-Y4R	P01198-001	P02132-001
25CFM-800821-A4R	P02423-001	P02174-001
25CFM-650820-A4R	P01460-001	P02147-001
25CFM-600820-A4R	P01243-001	P02175-001
25CFM-400820-A4R	P01201-001	P02147-001
25CFM-05K820-A4R	P01200-001	P02147-001
25CFI-650820-A4R	P02197-001	P02174-001

Removal and replacement procedures

Required tools

You need the following items for some procedures:

- T-30 Torx screwdriver
- 1/4" Flat-bladed screwdriver
- Phillips-head screwdriver

Safety considerations

Before performing service procedures, review all the safety information.

Preventing electrostatic discharge

To prevent damaging the system, be aware of the precautions you must follow when setting up 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.

Symbols on equipment

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

This symbol indicates that two people are needed to lift the system.
CAUTION: To reduce the risk of injury firmly hold the bottom of the system when required to lift and carry the system.

This symbol indicates that when mounted via a slide or rail, the system is not to be used as a shelf or a work space.

This symbol indicates that you must disconnect all AC power cords from both the system and eternal peripherals prior to installing/removing options or parts.

This symbol indicates that you must not drop any screws inside the system.

This symbol indicates that to avoid the risk of personal injury, be careful when accessing the inside of the system.

Warnings and cautions

Before installing a server, be sure that you understand the following warnings and cautions.

⚠ **WARNING:** To reduce the risk of electric shock or damage to the equipment:

- Do not disable the power cord grounding plug. The grounding plug is an important safety feature.
- Connect the power cord into a grounded (earthed) electrical outlet that is easily accessible at all times.
- Disconnect the power cord from the power supply to disconnect power to the equipment.
- Do not route the power cord where it can be walked on or pinched by items placed against it. Pay particular attention to the plug, electrical outlet, and the point where the cord extends from the rack.

△ **CAUTION:** Do not operate the rack for long periods with the access panel open or removed. Operating the rack in this manner results in improper airflow and improper cooling that can lead to thermal damage.

△ **CAUTION:** All loosened cable ties should be re-tied during a removal and replacement procedure. Failure to do so results in improper airflow that can lead to thermal damage.

Preparation procedures

To access some components and perform certain service procedures, you must perform one or more of the following procedures:

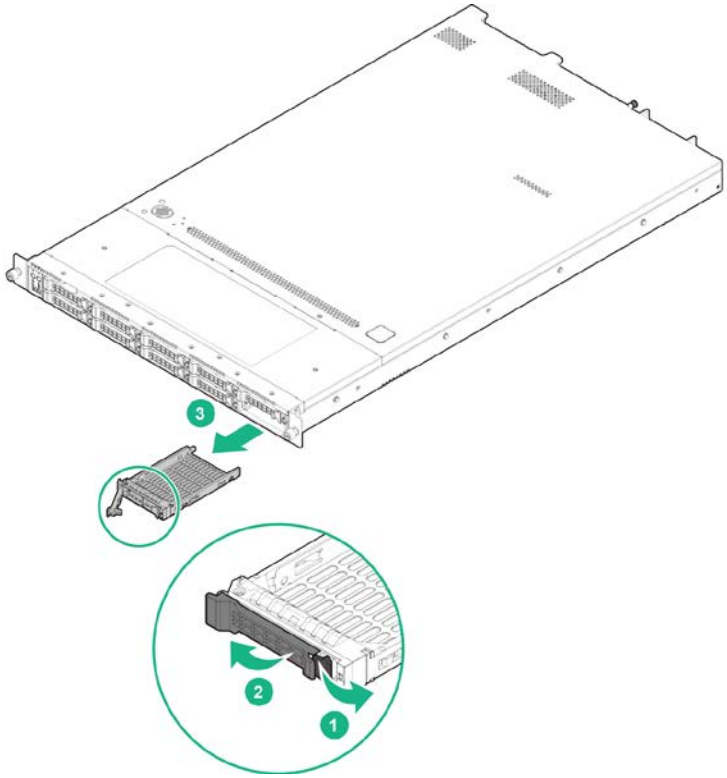
- Remove the access panel (on page 20).
- Install the access panel (on page 22).

Storage

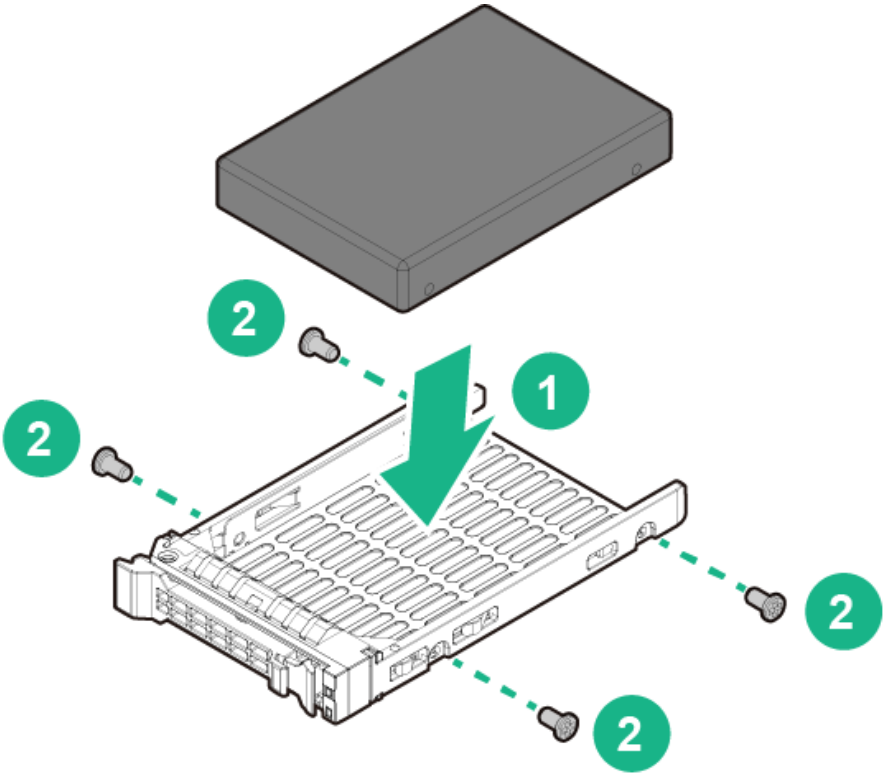
WARNING: To reduce the risk of personal injury from hot surfaces, allow the drives and the internal system components to cool before touching them.

To install the component:

1. Remove the hard drive carrier from the chassis:
   a. Press the hard drive carrier handle release button to release the handle.
   b. Pull the carrier handle to remove the hard drive carrier.



2. Place the hard drive into the hard drive carrier and secure it with four screws.



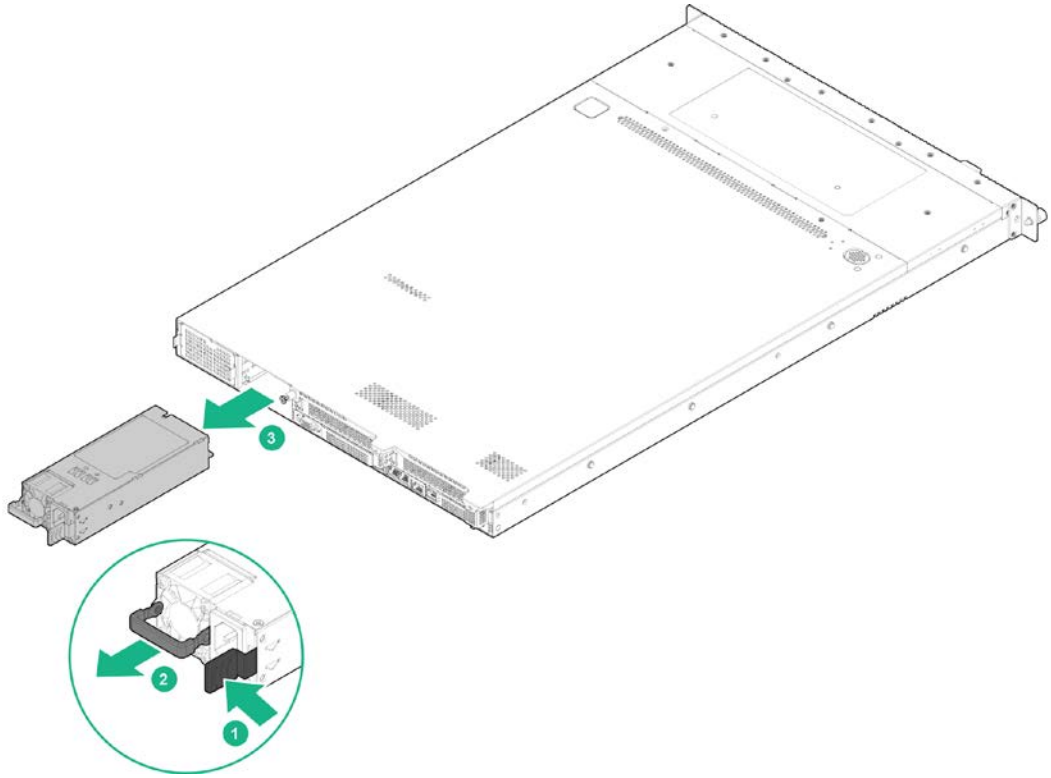
To replace the component, reverse the removal procedure.

Power supply

WARNING: To reduce the risk of personal injury from hot surfaces, allow the drives and the internal system components to cool before touching them.

To remove the component:

1. Power down the server (on page 19).
2. Disconnect all peripheral cables from the server.
3. Remove the power supply.



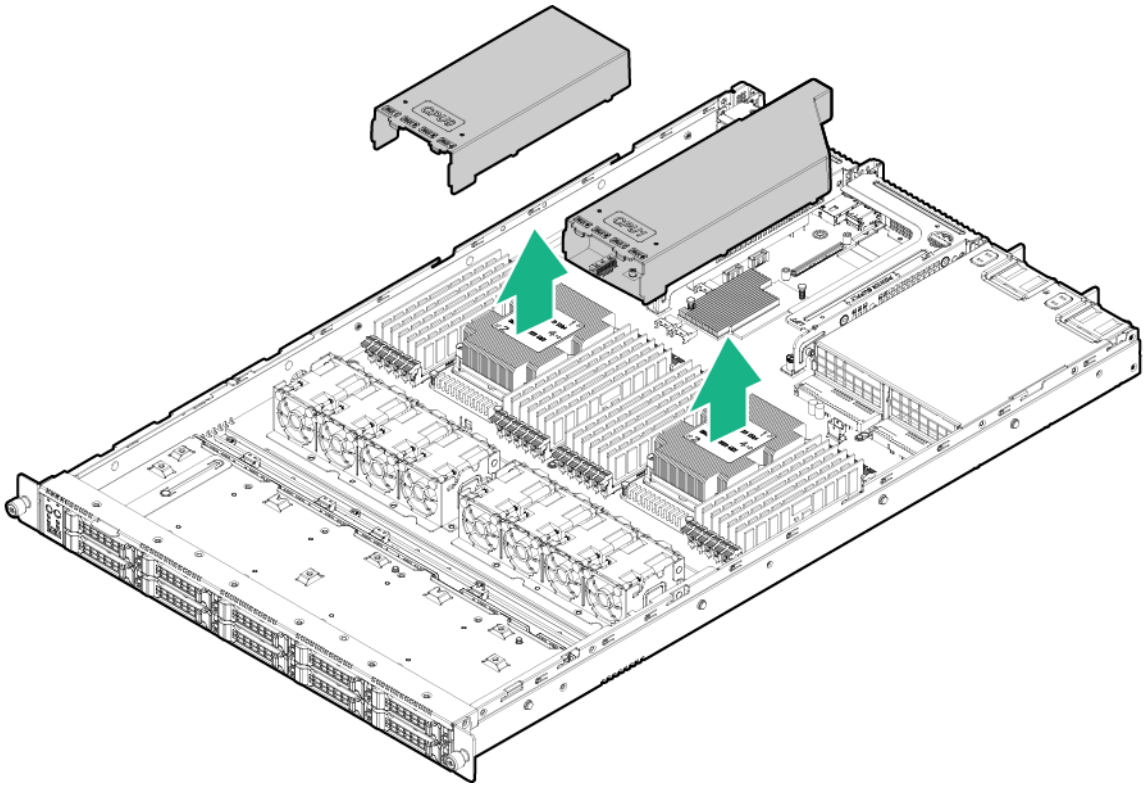
To replace the component, reverse the removal procedure.

Fan ducts

WARNING: To reduce the risk of personal injury from hot surfaces, allow the drives and the internal system components to cool before touching them.

To remove the component:

1. Power down the server (on page 19).
2. Disconnect all peripheral cables from the server.
3. Remove the rear access panel (on page 20).
4. Remove the fan ducts.



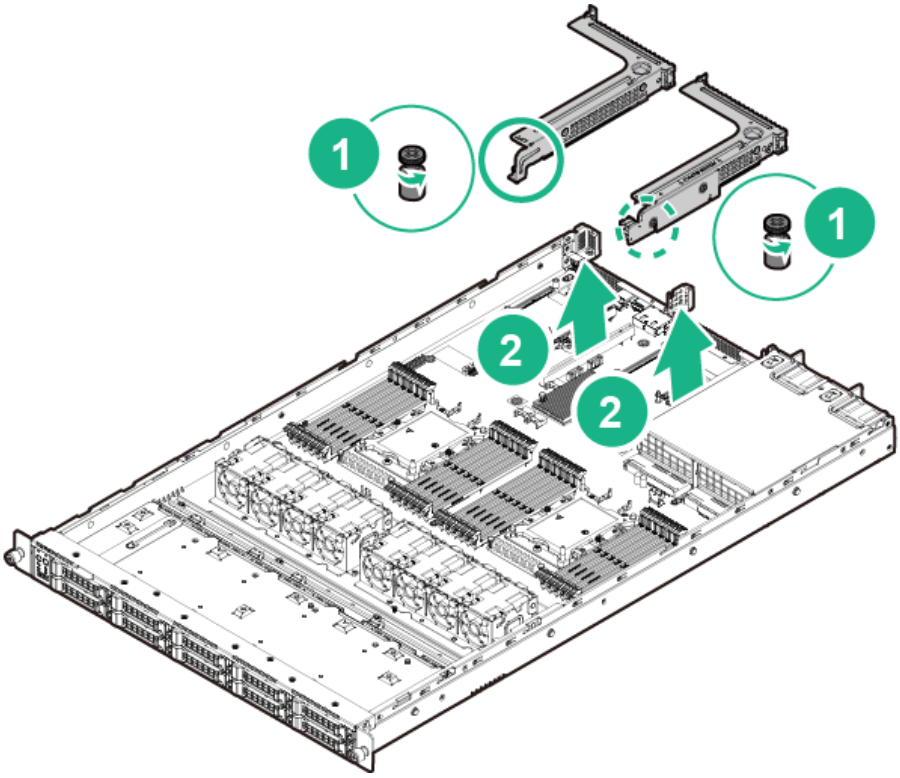
To replace the component, reverse the removal procedure.

Riser cage

WARNING: To reduce the risk of personal injury from hot surfaces, allow the drives and the internal system components to cool before touching them.

To remove the component:

1. Power down the server (on page 19).
2. Disconnect all peripheral cables from the server.
3. Remove the rear access panel (on page 20).
4. Loosen the two thumbscrews securing the riser cages inside the system, and then remove the riser cages.



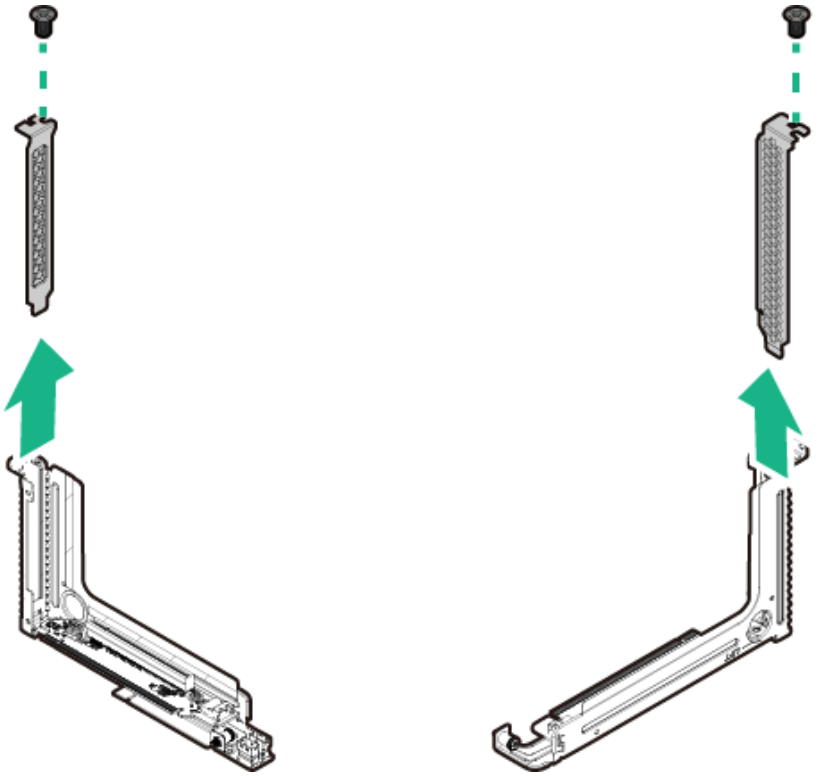
To replace the component, reverse the removal procedure.

PCIe add-on card

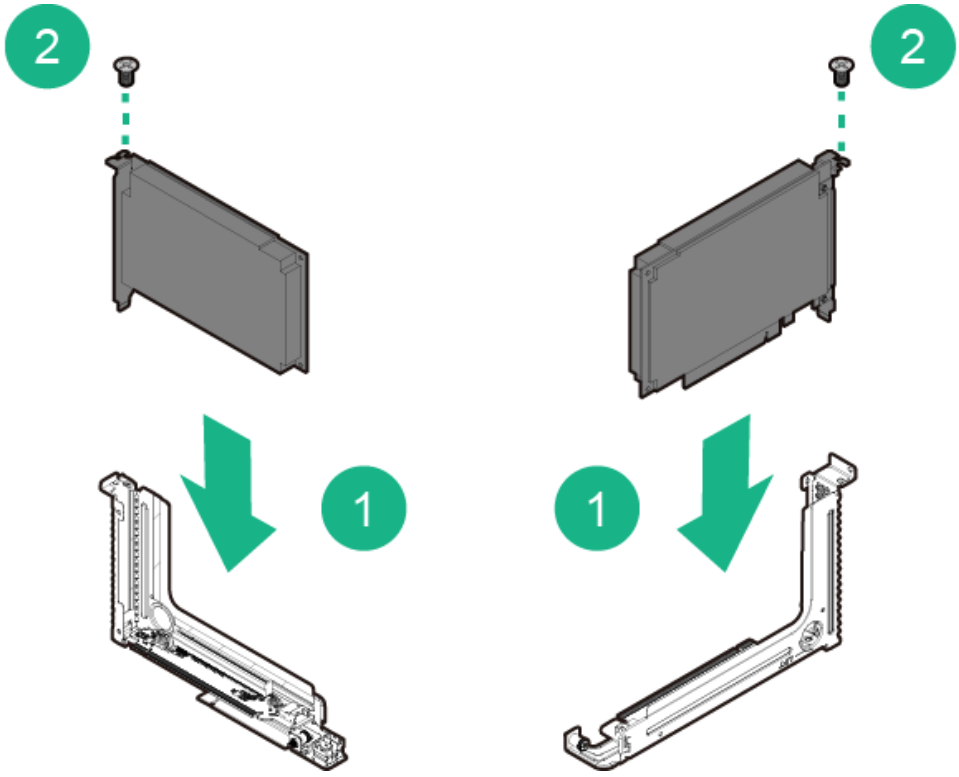
WARNING: To reduce the risk of personal injury from hot surfaces, allow the drives and the internal system components to cool before touching them.

To remove the component:

1. Power down the server (on page 19).
2. Disconnect all peripheral cables from the server.
3. Remove the rear access panel (on page 20).
4. Remove the riser cage (on page 68).
5. Remove the screws securing the riser card bracket to the riser card, and then remove the riser card bracket.



6. Install the PCIe add-on card.



To replace the component, reverse the removal procedure.

Memory options

The memory controller is integrated in the processor:

- Supports DDR4 2666/2400/2133 MT/s RDIMM (up to 32GB) and LRDIMM (up to 64GB) memory modules.
- Support single-rank (SR), dual-rank (DR) and quad-rank (QR) DIMM modules.
- Per processor:
  [For RDIMM]: 384 GB maximum memory (12 x 32GB RDIMM)
  [For LRDIMM]: 768 GB maximum memory (12 x 64GB LRDIMM)
- 2 DIMM per channel.

Single-, dual-, and quad-rank DIMMs

To understand and configure memory protection modes properly, an understanding of single-, dual-, and quad-rank DIMMs is helpful. Some DIMM configuration requirements are based on these classifications.

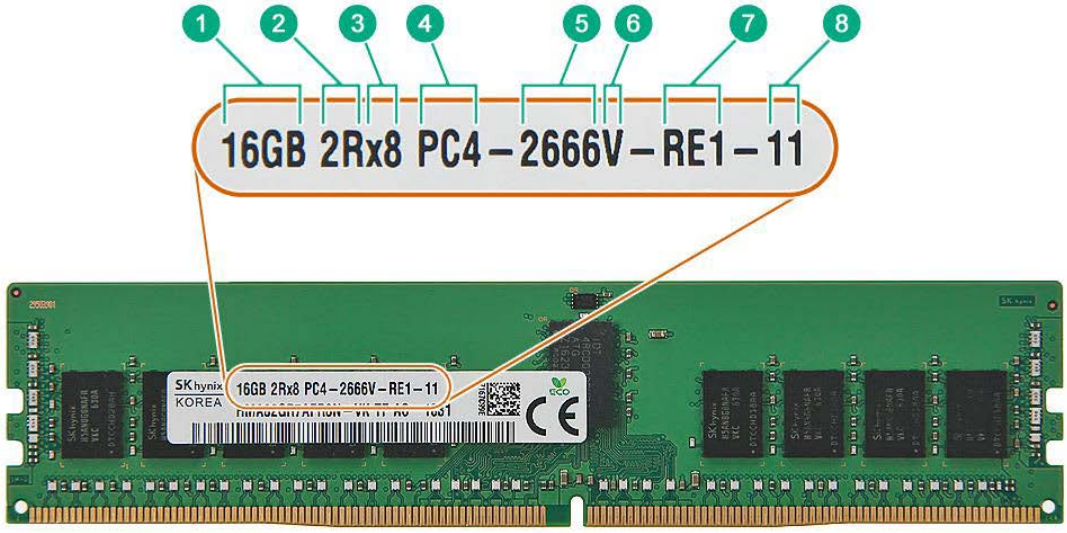
A single-rank DIMM has one set of memory chips that is accessed while writing to or reading from the memory. A dual-rank DIMM is similar to having two single-rank DIMMs on the same module, with only one rank accessible at a time. A quad-rank DIMM is, effectively, two dual-rank DIMMs on the same module. Only one rank is accessible at a time. The server memory control subsystem selects the proper rank within the DIMM when writing to or reading from the DIMM.

Dual- and quad-rank DIMMs provide the greatest capacity with the existing memory technology. For example, if current DRAM technology supports 8-GB single-rank DIMMs, a dual-rank DIMM would be 16 GB, and a quad-rank DIMM would be 32 GB.

LRDIMMs are labeled as quad-rank DIMMs. There are four ranks of DRAM on the DIMM, but the LRDIMM buffer creates an abstraction that allows the DIMM to appear as a dual-rank DIMM to the system. The LRDIMM buffer isolates the electrical loading of the DRAM from the system to allow for faster operation. This allows higher memory operating speed compared to quad-rank RDIMMs.

DIMM identification

To determine DIMM characteristics, see the label attached to the DIMM and refer to the following illustration and table.



Item	Description	Definition
1	Capacity	16 GB 32 GB 64 GB
2	Rank	1R = Single-rank 2R = Dual-rank 4R = Quad-rank
3	Data width on DRAM	x4 = 4-bit x8 = 8-bit
4	Memory generation	PC4 (DDR4)
5	Maximum memory speed	2666 MT/s
6	CAS latency	V=9
7	DIMM type	R = RDIMM (registered) L = LRDIMM (load reduced)
8	SPD Revision	11

For more information about product features, specifications, options, configurations, and compatibility, see the product QuickSpecs on the Hewlett Packard Enterprise website (**http://www.hpe.com/info/qs**).

- For DIMM spare replacement, install the DIMMs per slot number as instructed by the system software.

For more information about server memory, see the Hewlett Packard Enterprise website (**http://www.hpe.com/info/memory**).

Replacing the DIMM

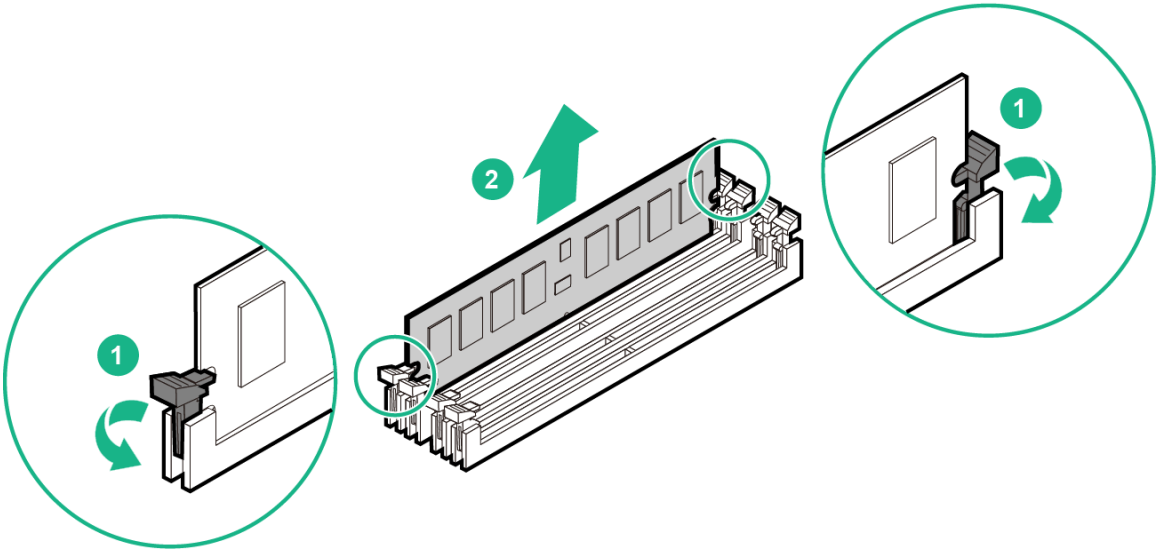
WARNING: To reduce the risk of personal injury from hot surfaces, allow the drives and the internal system components to cool before touching them.

CAUTION: To avoid ESD damage, when removing electrostatic-sensitive components from the failed system board, place the components on a static-dissipating work surface or inside separate antistatic bags.

CAUTION: To prevent damage to electrical components, take the appropriate anti-static precautions before beginning any installation, removal, or replacement procedure. Improper grounding can cause electrostatic discharge.

To remove the component:

1. Power down the server (on page 19).
2. Disconnect all peripheral cables from the server.
3. Remove the rear access panel (on page 20).
4. Remove the fan duct (on page 67).
5. Remove the DIMM.



To replace the component, reverse the removal procedure.

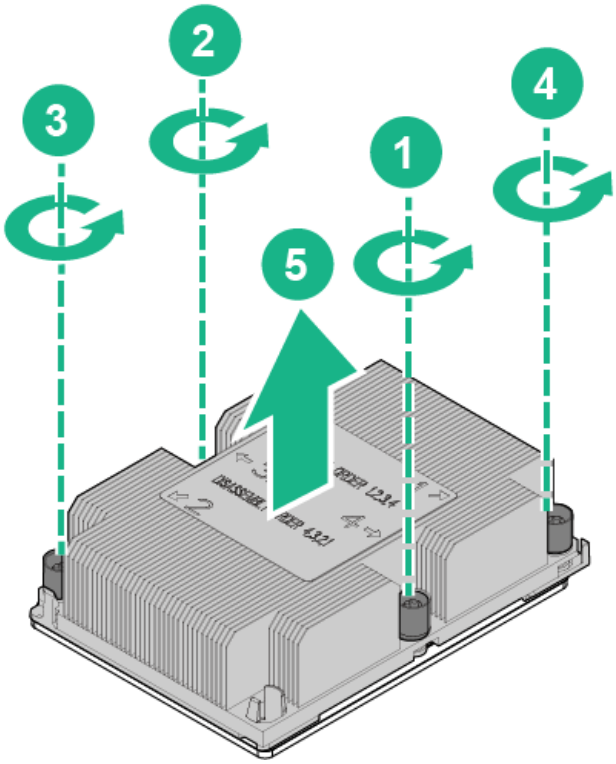
Heatsink and processor

WARNING: To reduce the risk of personal injury from hot surfaces, allow the heatsink to cool before touching it.

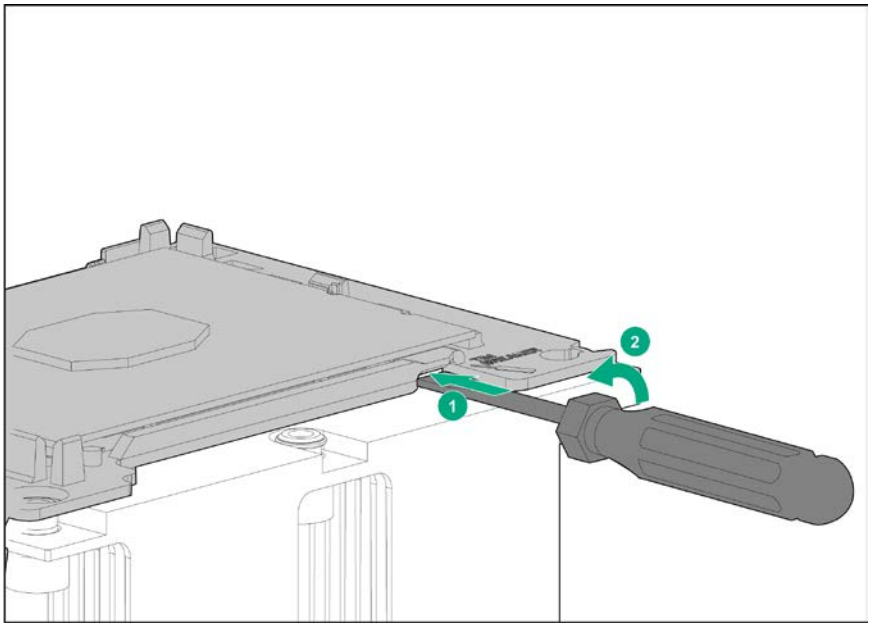
CAUTION: To avoid damage to the heatsink, do not touch the edge where the heatsink aligns with the water wall.

To remove the component:

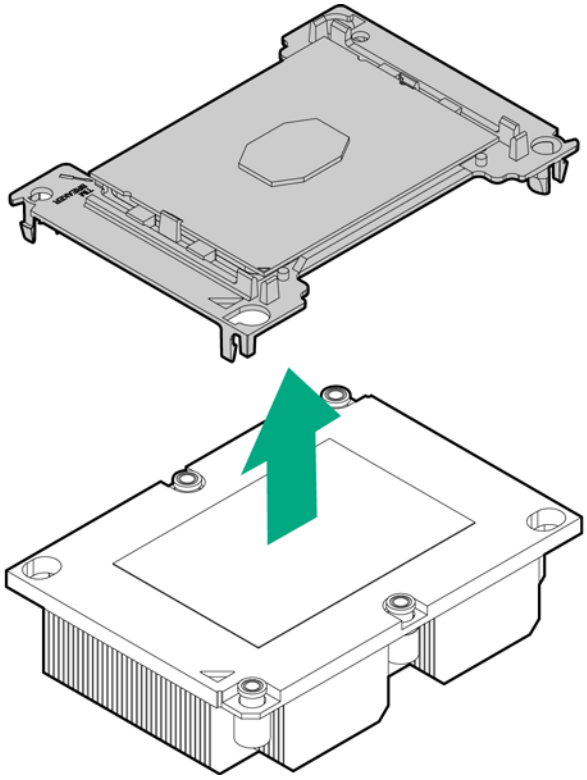
1. Power down the server (on page 19).
2. Disconnect all peripheral cables from the server.
3. Remove the rear access panel (on page 20).
4. Remove the fan duct (on page 67).
5. Remove the heatsink.



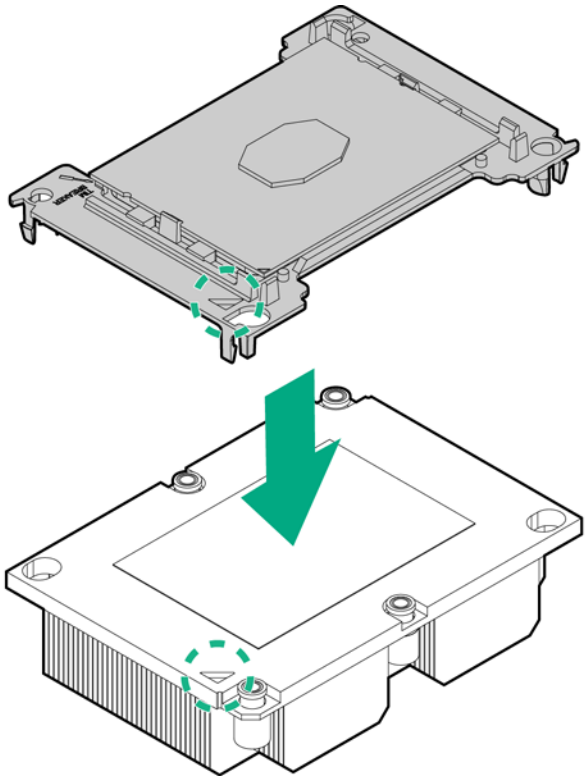
6. Release the thermal grease adhesion between the processor assembly and heatsink:
   a. Locate the TIM (thermal interface media) breaker slot between the processor assembly and heatsink. The slot is across from the Pin 1 indicator, near the corner.
   a. Insert a 1/4" flathead screwdriver into the slot. Be sure that the screwdriver is between the processor assembly and the heatsink.
   b. To release the adhesion of the thermal grease gently rotate the screwdriver.



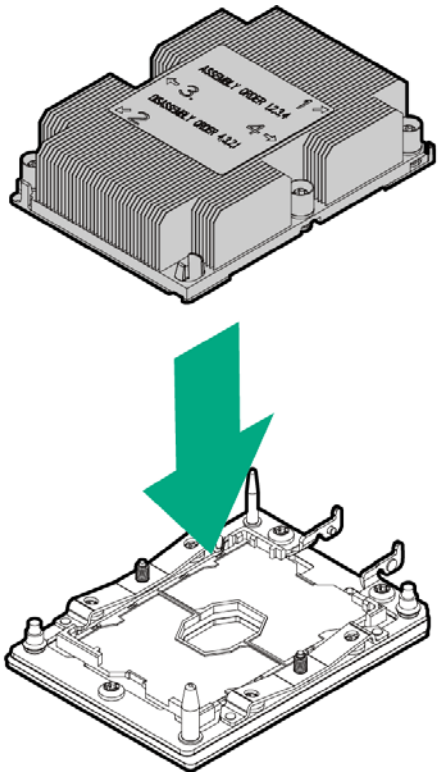
7. Unlatch the remaining corners of the processor assembly and remove the processor assembly from the heatsink.



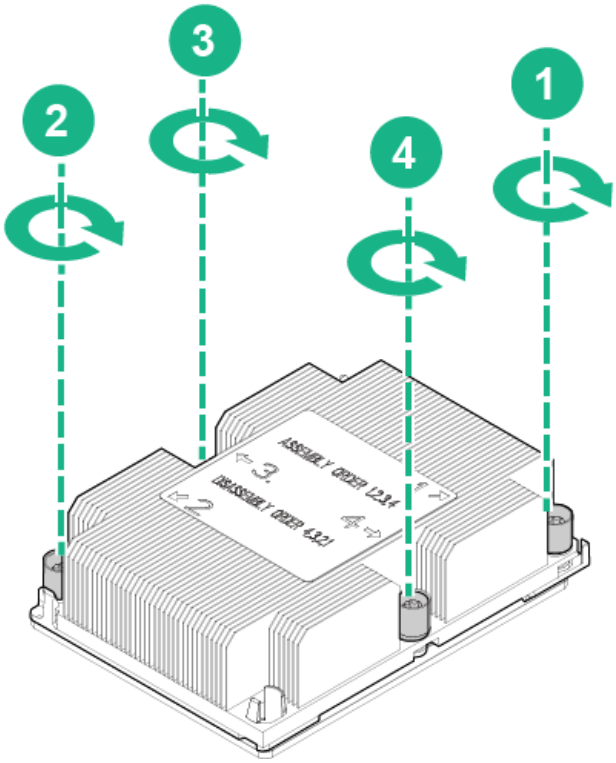
8. Using an alcohol wipe, remove the existing thermal grease from the processor and heatsink. Allow the alcohol to evaporate before continuing.
9. If reusing the heatsink, please follow the **Processor Spare Kit Installation Instructions** to apply thermal grease to the processor. Use the full contents of the thermal grease syringe. If installing a new heatsink, the thermal grease is pre-applied.
10. Install the processor assembly on the heatsink. Align the Pin 1 indicator on the processor to the Pin 1 indicator on the heatsink, and then latch the processor assembly to the heatsink.



11. Place the heatsink (with processor) onto the processor slot, making sure the pegs on the processor slot fit into the openings in the heatsink.



12. Secure the four screws on the heatsink in sequence (1 > 2 > 3 > 4).



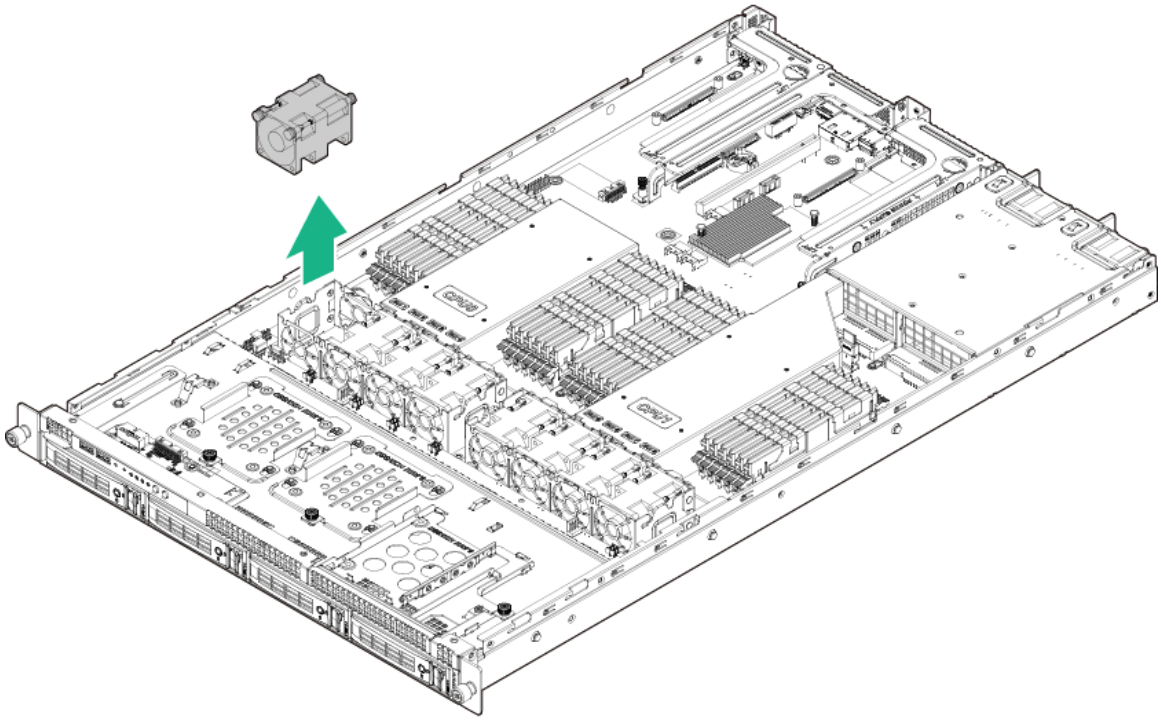
To replace the component, reverse the removal procedure.

Fan module

WARNING: To reduce the risk of personal injury from hot surfaces, allow the drives and the internal system components to cool before touching them.

To remove the component:

1. Power down the server (on page 19).
2. Disconnect all peripheral cables from the server.
3. Remove the rear access panel (on page 20).
4. Remove the front access panel (on page 21).
5. Remove the fan duct (on page 67).
6. Disconnect the fan cables from the system (see the fan cable routing image on page 108)
7. Remove the fan module from the chassis:



To replace the component, reverse the removal procedure.

System battery

WARNING: To reduce the risk of personal injury from hot surfaces, allow the drives and the internal system components to cool before touching them.

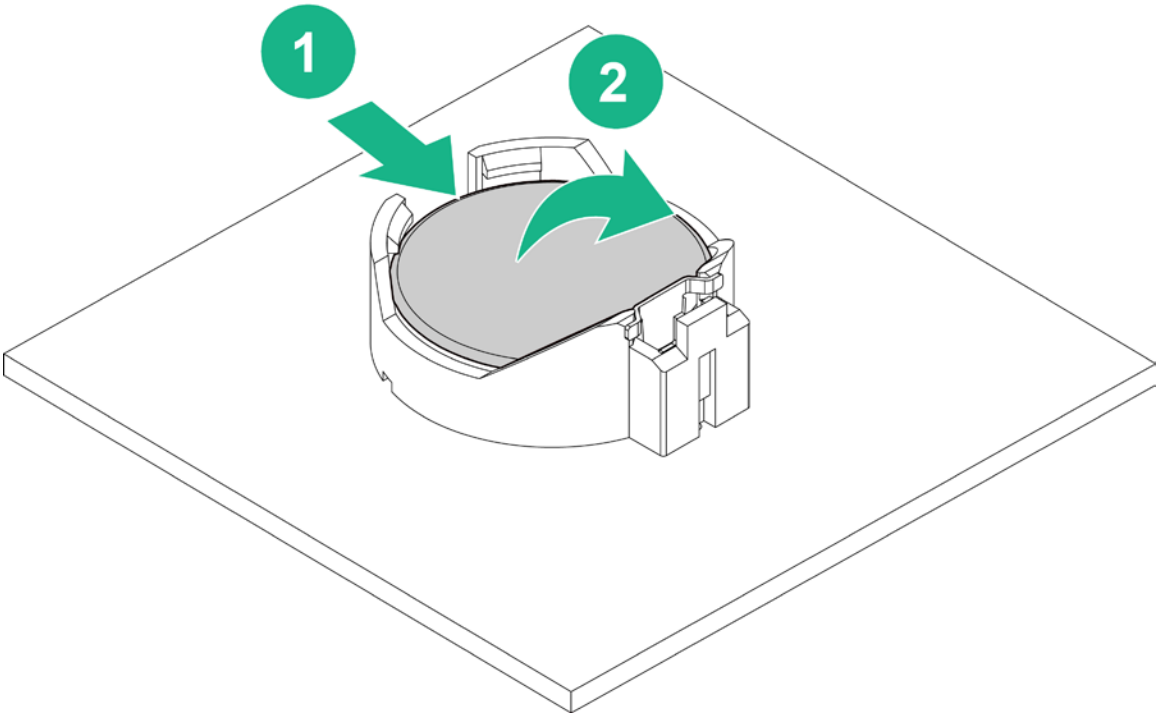
WARNING: The computer contains an internal lithium manganese dioxide, a vanadium pentoxide, or an alkaline battery pack. A risk of fire and burns exists if the battery pack is not properly handled. To reduce the risk of personal injury:

- Do not attempt to recharge the battery.
- Do not expose the battery to temperatures higher than 70°C (158°F).
- Do not disassemble, crush, puncture, short external contacts, or dispose of in fire or water.
- Replace only with the spare designated for this product..

IMPORTANT: When the server is in standby mode, auxiliary power is still being provided to the system.

To install the component:

1. Power down the server (on page 19).
2. Disconnect all peripheral cables from the server.
3. Remove the rear access panel (on page 20).
4. Remove the riser cage (on page 68).
5. Remove the system battery.



To replace the component, reverse the removal procedure.

System board

WARNING: To reduce the risk of personal injury from hot surfaces, allow the drives and the internal system components to cool before touching them.

CAUTION: To avoid damage to the processor and system board, only authorized personnel should attempt to replace or install the processor in this server.

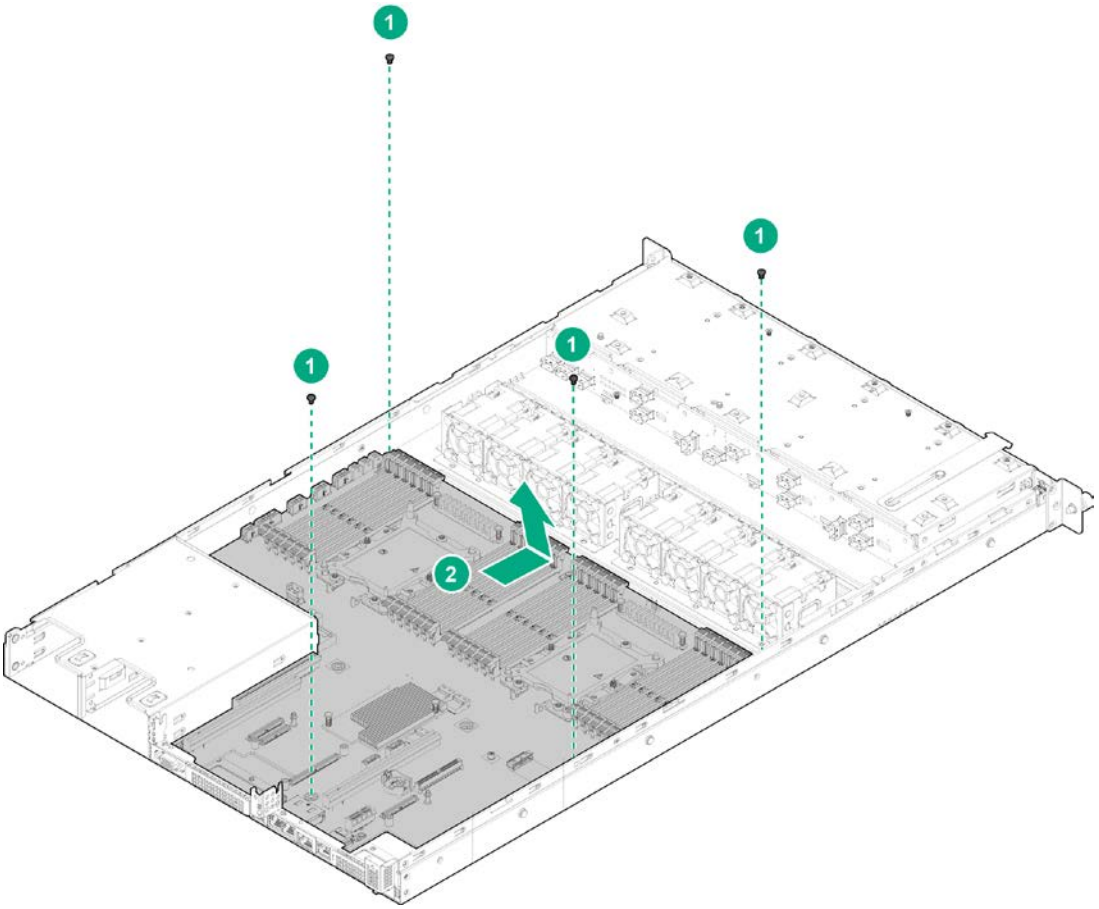
CAUTION: To avoid ESD damage, when removing electrostatic-sensitive components from the failed system board, place the components on a static-dissipating work surface or inside separate antistatic bags.

CAUTION: To prevent damage to electrical components, take the appropriate anti-static precautions before beginning any installation, removal, or replacement procedure. Improper grounding can cause electrostatic discharge.

To remove the component:

1. Power down the server (on page 19).
2. Disconnect all peripheral cables from the server.
3. Remove the rear access panel (on page 20).
4. Remove the power supply (on page 66).
5. Remove the fan ducts (on page 67).
6. Remove the riser cages (on page 68).
7. Remove the DIMM (on page 73).
8. Remove the heatsink (on page 74).
9. Remove the OCP card if present (on page 86).
10. Disconnect and remove all cables from the system board (on page 103).

11. Remove the system board.
    a. Remove the four screws securing the system board to the system.
    b. Carefully slide the system board towards the front of the system.
    c. Lift the system board out the system.

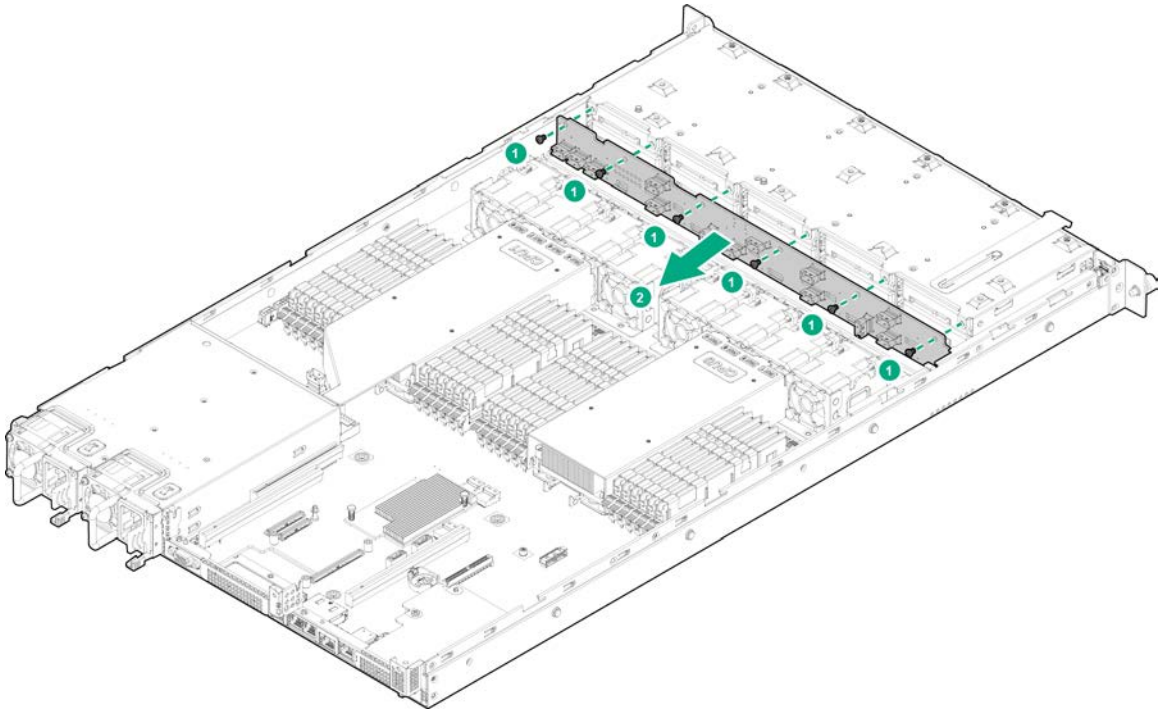


To replace the component, reverse the removal procedure.

Front drive cage backplane

WARNING: To reduce the risk of personal injury from hot surfaces, allow the drives and the internal system components to cool before touching them.

1. Power down the server (on page 19).
2. Disconnect all peripheral cables from the server.
3. Remove the rear access panel (on page 20).
4. Remove the front access panel (on page 21).
5. Untie and disconnect all relevant cables located on the left and right side of the system chassis, and then remove them from their respective cable routing channels.
6. Disconnect all fan cables from the front drive cage backplane (on page 108).
7. Remove the front drive cage backplane board.
   a. Remove the 6 screws securing the frond drive cage backplane to the system.
   b. Pull and remove the front drive cage backplane board.



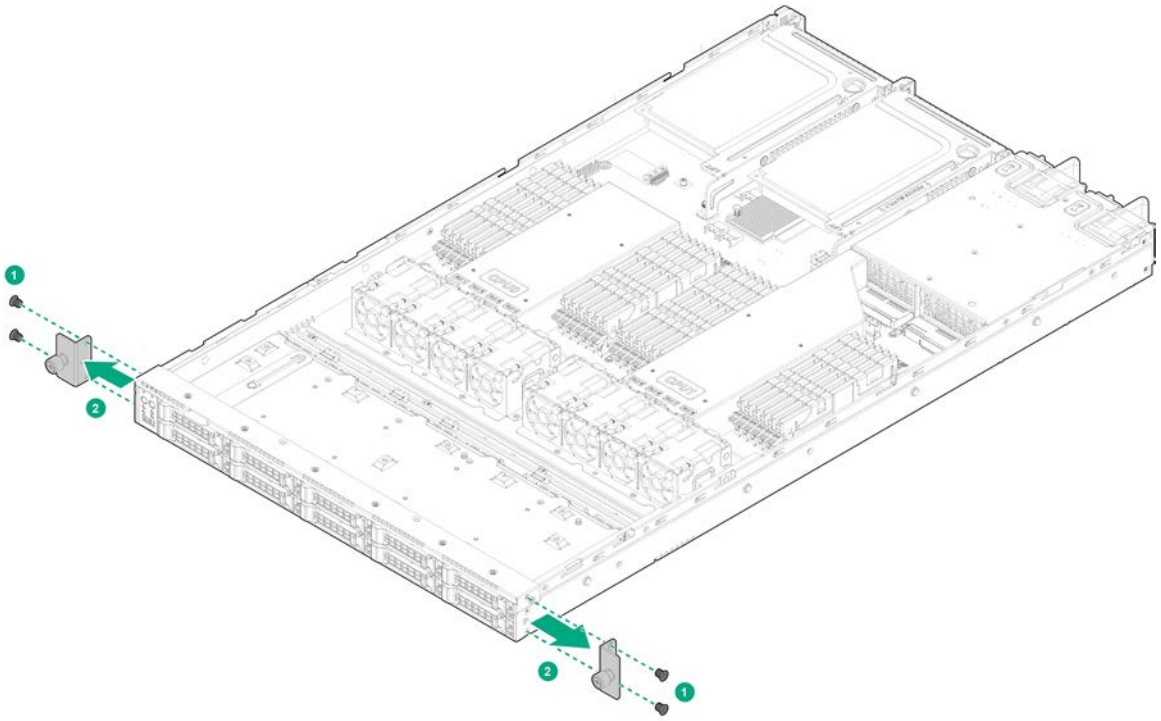
To replace the component, reverse the removal procedure.

Front panel and USB

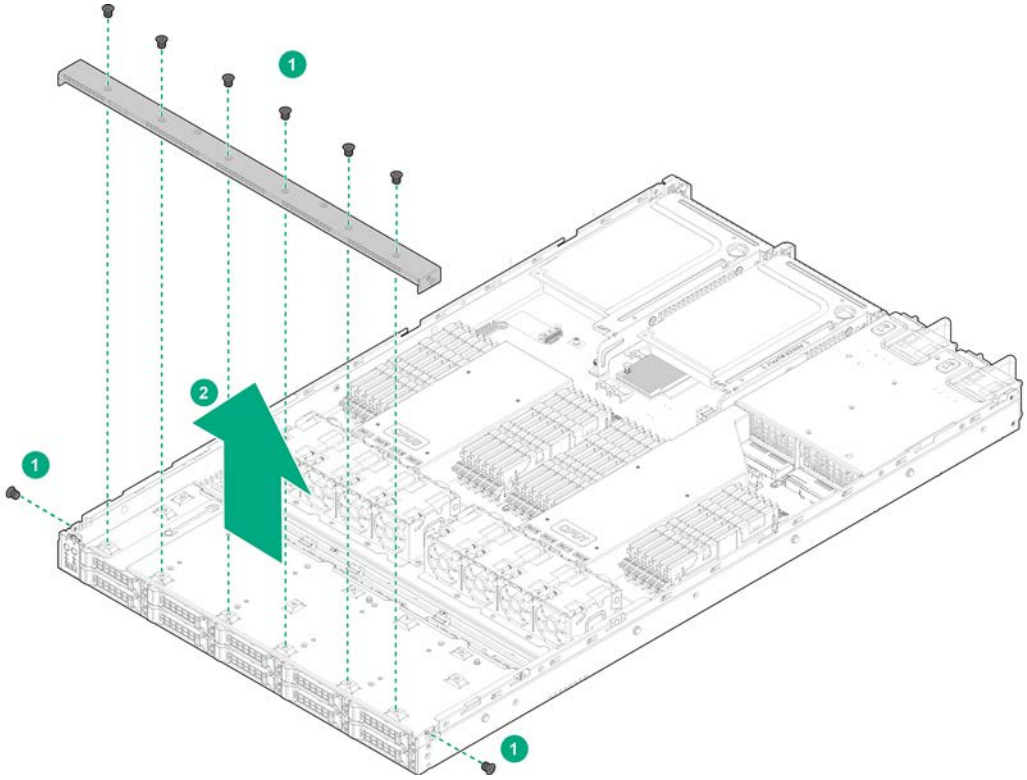
WARNING: To reduce the risk of personal injury from hot surfaces, allow the drives and the internal system components to cool before touching them.

To remove the component:

1. Power down the server (on page 19).
2. Disconnect all peripheral cables from the server.
3. Remove the rear access panel (on page 20).
4. Remove the front access panel (on page 21).
5. Remove the thumbnail screw arm.
   a. Remove the 4 screws securing the thumbnail screw arms to the system.
   b. Pull and remove the LED and USB covers.

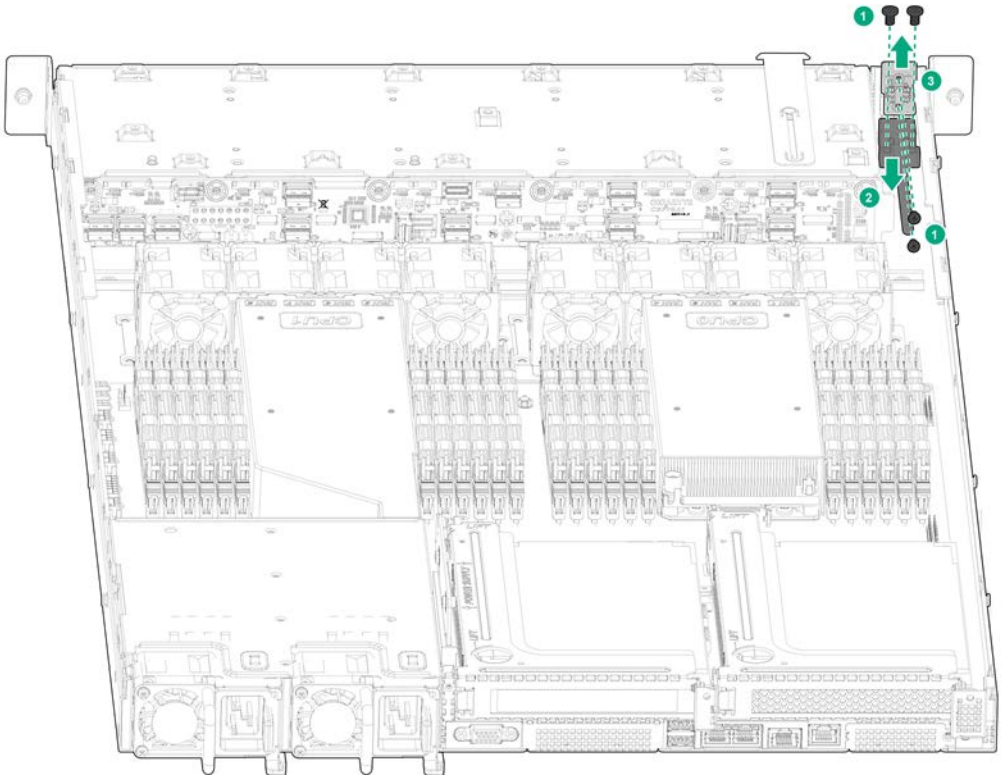


6. Remove the hard drive cage top cover.
   a. Remove the 8 screws securing the hard drive cage top cover to the system.
   b. Pull and remove the hard drive cage top cover.



7. Untie and disconnect all relevant cables located on the left and right side of the system chassis, and then remove them from their respective cable routing channels.

8. Remove the LED and USB board.
   a. Remove the 2 screws securing the USB cable and the 2 screws securing the LED and USB board.
   b. Disconnect the USB cable.
   c. Lift and remove the LED and USB board.



To replace the component, reverse the removal procedure.

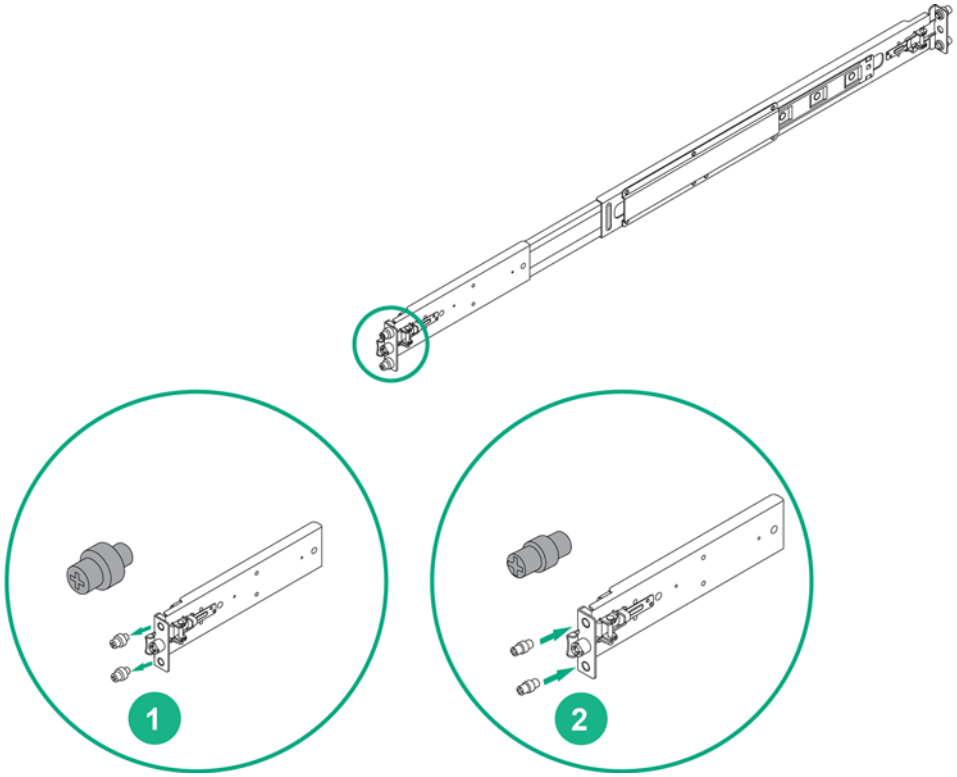
Rail kit

WARNING: To reduce the risk of personal injury from hot surfaces, allow the drives and the internal system components to cool before touching them.

NOTE: The following images are for reference only; the actual product may vary.

To install the component:

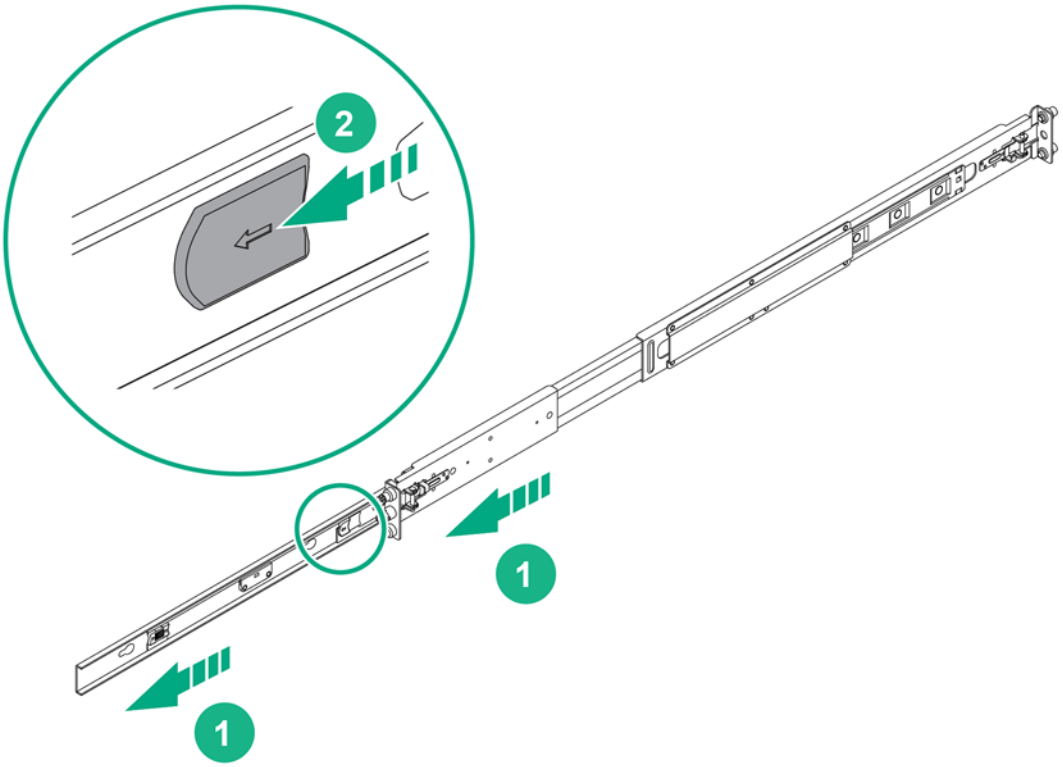
1. Power down the server (on page 19).
2. Disconnect all peripheral cables from the server.
3. Before installation check the rack post type used, as the rail kit is pre-installed with screws for for square hole posts. If the rack post type features round hole posts, please switch the pre-installed square hole screws, and then install round hole screws as seen in the following image.



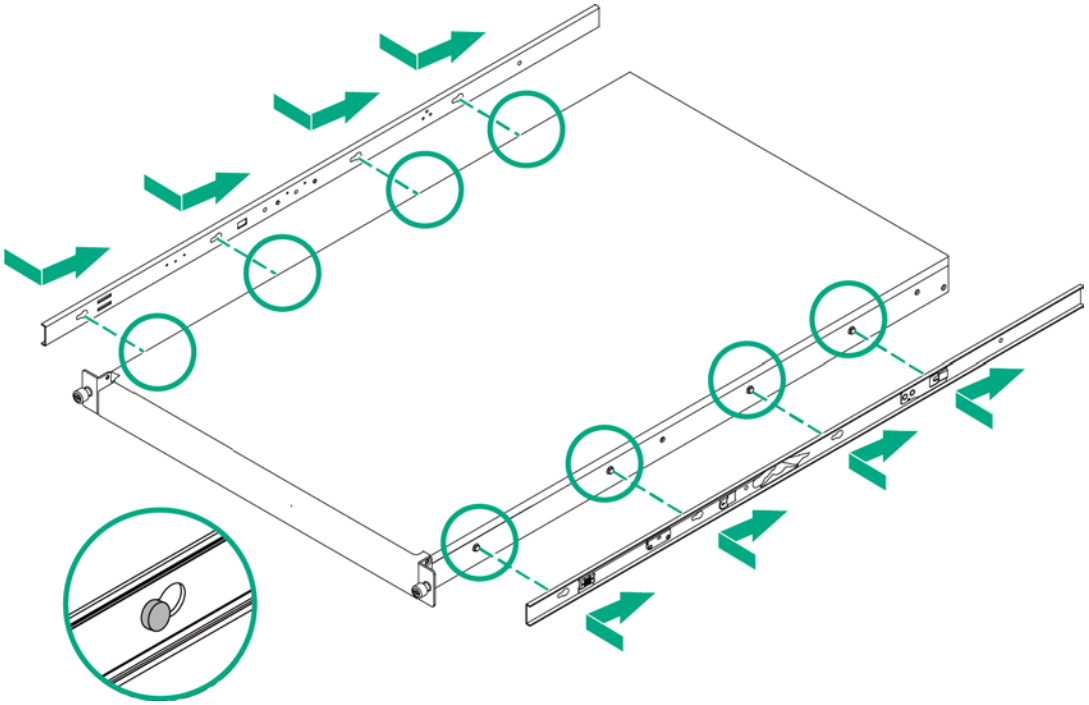
4. Remove the inner rail from the outer rail/bracket assembly.
   a. Extend the inner rail until you hear a click.

> ⚠ **WARNING:** When extending the inner rail, ensure that the ball bearings lock in place. If they are not locked, you will not be able to properly insert the chassis.

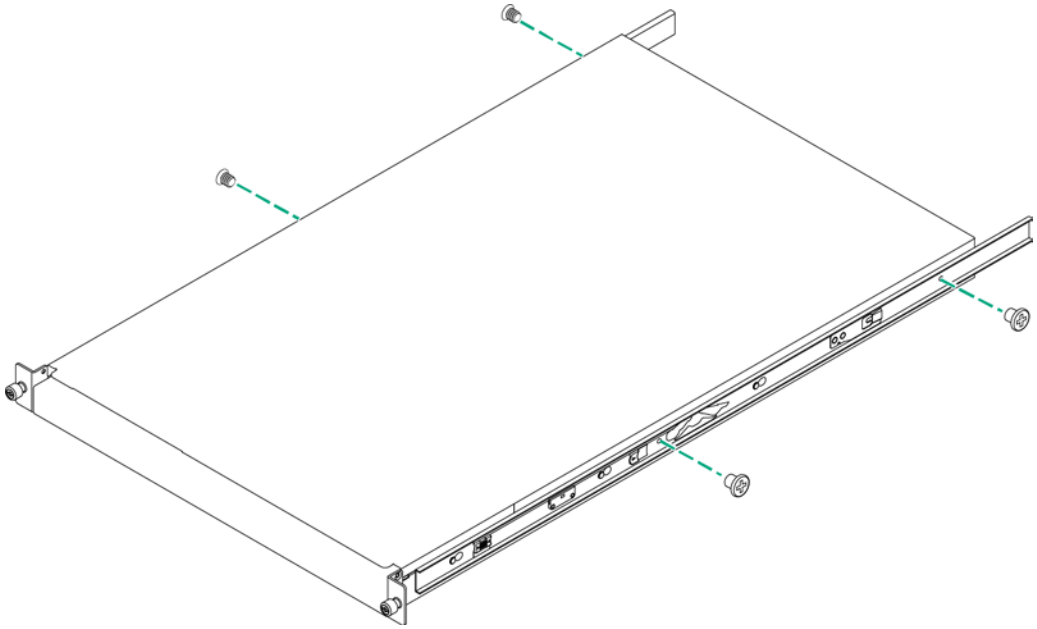
   b. Pull the release tab forward then remove the inner rail.



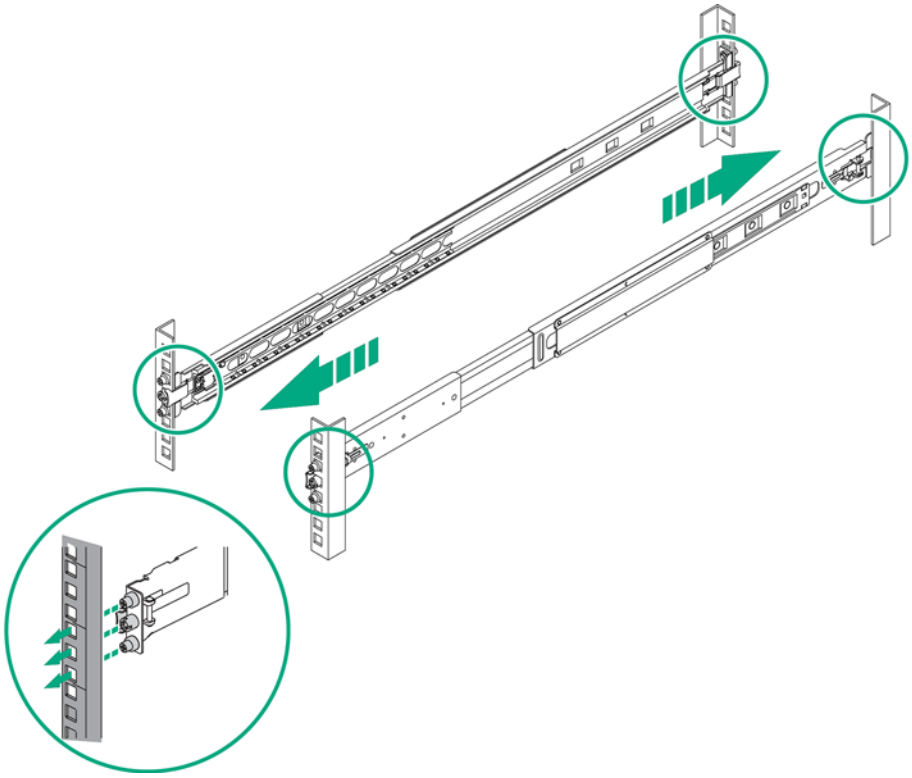
5. Insert the inner rail onto the chassis so that it locks in place.



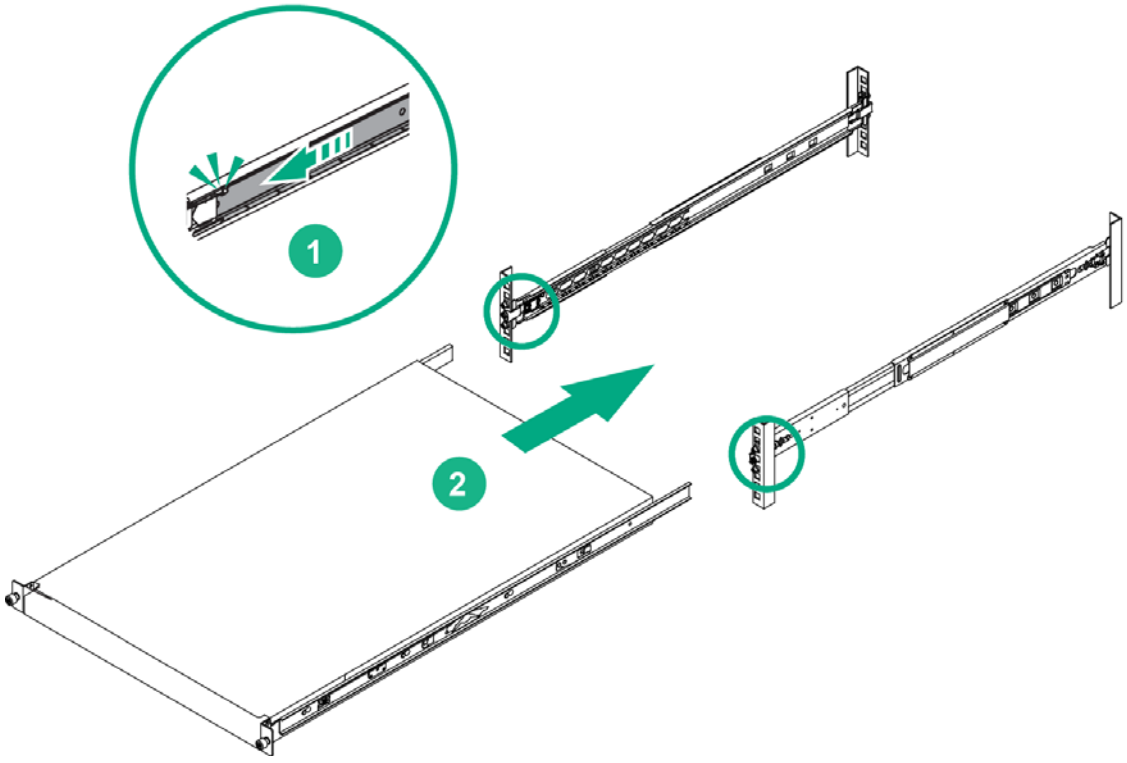
6. Secure the inner rail onto the chassis with 4 screws.



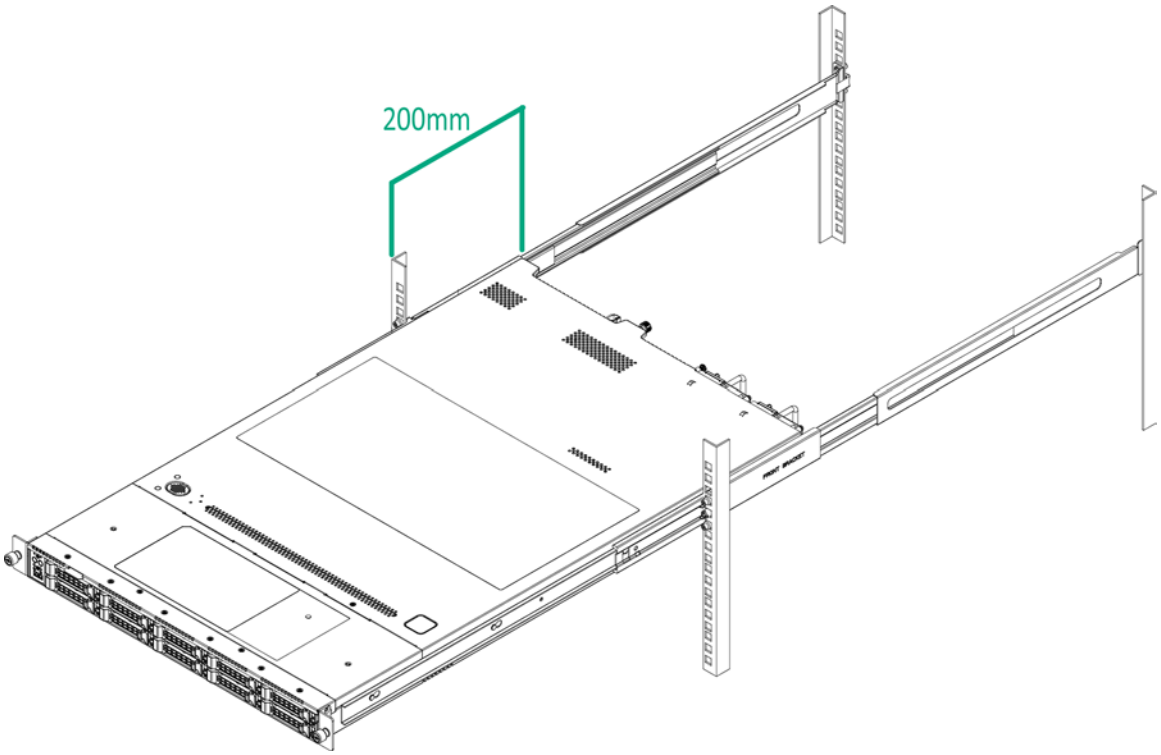
7. Affix the outer rail/bracket assembly to the frame.



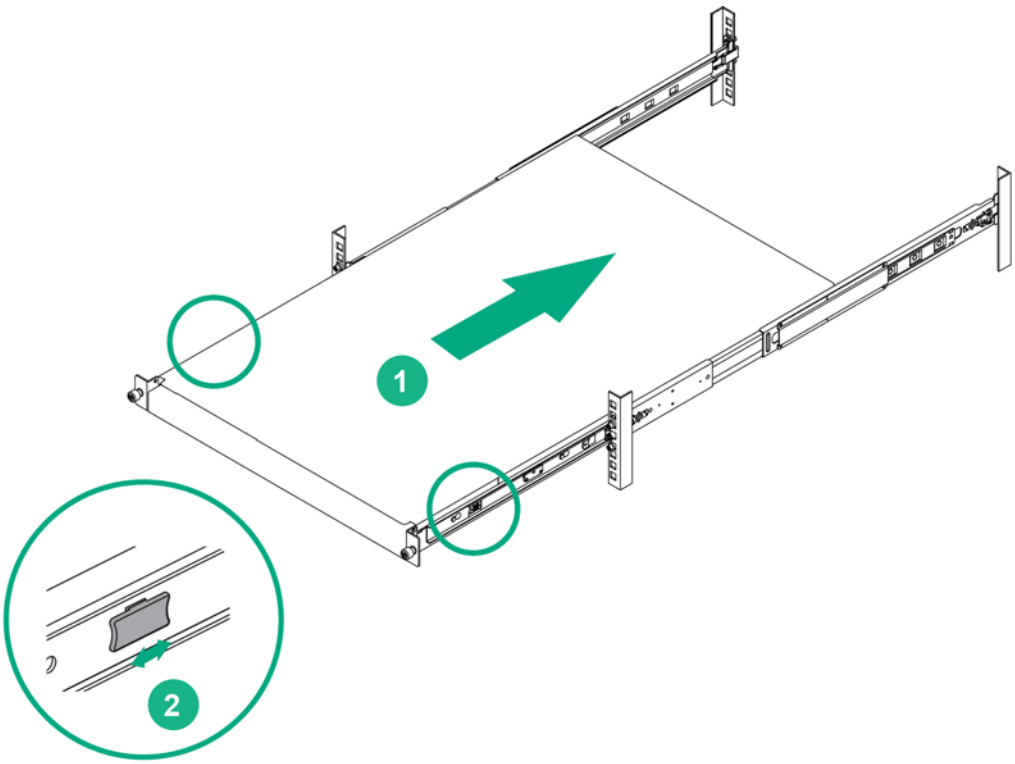
8. Insert the chassis into the outer rail.
   a. Ensure the ball bearing retainer is located at the front of the rail.
   b. Insert the chassis into the outer rails.



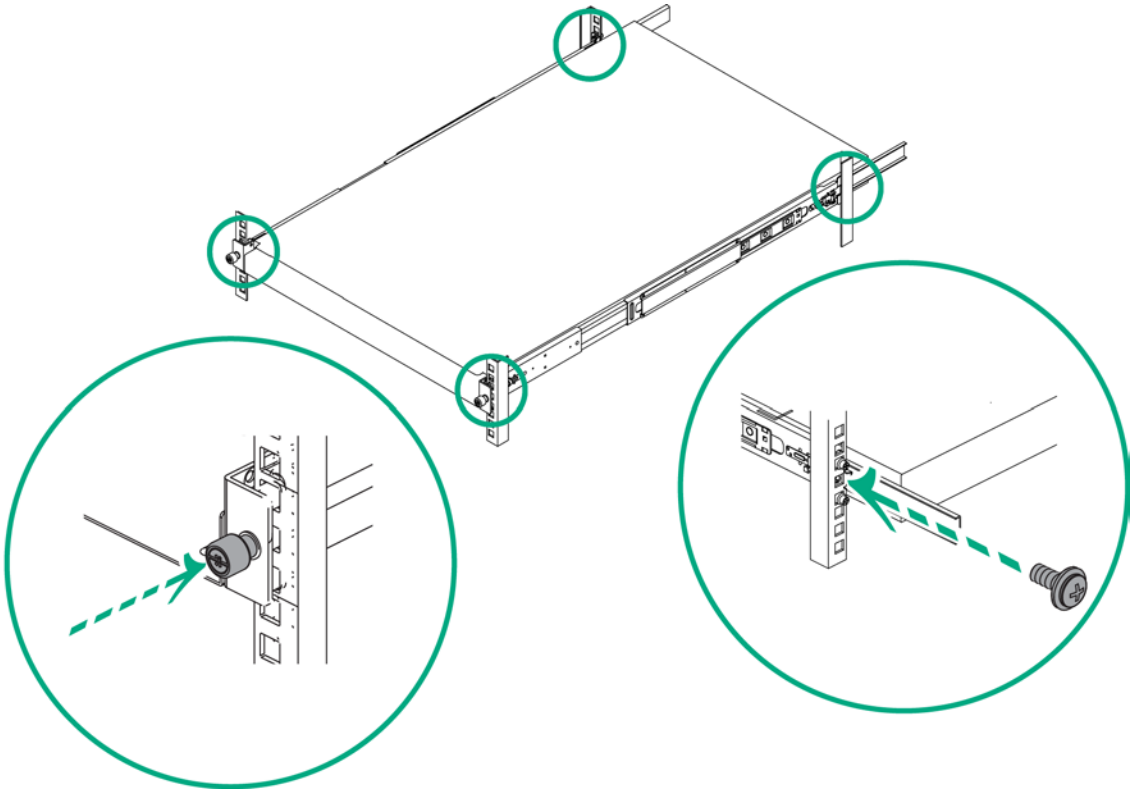
⚠ **WARNING:** When inserting the chassis into the outer rails of the rack, hold the chassis securely and push the chassis in for at least 20 cm (200mm) before loosening to ensure proper installation, as seen in the following image.



9. Continue pushing the chassis into the outer rail until you hit a stop, then pull/push the release tab on the inner rails.



10. Secure the chassis using the thumbnail screws on the front, and the supplied screws in the rear.



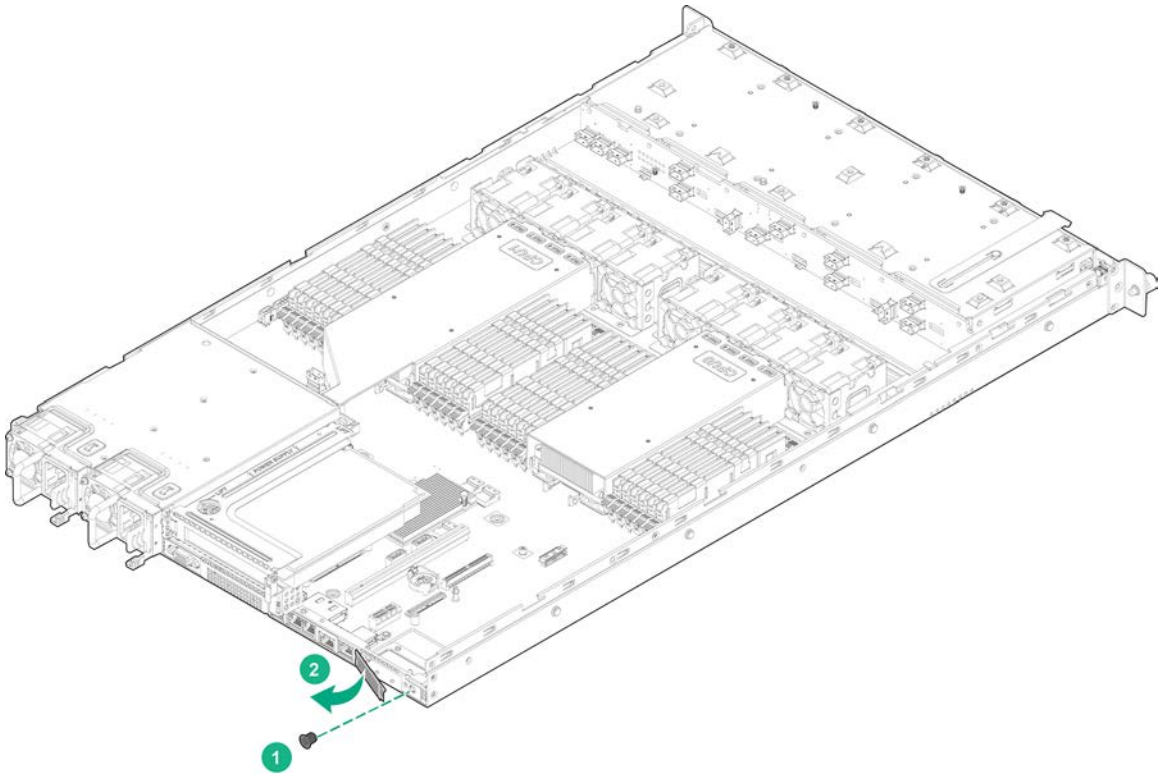
To remove the component, reverse the installation procedure.

OCP mezzanine card (optional)

WARNING: To reduce the risk of personal injury from hot surfaces, allow the drives and the internal system components to cool before touching them.

To install the component:

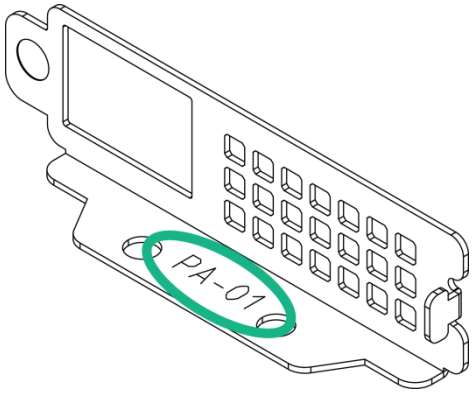
1. Power down the server (on page 19).
2. Disconnect all peripheral cables from the server.
3. Remove the rear access panel (on page 20).
4. Remove the riser card (on page 68)
5. Remove the OCP mezzanine card bracket.



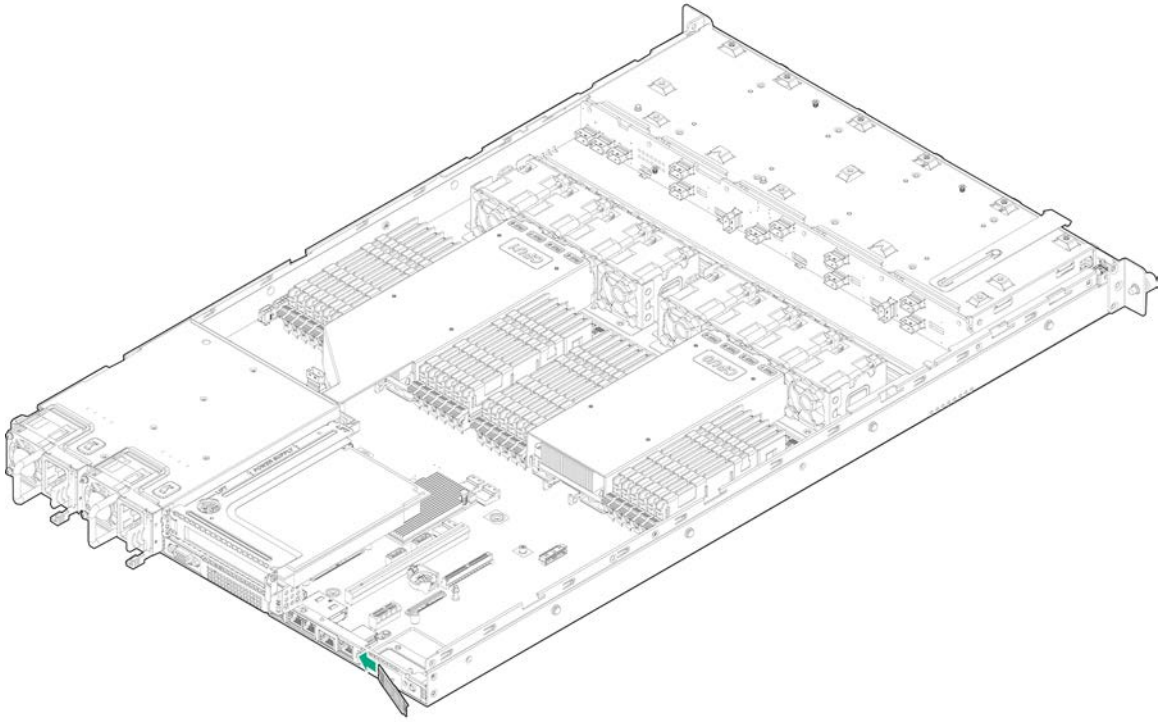
6. Locate the correct OCP mezzanine card bracket for your card.
   a. Identify the name of the corresponding bracket for your OCP mezzanine card in the following table.

OCP Card	Bracket Name	Part Number
INTEL ; HPE CL Eth 1x25Gb XXV71 OCP FIO Adptr ; XXV710DA1OCPG	PA-01	25HB1-R1810F-I0R
Mellanox : HPE CL Eth 1x50Gb MLX4Lx OCP FIO Adptr ; MCX4431A-GCAN	PA-02	25HB1-R1810J-I0R
INTEL : HPE CL Eth 2x25Gb XXV71 OCP FIO Adptr ; XXV710DA2OCPG1	PA-03	25HB1-R1810G-I0R
Qlogic : HPE CL Eth 2x10Gb Q41132 OCP Adptr ; QL41132HOCU	PA-04	25HB1-R1810K-I0R
Qlogic : HPE CL Eth 2x25Gb Q41232 OCP Adptr ; QL41232HOCU		
Mellanox : HPE CL Eth 2x25Gb MLX4Lx OCP Mezz Adptr ; MCX4421A-ACAN	PA-05	25HB1-R1810I-I0R

b. Check the inside of the bracket for the bracket's name to match the correct bracket.



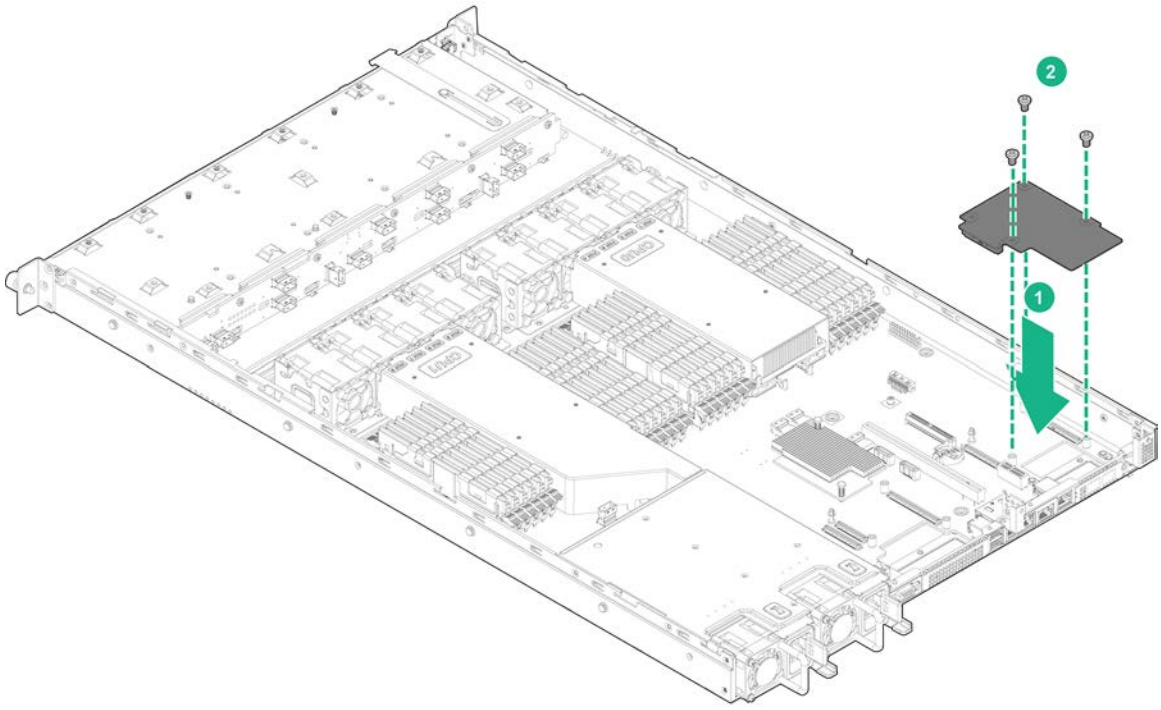
7. Install the OCP mezzanine card bracket.



8. Install the OCP mezzanine card into the system:
   a. Insert the OCP mezzanine card into the slot at the rear of the system.

> △ **CAUTION:** When inserting the MCX4421 and MCX4431 OCP mezzanine cards, users will need to press and squeeze the foam at the rear of the card to fit the card into the slots along the rear wall of the chassis. Failure to press the foam may result in damage to the card's mylar sheath.

   b. Secure the OCP mezzanine card to the chassis with three screws.



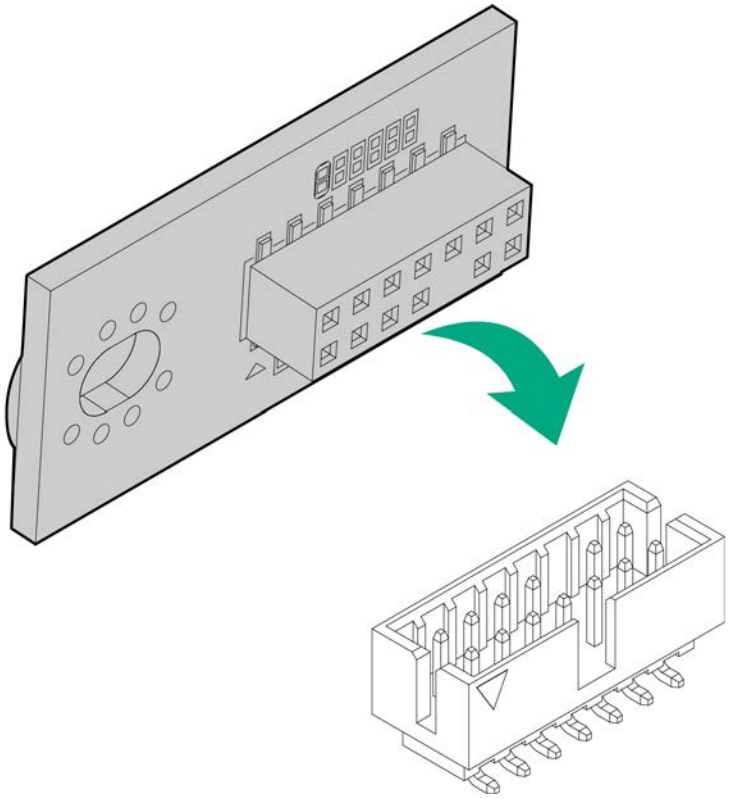
To replace the component, reverse the removal procedure.

TPM Module (optional)

WARNING: To reduce the risk of personal injury from hot surfaces, allow the drives and the internal system components to cool before touching them.

To install the component:

1. Power down the server (on page 19).
2. Disconnect all peripheral cables from the server.
3. Remove the rear access panel (on page 20).
4. Remove the riser cage (on page 68).
5. Locate the TPM connector on the system board (see page 11 for connector locations).
6. Install the TPM module into the system.

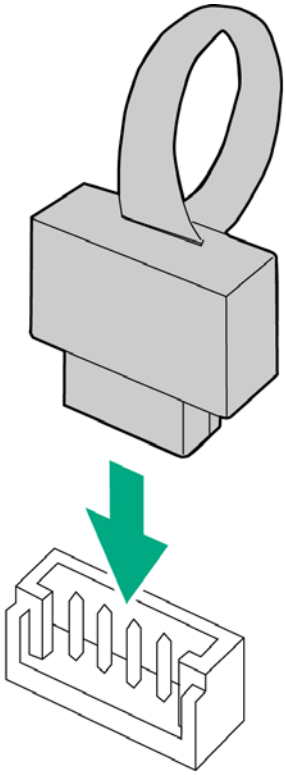


To replace the component, reverse the removal procedure.

VROC upgrade module (optional)

WARNING: To reduce the risk of personal injury from hot surfaces, allow the drives and the internal system components to cool before touching them.

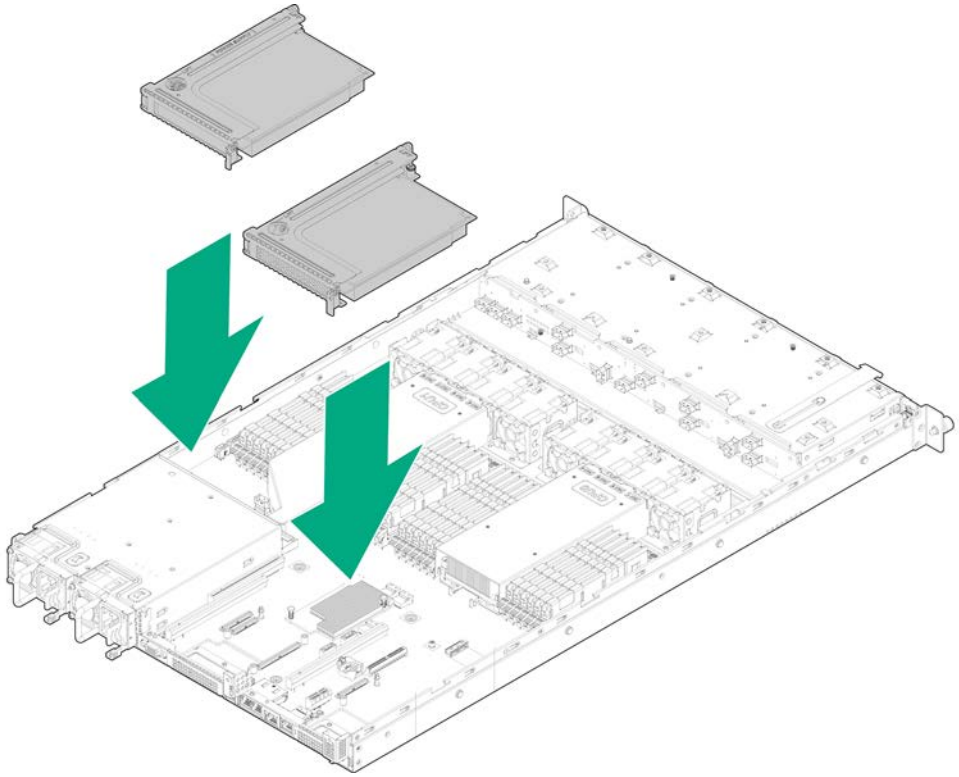
1. Power down the server (on page 19).
2. Disconnect all peripheral cables from the server.
3. Remove the rear access panel (on page 20).
4. Remove the riser cage (on page 68).
5. Locate the VROC upgrade module connector on the system board (see page 11 for connector locations).
6. Install the VROC upgrade module.



SAS expansion enablement FIO kit (optional)

WARNING: To reduce the risk of personal injury from hot surfaces, allow the drives and the internal system components to cool before touching them.

1. Power down the server (on page 19).
2. Disconnect all peripheral cables from the server.
3. Remove the rear access panel (on page 20).
4. Remove the left and/or center riser cage (on page 68).
5. Install the SAS card onto the riser cage (on page 69).
6. Install the riser cage into the system.



7. Secure the riser cage to the system using the thumbnail screws described in the Riser cage section on page 68.
8. Connect and route the SAS cables (on page 106 or 107).

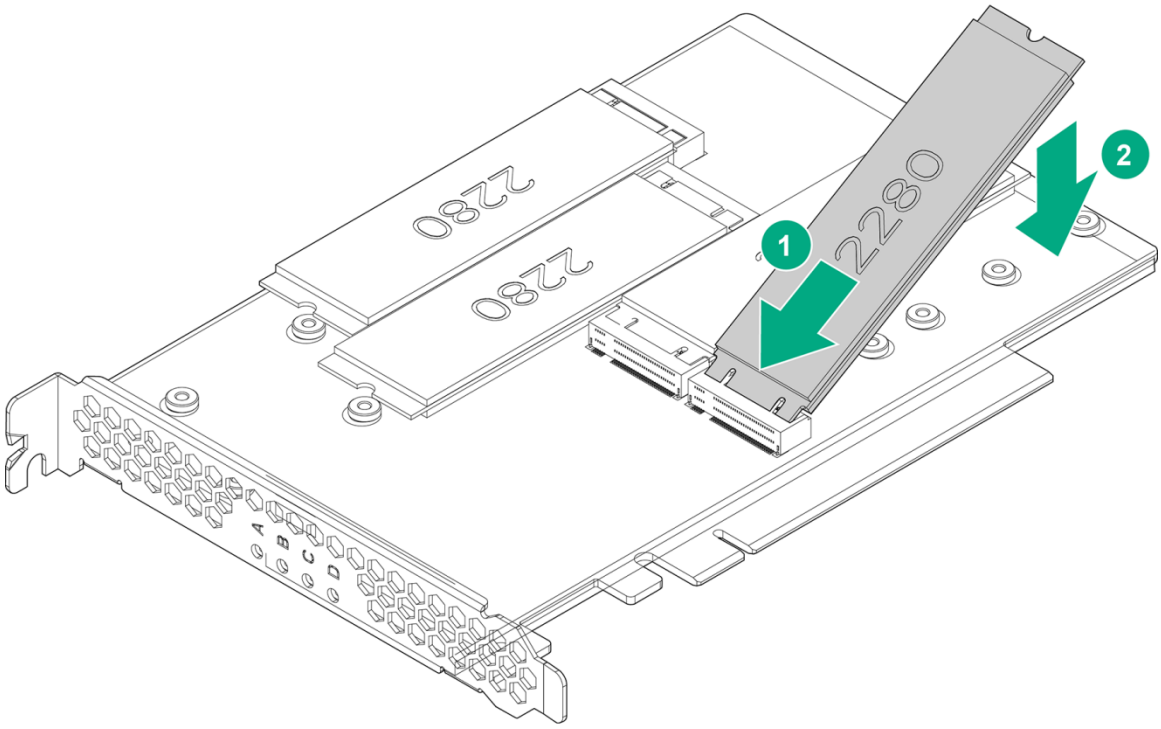
To remove the component, reverse the installation procedure.

M.2 enablement kit (optional)

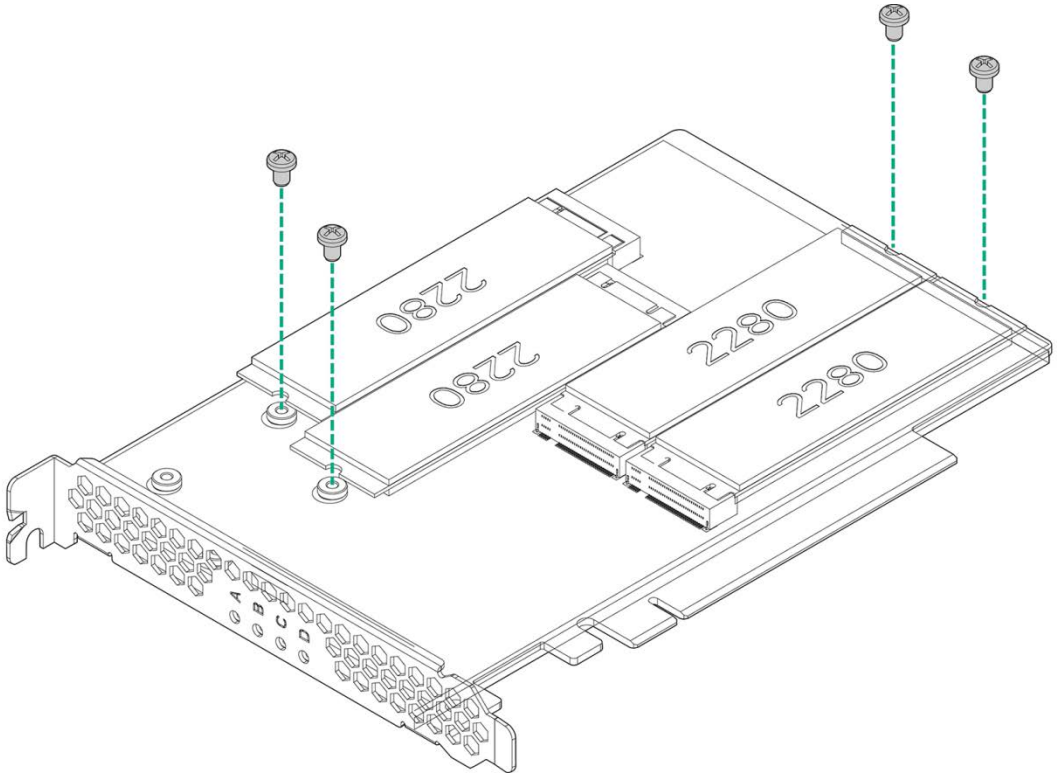
WARNING: To reduce the risk of personal injury from hot surfaces, allow the drives and the internal system components to cool before touching them.

To install the component:

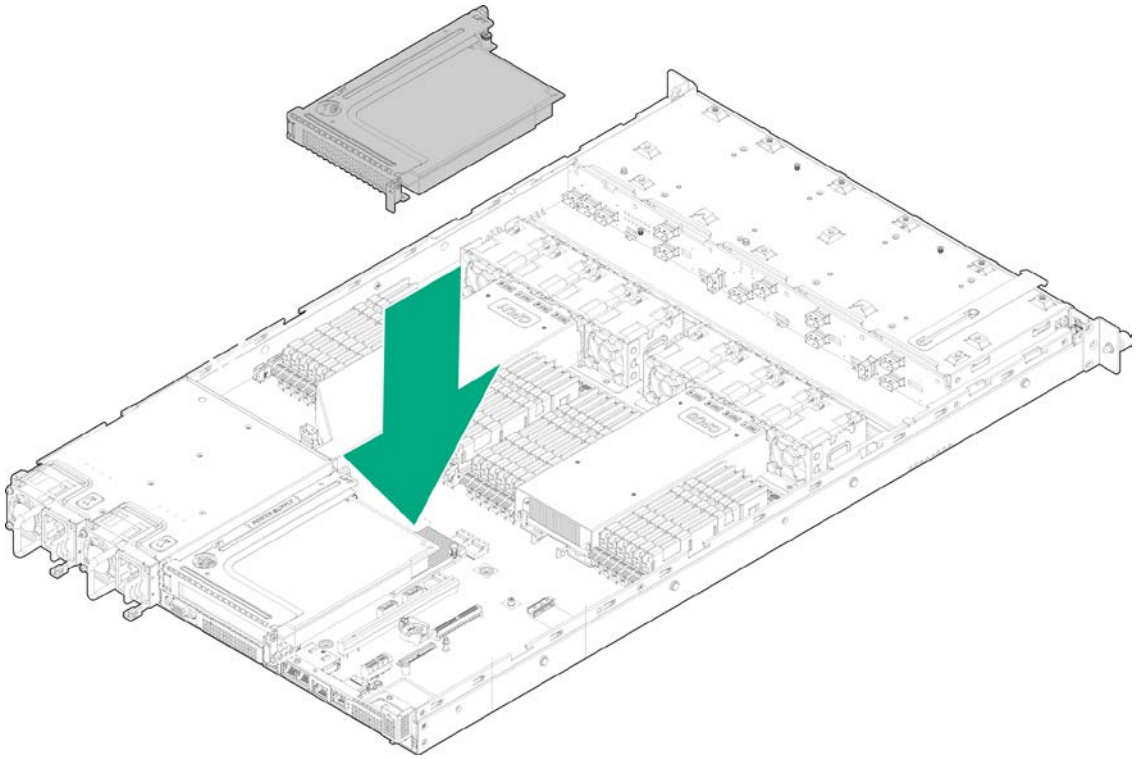
1. Power down the server (on page 19).
2. Disconnect all peripheral cables from the server.
3. Remove the rear access panel (on page 20).
4. Remove the left riser cage (on page 68).
5. Install the M.2 SSD into the M.2 card.



6. Secure the M.2 SSD to the M.2 card using a single screw.



7. Install the M.2 card into the riser cage (see page 69).
8. Install the riser cage with M.2 card into the system.



9. Secure the riser cage to the system using the thumbnail screws described in the Riser cage section on page 68.

To remove the component, reverse the installation procedure.

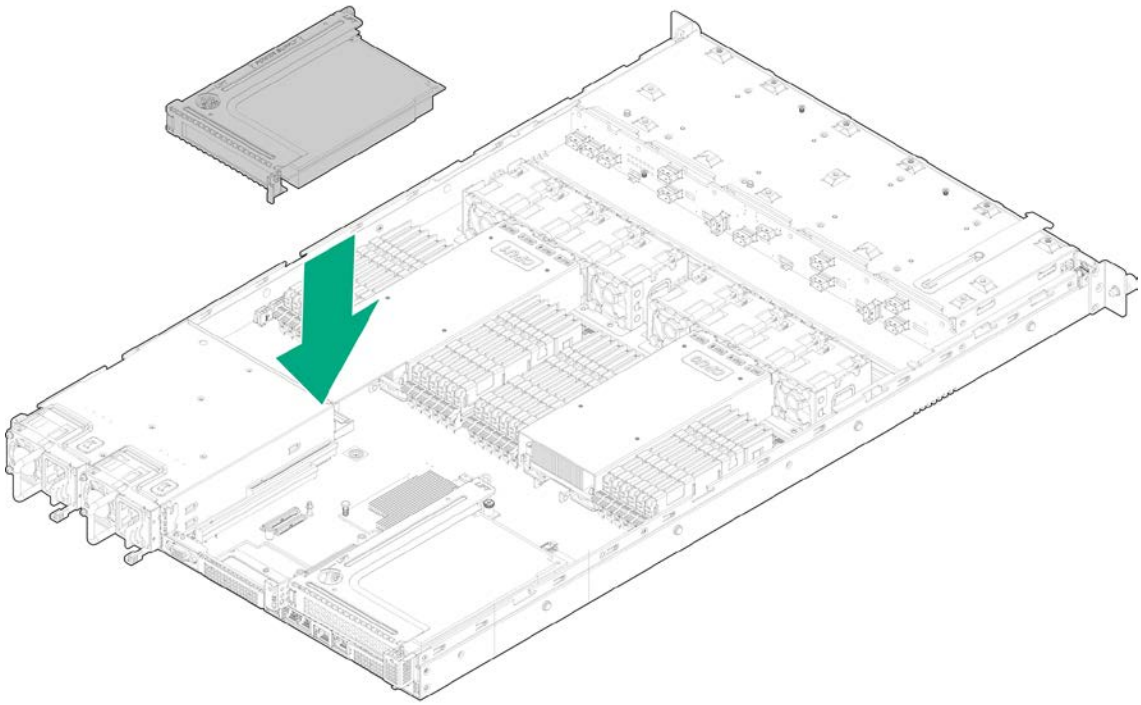
RAID controller super capacitator (optional)

WARNING: To reduce the risk of personal injury from hot surfaces, allow the drives and the internal system components to cool before touching them.

1. Power down the server (on page 19).
2. Disconnect all peripheral cables from the server.
3. Remove the rear access panel (on page 20).
4. Remove the center riser cage (on page 68).
5. Install the RAID controller super capacitator module on the card.
   a. Install the clip on the remote mount board.
   b. Align the 3 screws and secure the clip to the remote mount board using the 3 screws.
   c. Attach the CVPM05 module to the remote mount board by pressing the CVPM05 module into the clip on the remote mount board until the module clicks firmly into place.
   d. Connect the CVPM05 module to the MegaRAID adapter by connecting the module interface cable connector (the larger connector) into the Cachevault power module. Connect the board interface cable connector (the smaller connector) into the connector on the RAID adapter.

NOTE: For detailed installation instructions, please refer to the Broadcom website.

6. Install the card into the riser cage (on page 69).
7. Install the riser cage into the system.



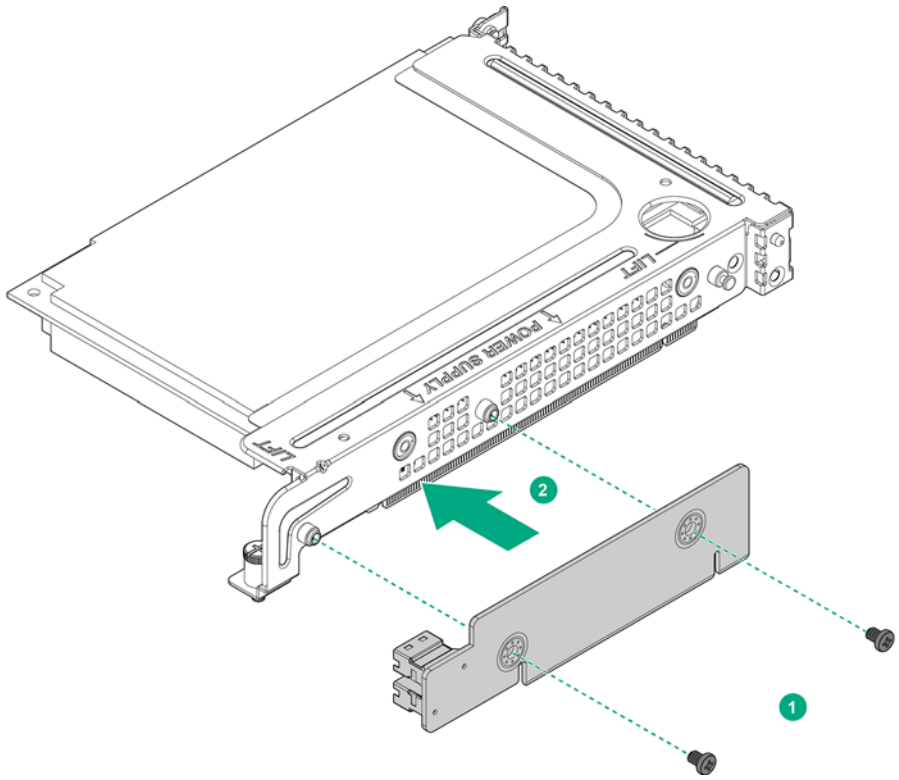
8. Secure the riser cage to the system using the thumbnail screws described in the Riser cage section on page 68.
9. Connect and route the RAID controller super capacitator card (on page 111).

To remove the component, reverse the installation procedure.

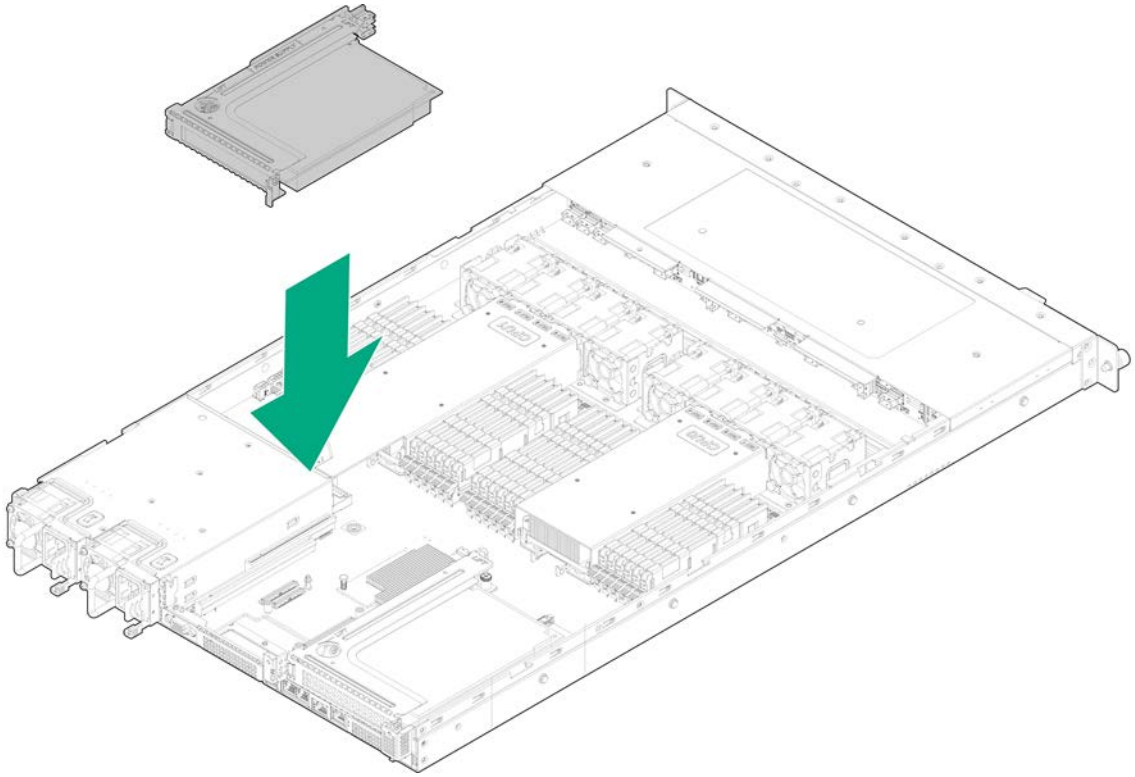
NVMe enablement FIO kit (optional)

WARNING: To reduce the risk of personal injury from hot surfaces, allow the drives and the internal system components to cool before touching them.

1. Power down the server (on page 19).
2. Disconnect all peripheral cables from the server.
3. Remove the rear access panel (on page 20).
4. Remove the center riser cage (on page 68).
5. Install the add-on card into the riser cage (on page 69).
6. Install the NVMe module onto the riser cage.



7. Install the riser cage into the system.



8. Secure the riser cage to the system using the thumbnail screws described in the Riser cage section on page 68.
9. Connect and route the NVMe cables (on page 110).

To remove the component, reverse the installation procedure.

Cabling

Cabling overview

This section provides guidelines to help make informed decisions about cabling the server and hardware options to optimize performance.

For information on cabling peripheral components, see the white paper on high-density deployment at the Hewlett Packard Enterprise website.

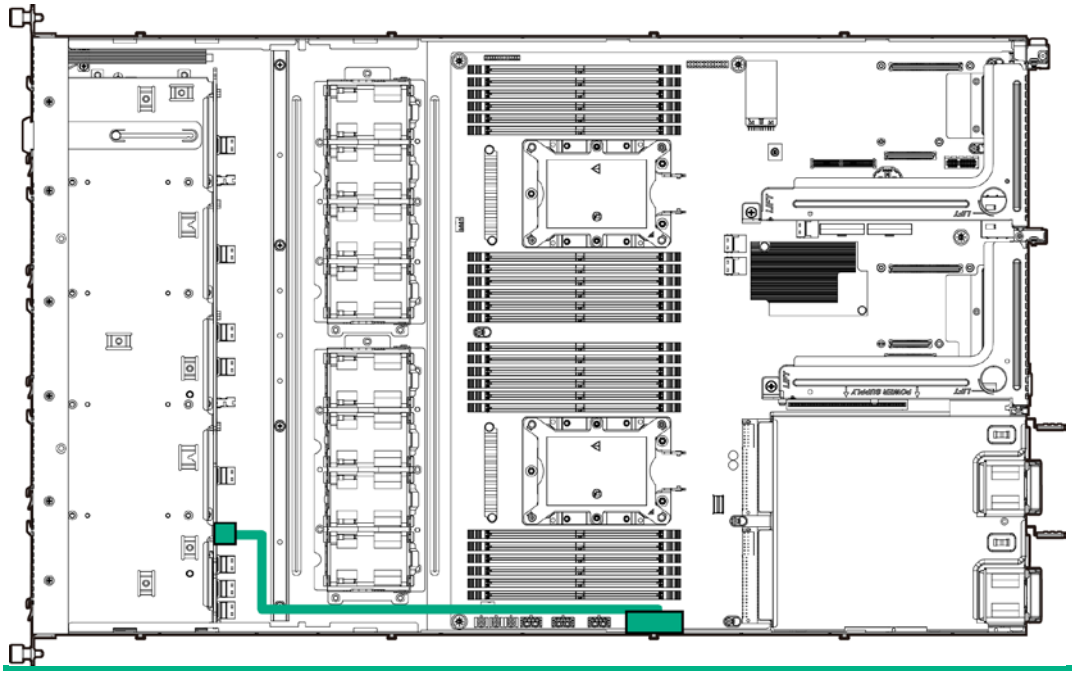
> △ **CAUTION:** When routing cables, always be sure that the cables are not in a position where they can be pinched or crimped.

To change cables:

1. Power down the server (on page 19).
2. Disconnect all peripheral cables from the server.
3. Remove the rear access panel (on page 20).
4. Remove the front access panel (on page 21).
5. Remove the fan duct (on page 67).

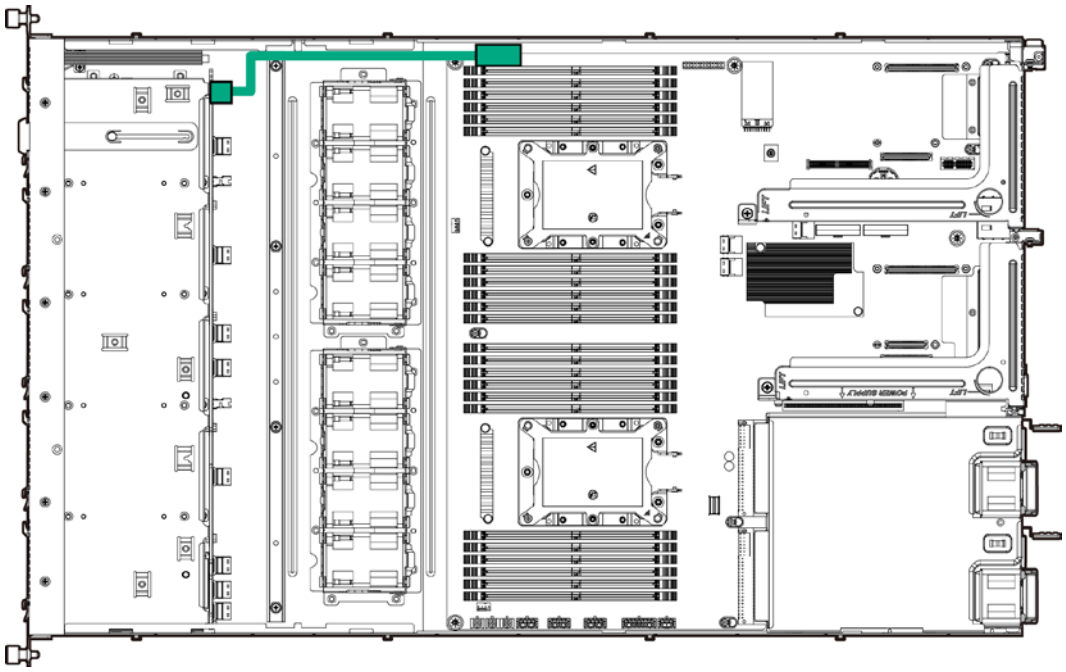
Storage Cabling

HDD Back Plane Board Power



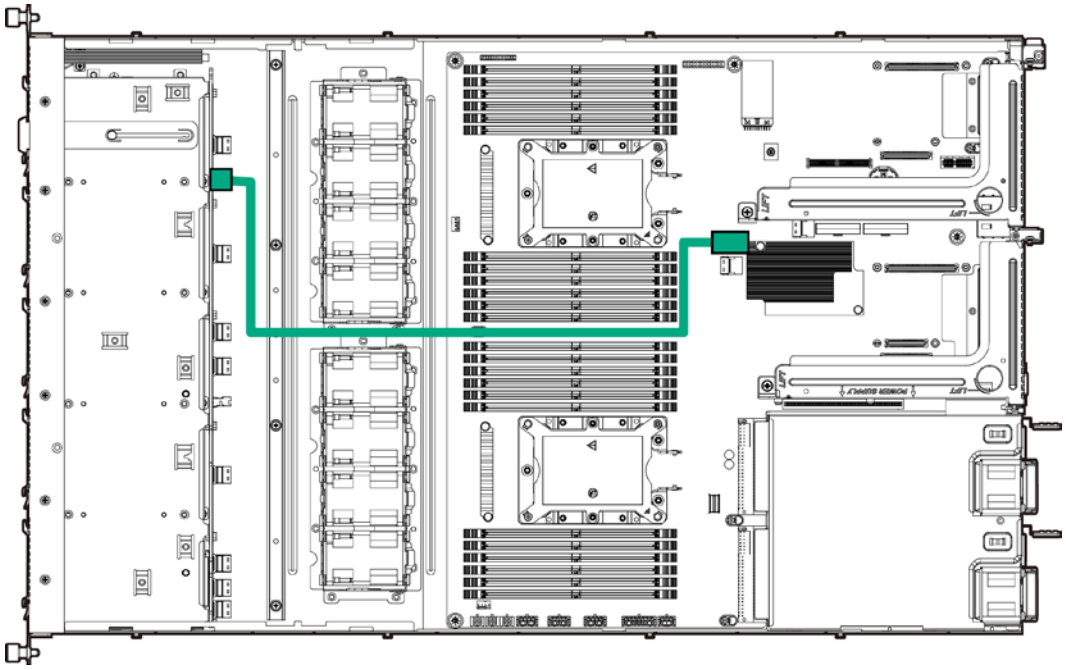
Description	Spare part number	M/B Location	BPB Location
Power and Signal Cable Kit	P02132-001	ATX1	ATX1

HDD Back Plane Board Signal



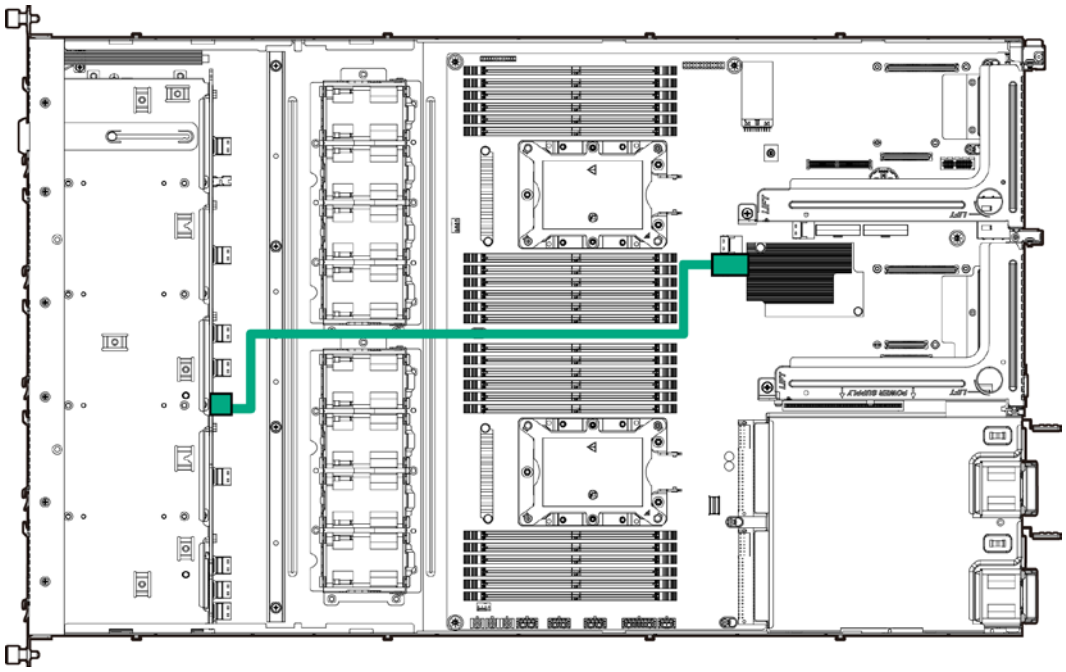
Description	Spare part number	M/B Location	BPB Location
Power and Signal Cable Kit	P02132-001	BP_1	BP_1

On-Board SATA0 to HDD Back Plane Board



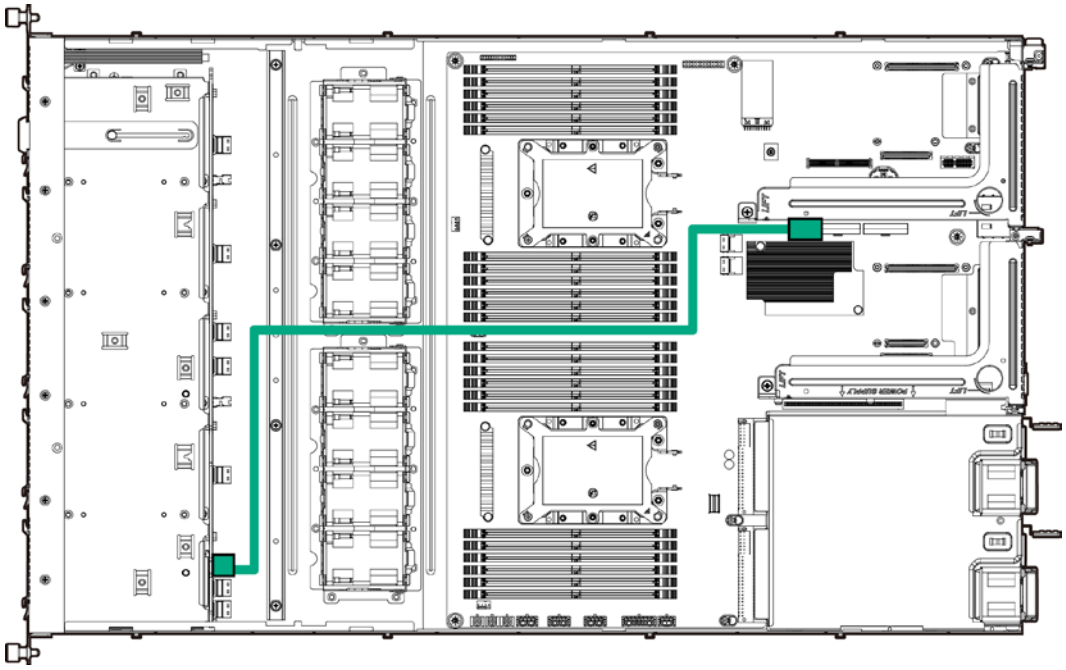
Description	Spare part number	M/B Location	BPB Location
Slimline Cable Kit	P02147-001	SATA0	SATA0

On-Board SATA1 to HDD Back Plane Board



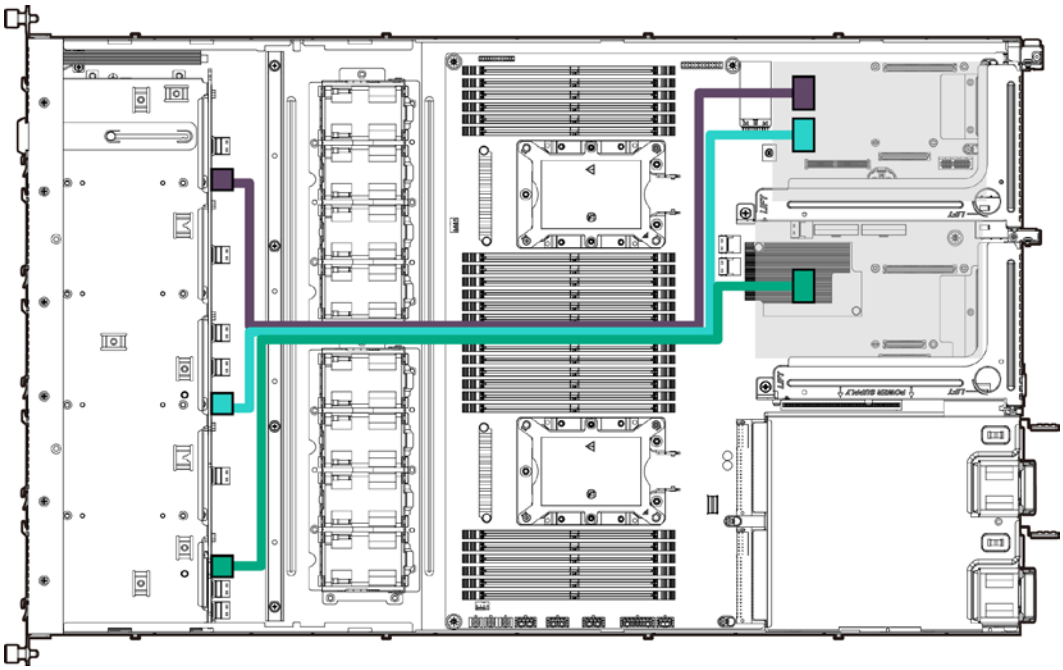
Description	Spare part number	M/B Location	BPB Location
Slimline Cable Kit	P02147-001	SATA1	SATA1

On-Board sSATA0 to HDD Back Plane Board



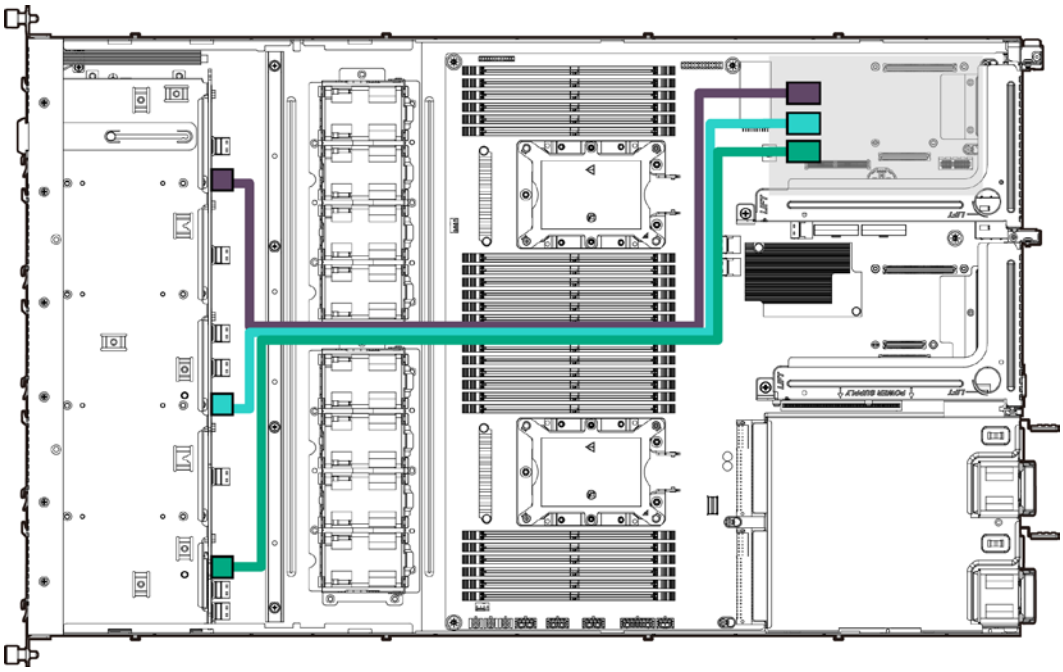
Description	Spare part number	M/B Location	BPB Location
Slimline Cable Kit	P02147-001	SSATA0	SATA2

Slimline SAS HD to Slimline 8i + 8i RAID Card



Description	Spare part number	Card Location	BPB Location
Slimline Cable Kit (Green)	P02147-001	C0	SAS2
Slimline Cable Kit (Turquoise)	P02147-001	C1	SAS1
Slimline Cable Kit (Purple)	P02147-001	C0	SAS0

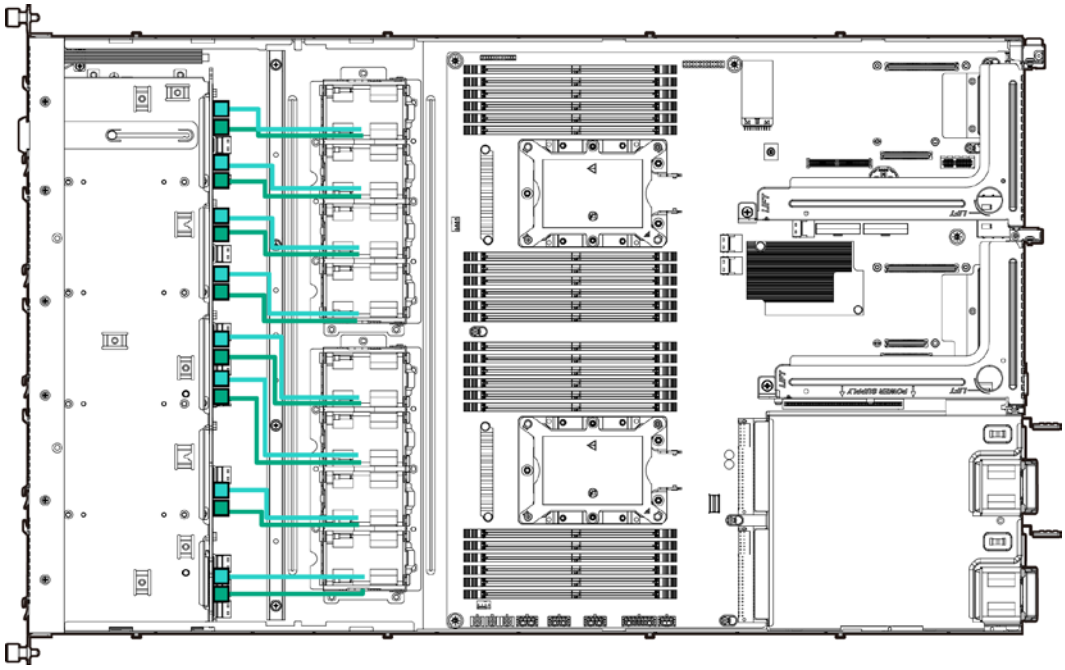
Slimline SAS HD to Slimline 16i RAID Card



Description	Spare part number	Card Location	BPB Location
Slimline Cable Kit (Green)	P02147-001	C2	SAS2
Slimline Cable Kit (Turquoise)	P02147-001	C1	SAS1
Slimline Cable Kit (Purple)	P02147-001	C0	SAS0

System

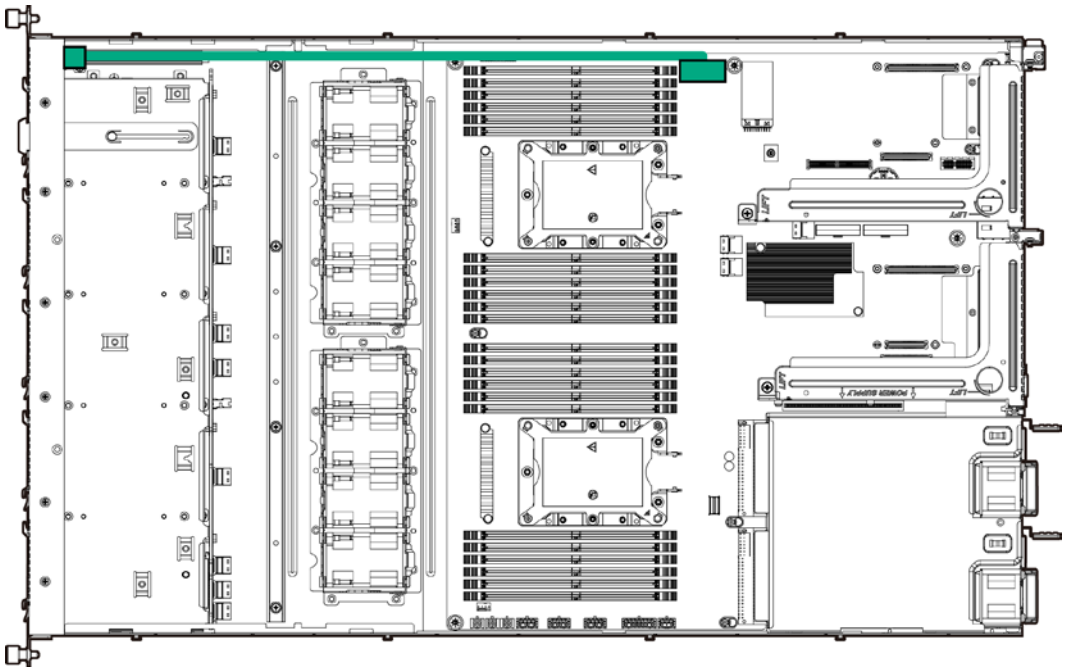
System Fans



Description	Spare part number	M/B Location	BPB Location
Fan	P02139-001	N/A	Green* → B connector Turquoise* → A connector

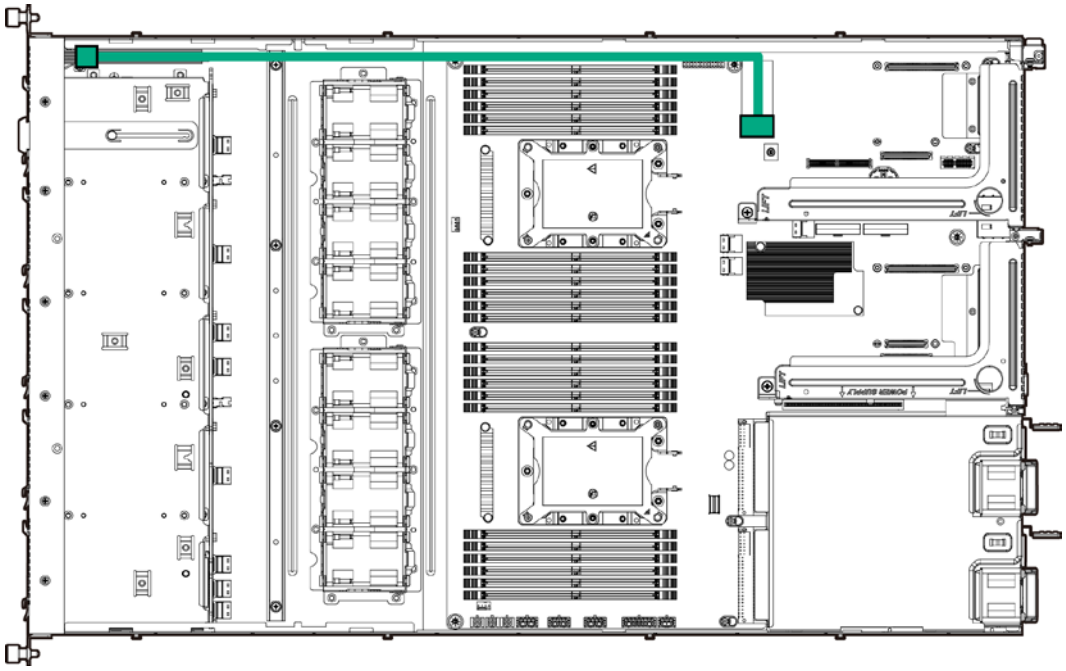
* The green line represents the white, orange, brown, and grey fan cable. The turquoise line represents the blue, yellow, red, and black fan cable.

Front Switch / Front LED



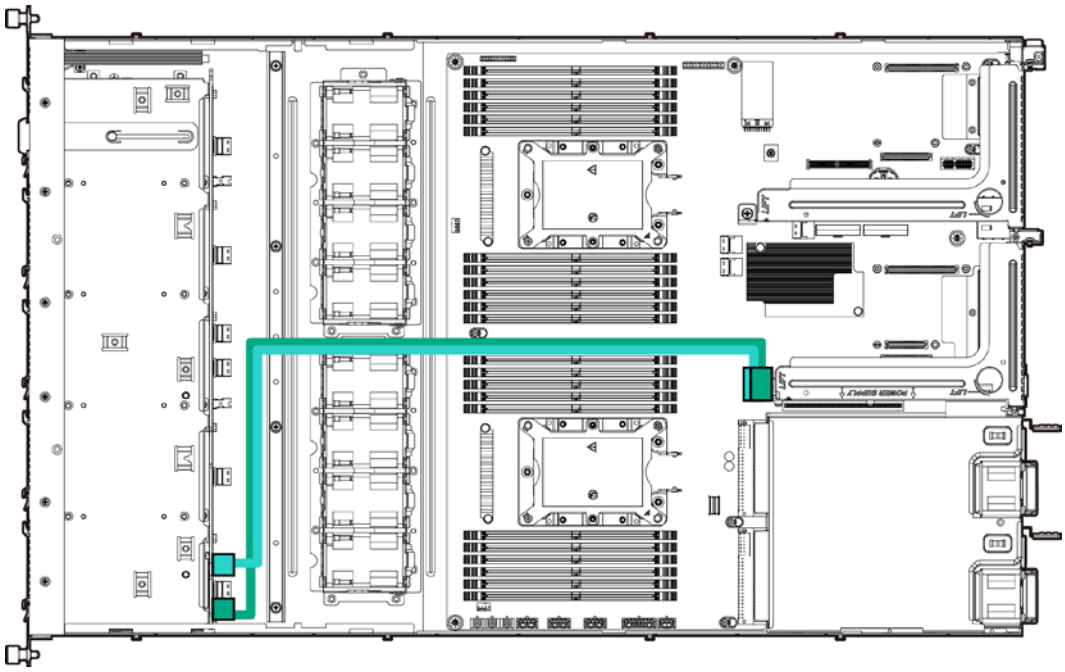
Description	Spare part number	M/B Location	FP Location
Front Panel and USB	P02136-001	FP_1	--

Front USB 3.0



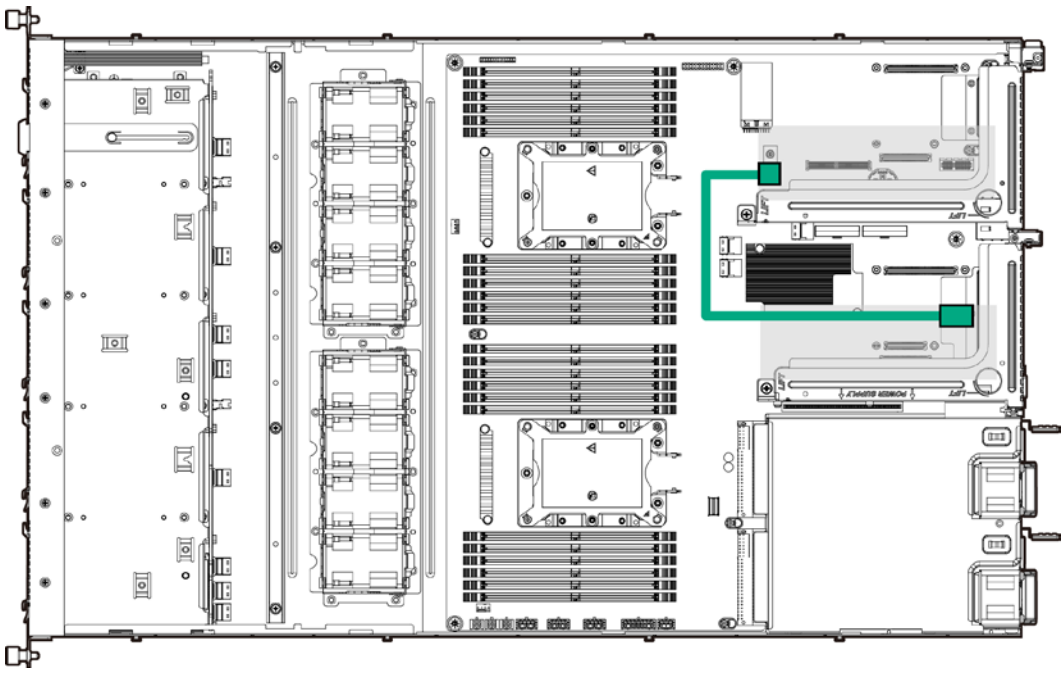
Description	Spare part number	M/B Location	FP Location
Front Panel and USB	P02136-001	FP_1	--

2-port NVMe enablement FIO kit (optional)



Description	Spare part number	Card Location	BPB Location
Slimline SAS 600mm cable (Green)	P02175-001	U.2A	U.2.8
Slimline SAS 600mm cable (Turquoise)	P02175-001	U.2B	U.2.9

RAID Controller Super Capacitor CVPM05 (Optional)



Description	Spare part number	Module Location	Board Location
RAID Controller Super Capacitor	P03112-001	BBU PW Connector	J14

Electrostatic discharge

Preventing electrostatic discharge

To prevent damaging the system, be aware of the precautions you must follow when setting up 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.

Grounding methods to prevent electrostatic discharge

Several methods are used for grounding. Use one or more of the following methods when handling or installing electrostatic-sensitive parts:

- Use a wrist strap connected by a ground cord to a grounded workstation or computer chassis. Wrist straps are flexible straps with a minimum of 1 megohm ±10 percent resistance in the ground cords. To provide proper ground, wear the strap snug against the skin.
- Use heel straps, toe straps, or boot straps at standing workstations. Wear the straps on both feet when standing on conductive floors or dissipating floor mats.
- Use conductive field service tools.
- Use a portable field service kit with a folding static-dissipating work mat.

If you do not have any of the suggested equipment for proper grounding, have an authorized reseller install the part.

For more information on static electricity or assistance with product installation, contact an authorized reseller.

Specifications

Environmental specifications

Specification	Value
Temperature range*	
Operating	10°C to 35°C (50°F to 95°F)
Non-Operating	-30°C to 60°C (-22°F to 140°F)
Relative humidity (noncondensing)**	
Operating	8% to 90%
Non-operating	5% to 95%

* All temperature ratings shown are for sea level. An altitude derating of 1°C per 305 m (1.8°F per 1,000 ft) to 3,050 m (10,000 ft) is applicable. No direct sunlight allowed. Maximum rate of change is 20°C/hr (36°F/hr). The upper limit and rate of change might be limited by the type and number of options installed.
** Storage maximum humidity of 95% is based on a maximum temperature of 38.7°C (101.7°F). Altitude maximum for storage corresponds to a pressure minimum of 70 KPa.
*** Maximum allowable altitude change rate is 305 m/min (1,000 ft/min).

NOTE: The upper operating temperature limit and rate of change may be limited by the type and number of options installed.
Maximum operating altitude may be limited by the type and number of options installed.

Server specifications

Specification	Value
Height	43.50 mm (1.71 in)
Depth	730.00 mm (28.74 in)
Width	438.00 mm (17.24 in)
Weight	Maximum: Minimum: 13.04 kg (28.72 lbs)

Support and other resources

Open Source Software

This product includes code licensed under the GNU GENERAL PUBLIC LICENSE, GNU LESSER GENERAL PUBLIC LICENSE, and/or certain other open source licenses. A complete machine-readable copy of the source code corresponding to such code is available upon request. This offer is valid to anyone in receipt of this information and shall expire three years following the date of the final distribution of this product version by Hewlett Packard Enterprise. For information about acquiring the open source code for this product, send an email to the Account Manager for this product, listing the product name and version information for which the source code is being requested. Because such information can become outdated quickly, Hewlett Packard Enterprise does not publish mailing addresses and telephone numbers for open source queries. Available source code distribution methods include network transmission of the source code and sending the source code on physical media to a mailing address. Physical media distribution might require a fee to cover the media and mailing costs.

Accessing Hewlett Packard Enterprise Support

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

  http://www.hpe.com/assistance
- To access documentation and support services, go to the Hewlett Packard Enterprise Support Center website:

  http://www.hpe.com/support/hpesc

Information to collect

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

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 subscribe to eNewsletters and alerts:

  http://www.hpe.com/support/e-updates

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

> **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.

Customer Self Repair

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

For more information about CSR, contact your local service provider or go to the CSR website: **http://www.hpe.com/support/selfrepair**

HPE Cloudline Support Services

HPE Packaged Support Services

Created for service providers, HPE Cloudline Support Services are a selection of hardware support features designed to help keep your IT staff focused on your business, not on repair and maintenance activities.

For eligible products, you can utilize Hewlett Packard Enterprise technical resources to provide remote diagnosis and support, scheduled onsite hardware repair/troubleshooting, or coverage for replacement components, including defective media retention (DMR). With HPE Cloudline Support Services, you can purchase the services that meet your specific needs.

Service benefits

- Choice of service packages
- Access to expert Hewlett Packard Enterprise technical resources to help expedite problem resolution
- Delivery of the service at a mutually scheduled time convenient to your organization

Service feature highlights

- Remote problem diagnosis and support
- Optional service feature: Scheduled onsite hardware repair
- Optional service feature: Replacement parts and materials

For more information, see the Hewlett Packard Enterprise website

Warranty information

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

www.hpe.com/support/cloudline_warranty_en

Regulatory information

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

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

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

Kazakhstan:

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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

Kazakhstan:

ЖШС «Хьюлетт-Паккард (К)», Қазақстан Республикасы, 050040, Алматы к., Бостандык ауданы, Әл-Фараби даңғ ылы, 77/7, Телефон/факс: +7 727 355 35 50

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

Documentation feedback

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