HPE ProLiant DL360p Gen8 Server - Parts Support Guide

Part Number: External
Published: 2020
Edition: 1

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Abstract
This document will help you identify parts of the product and also gives a step-by-step instruction on how to remove and replace the components.

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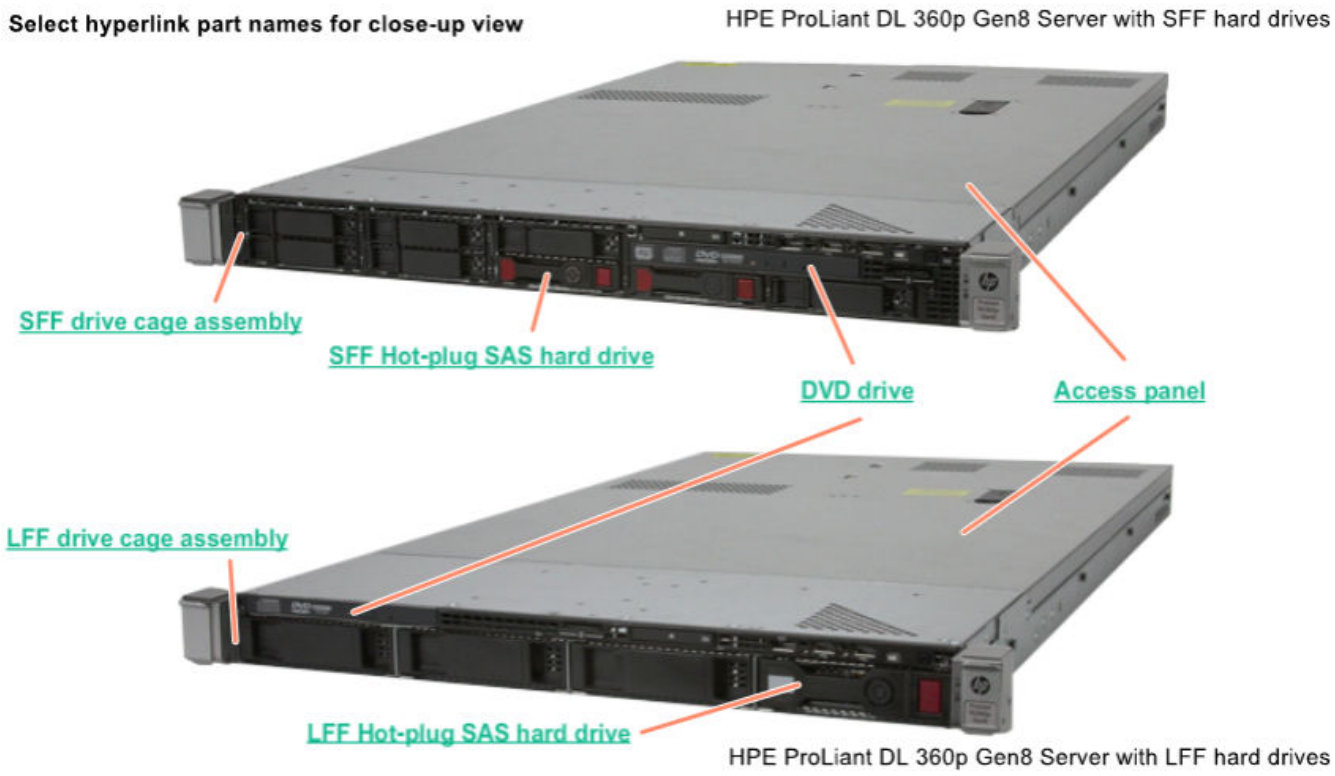
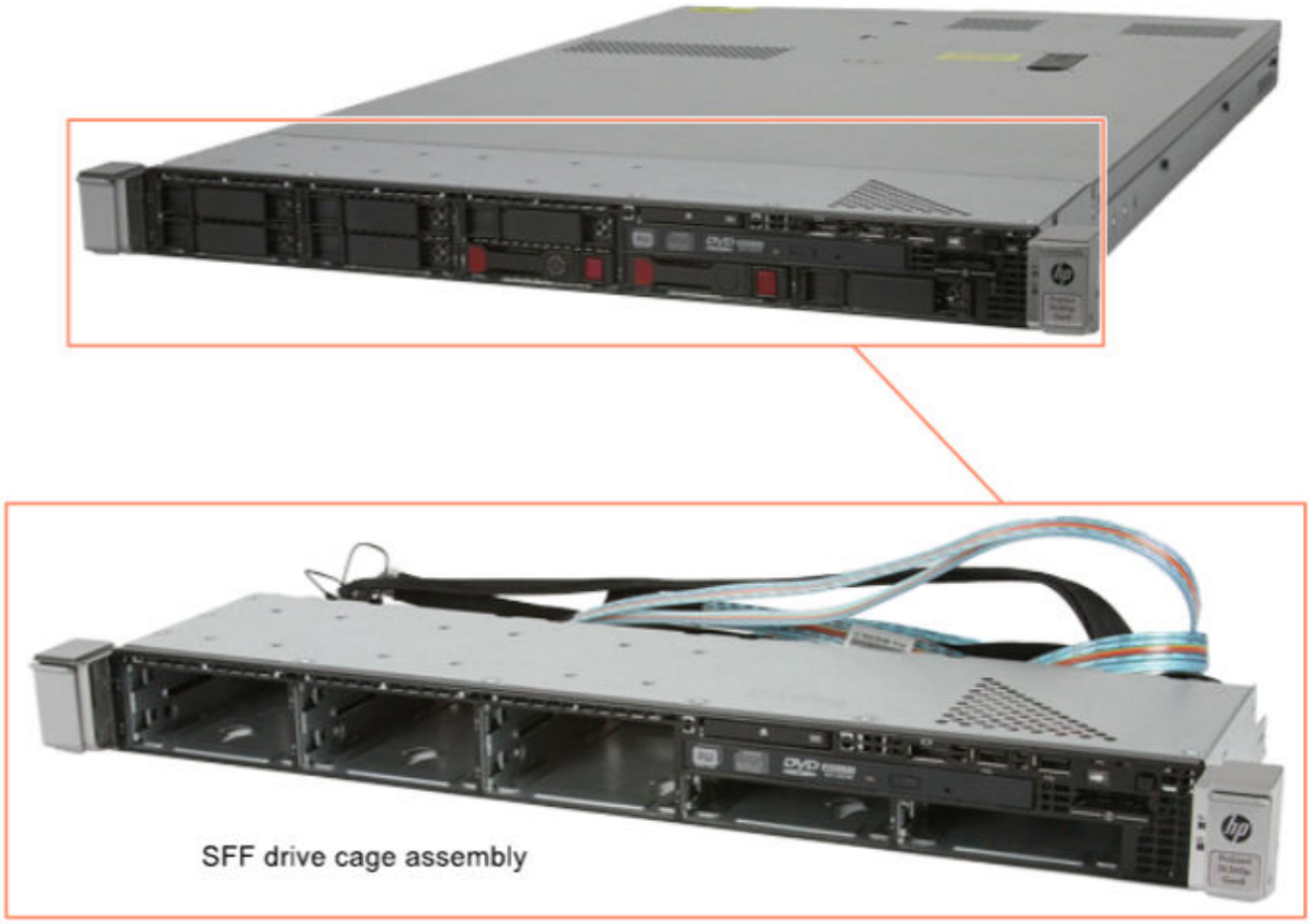
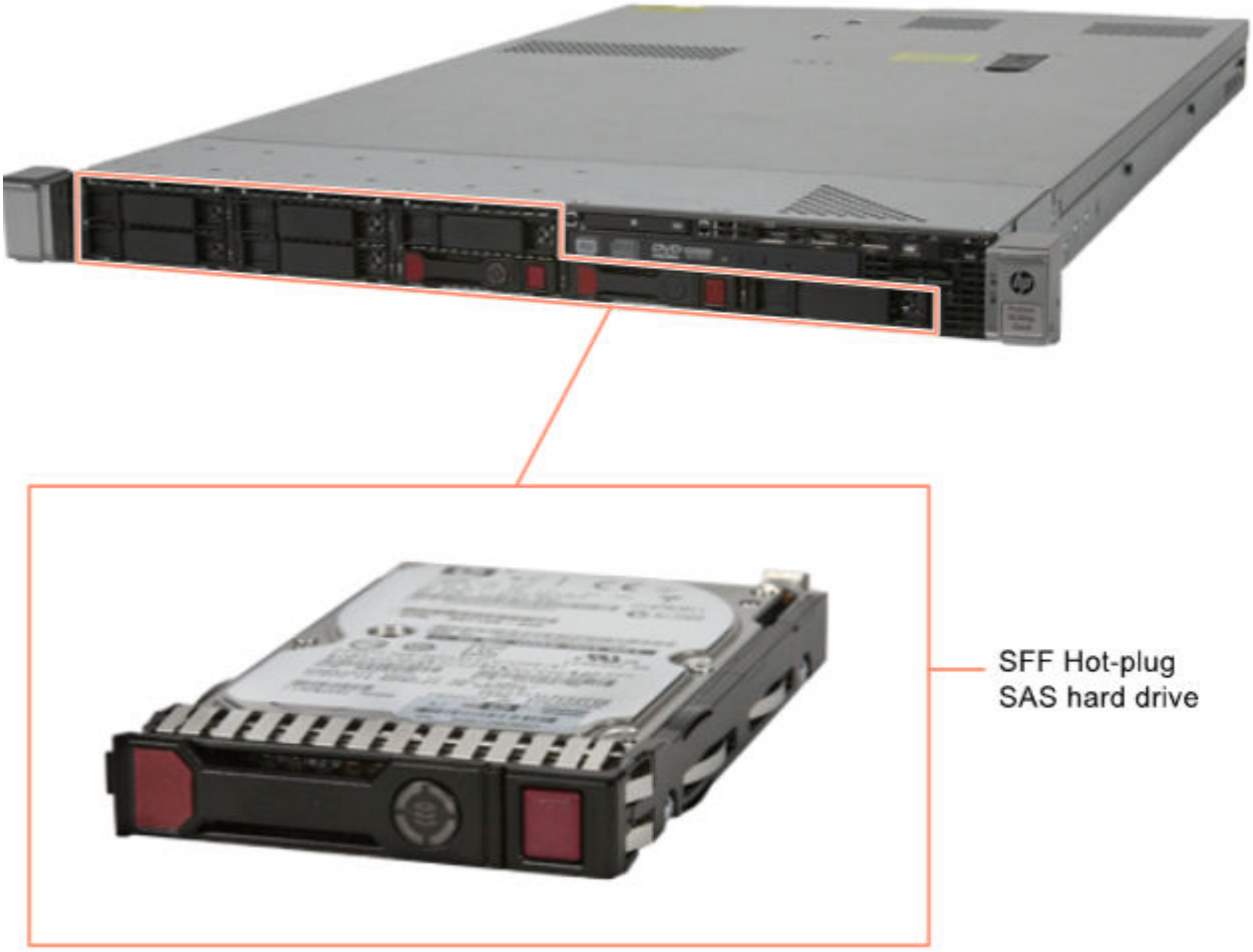
Front view



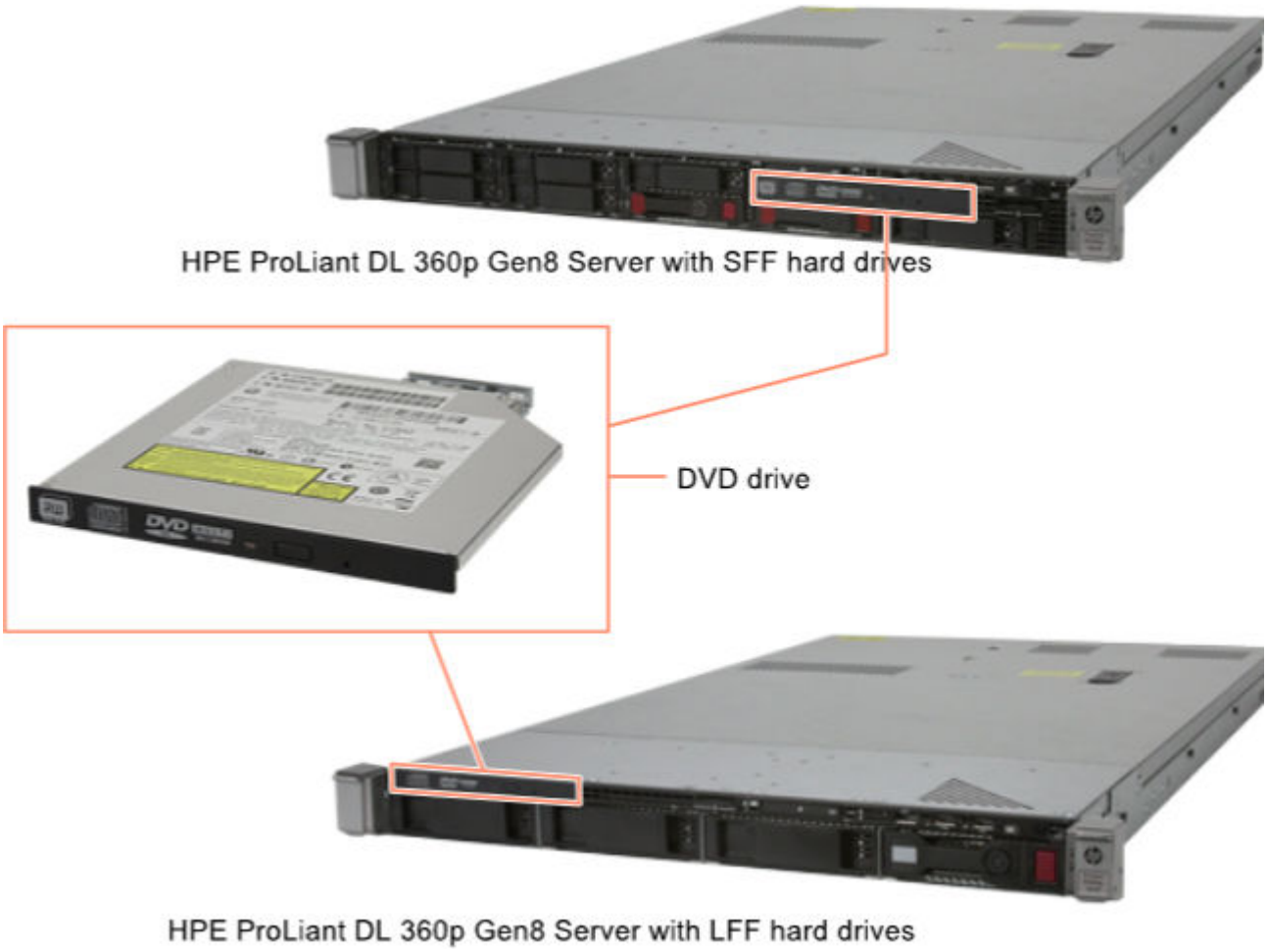
SFF Drive cage assembly



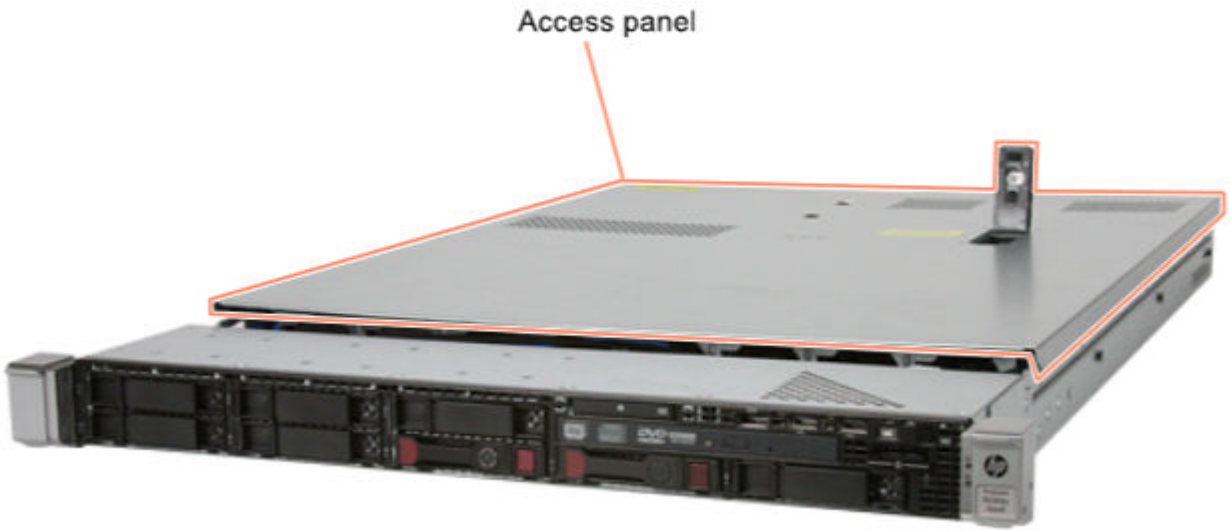
SFF Hot-plug SAS hard drive



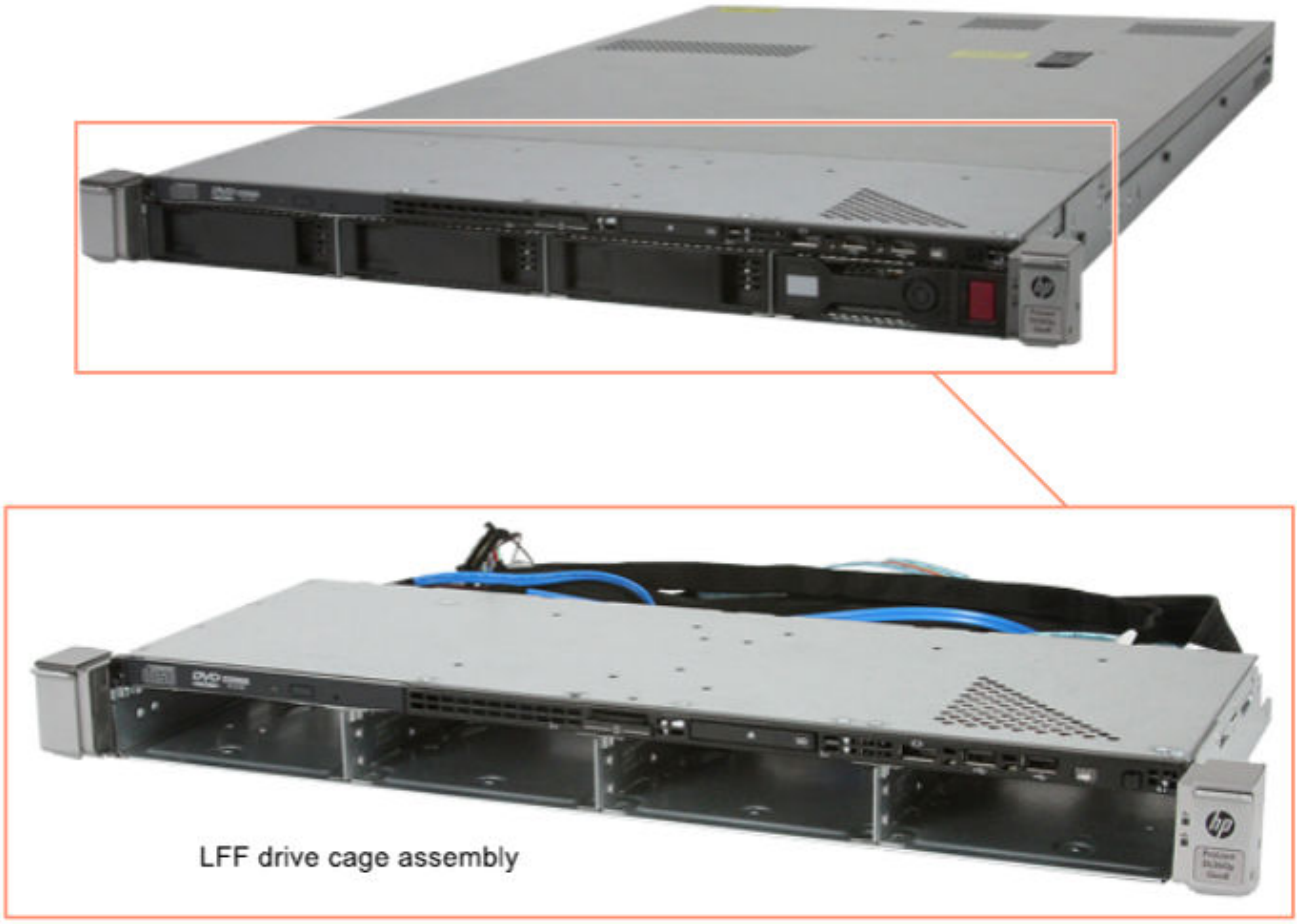
DVD Drive



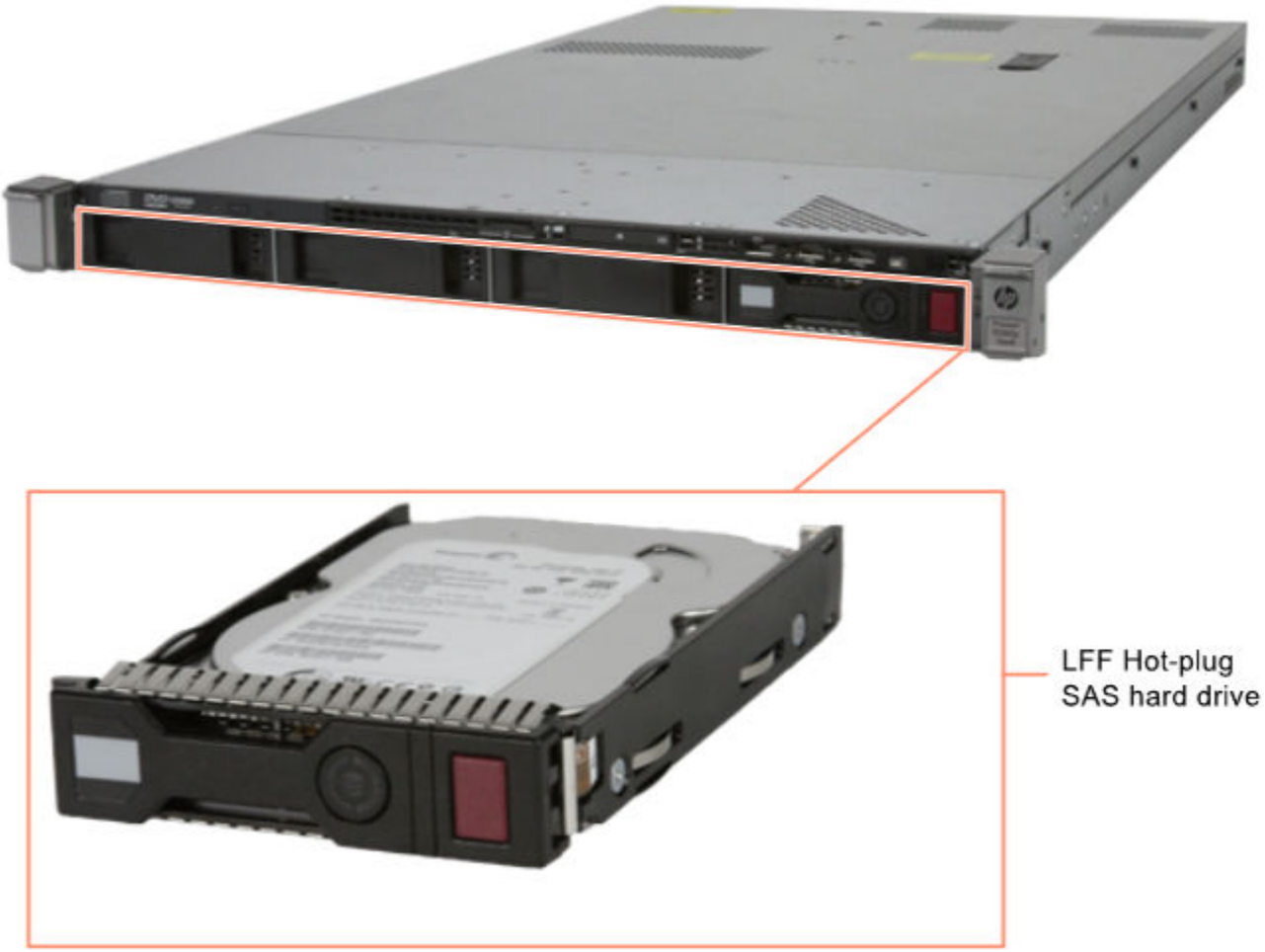
Access panel



LFF Drive cage assembly



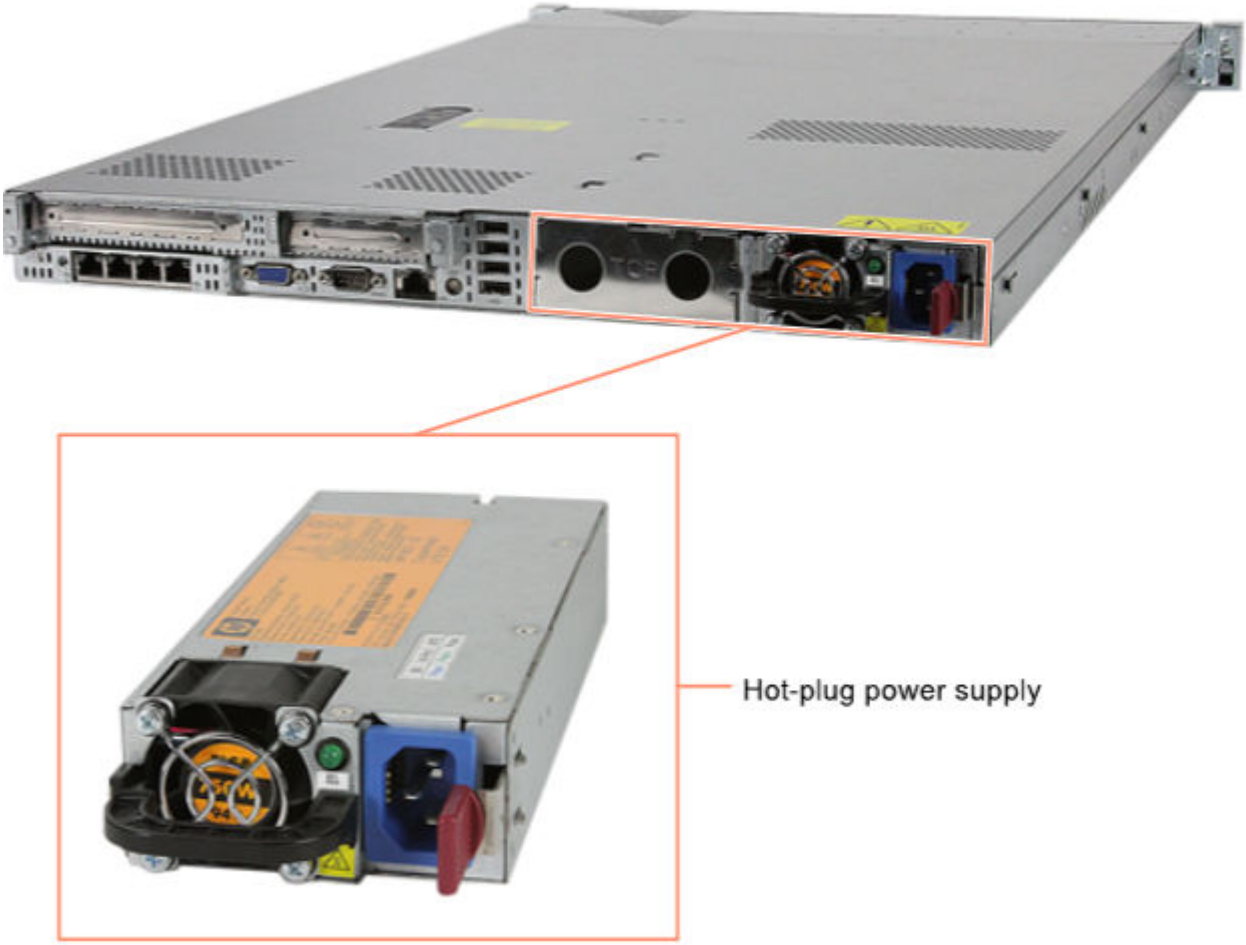
LFF Hot-plug SAS hard drive



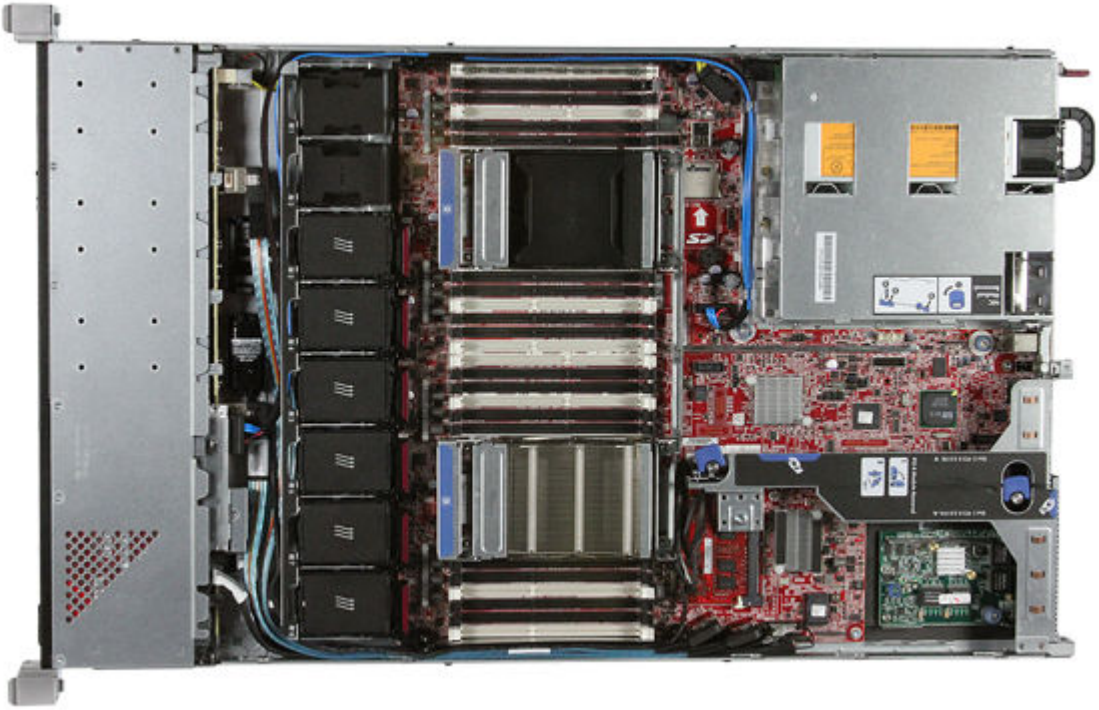
Back view



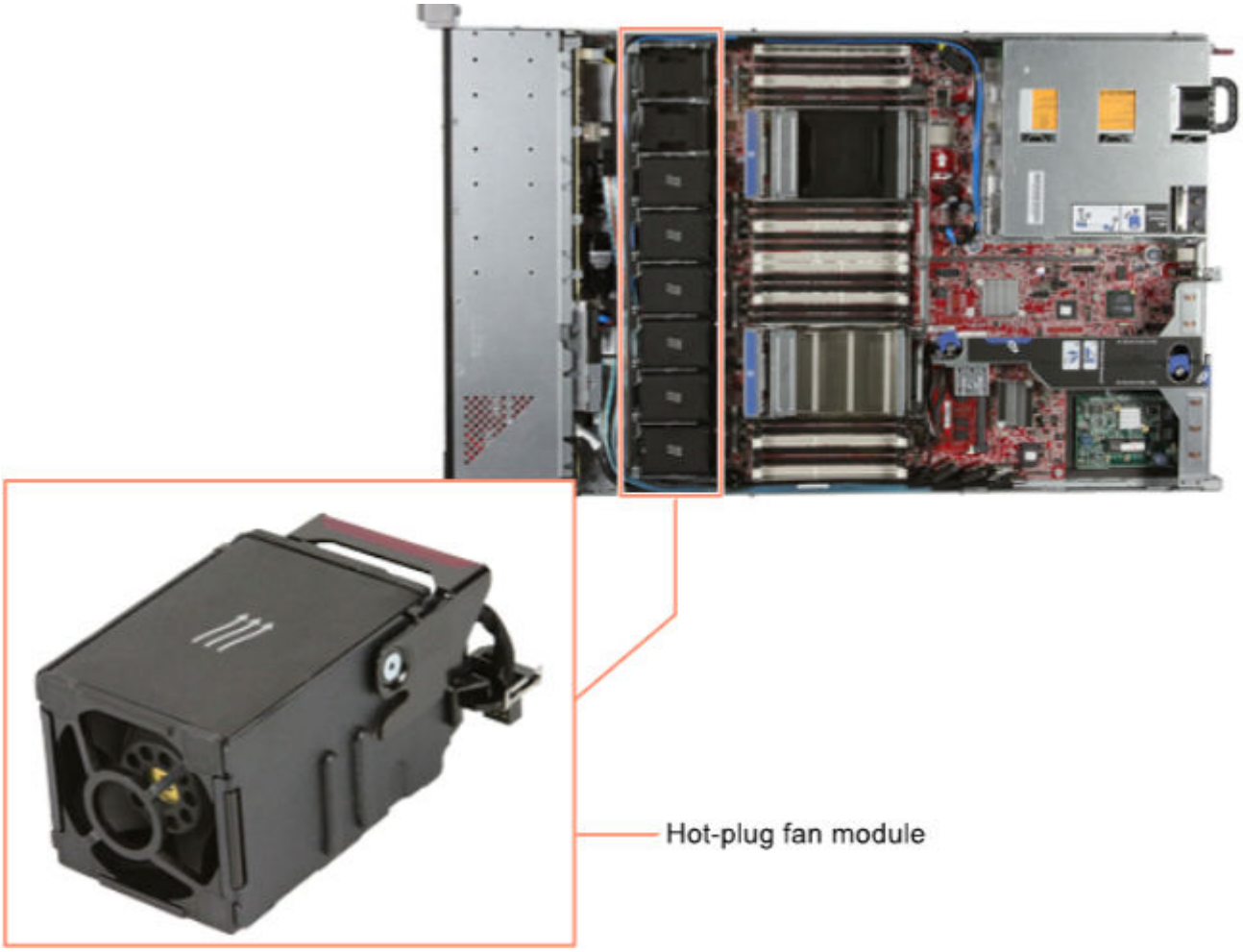
Power supply



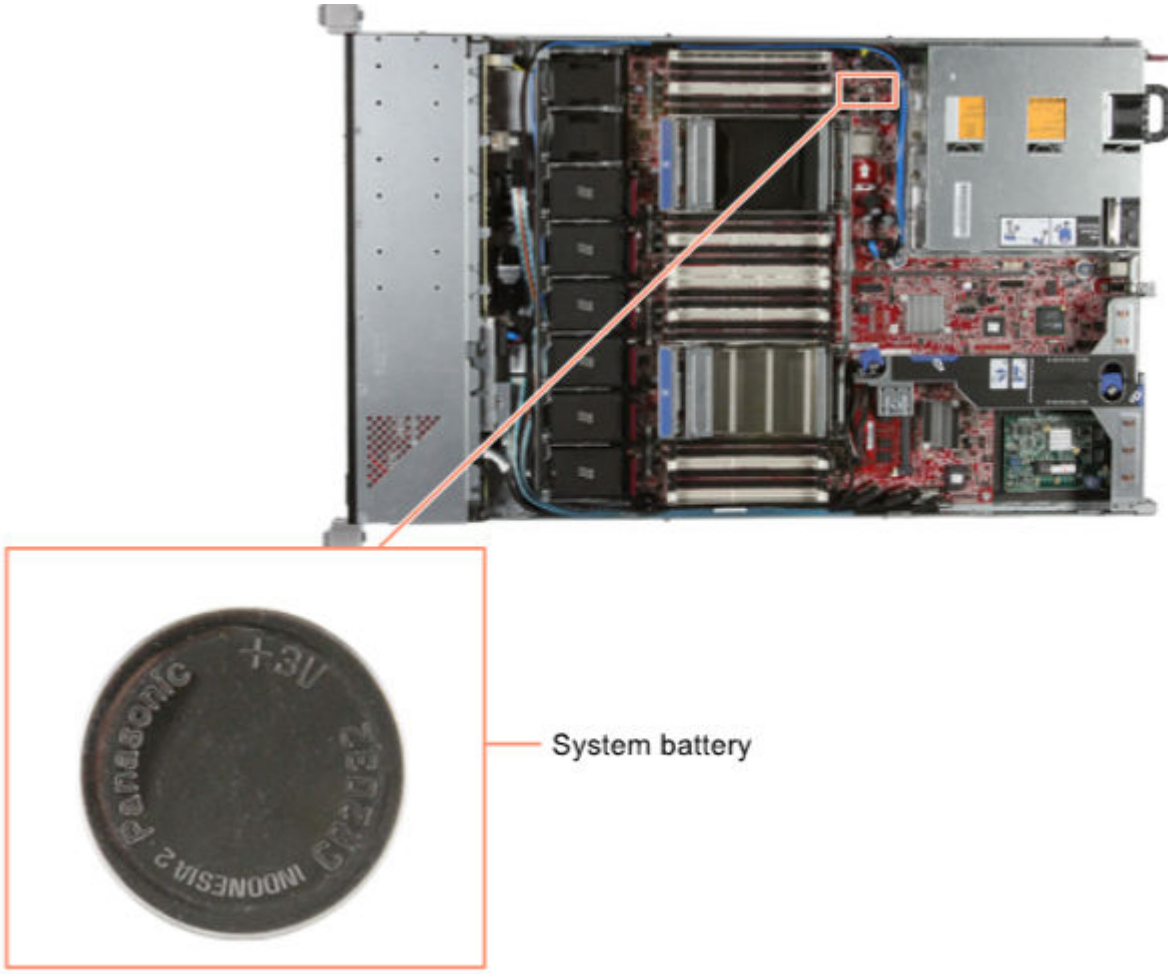
Internal view



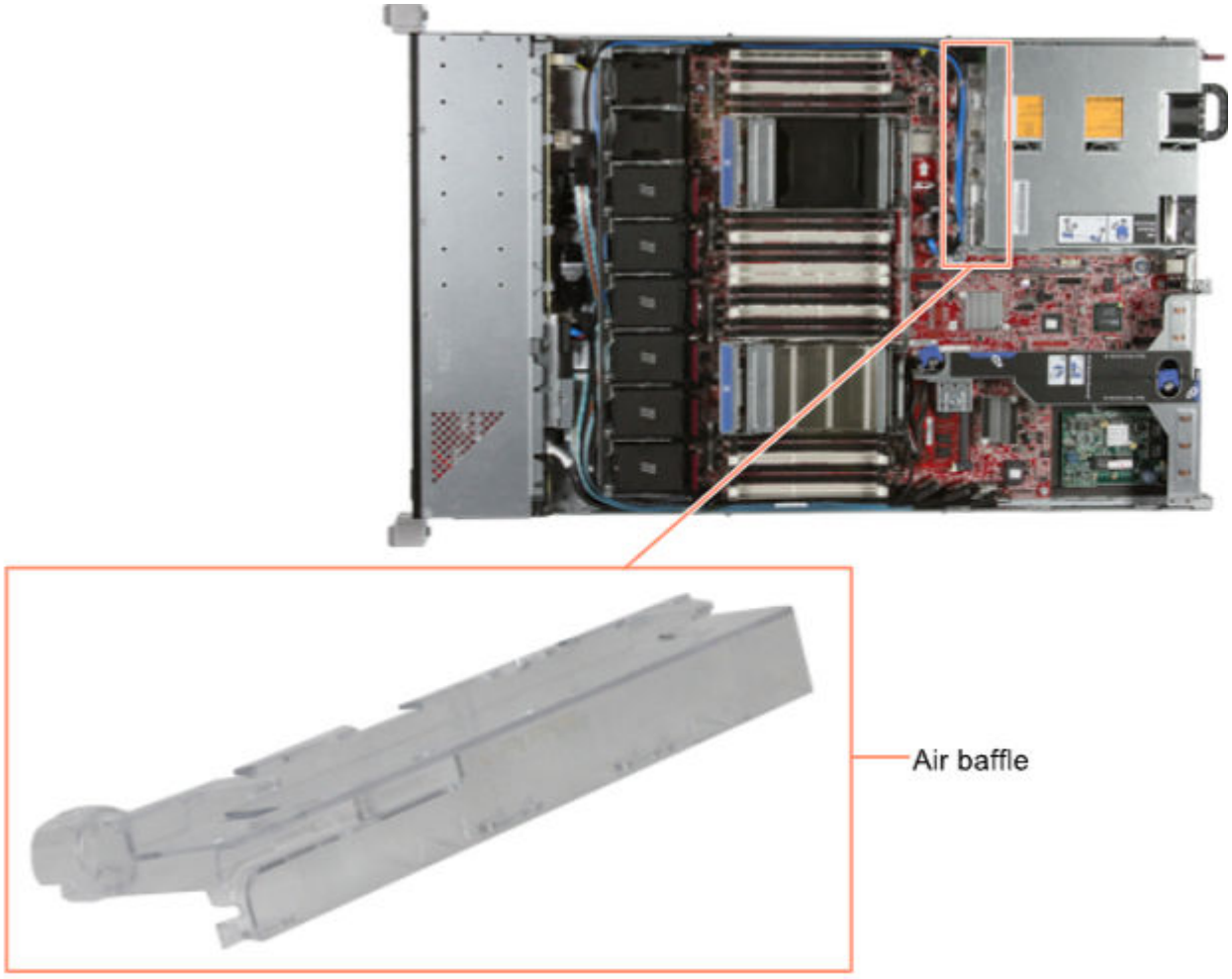
Hot-plug fan module



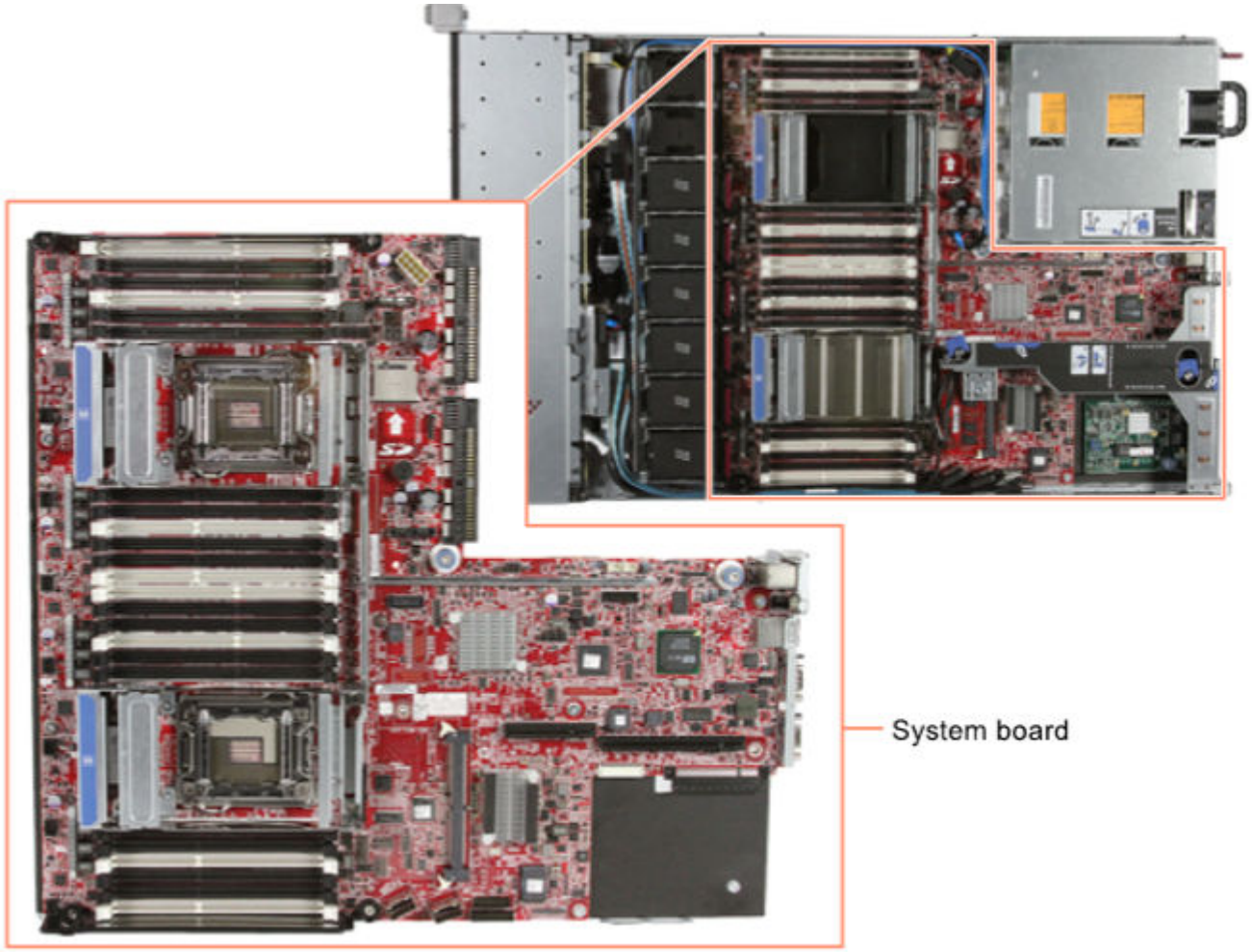
System battery



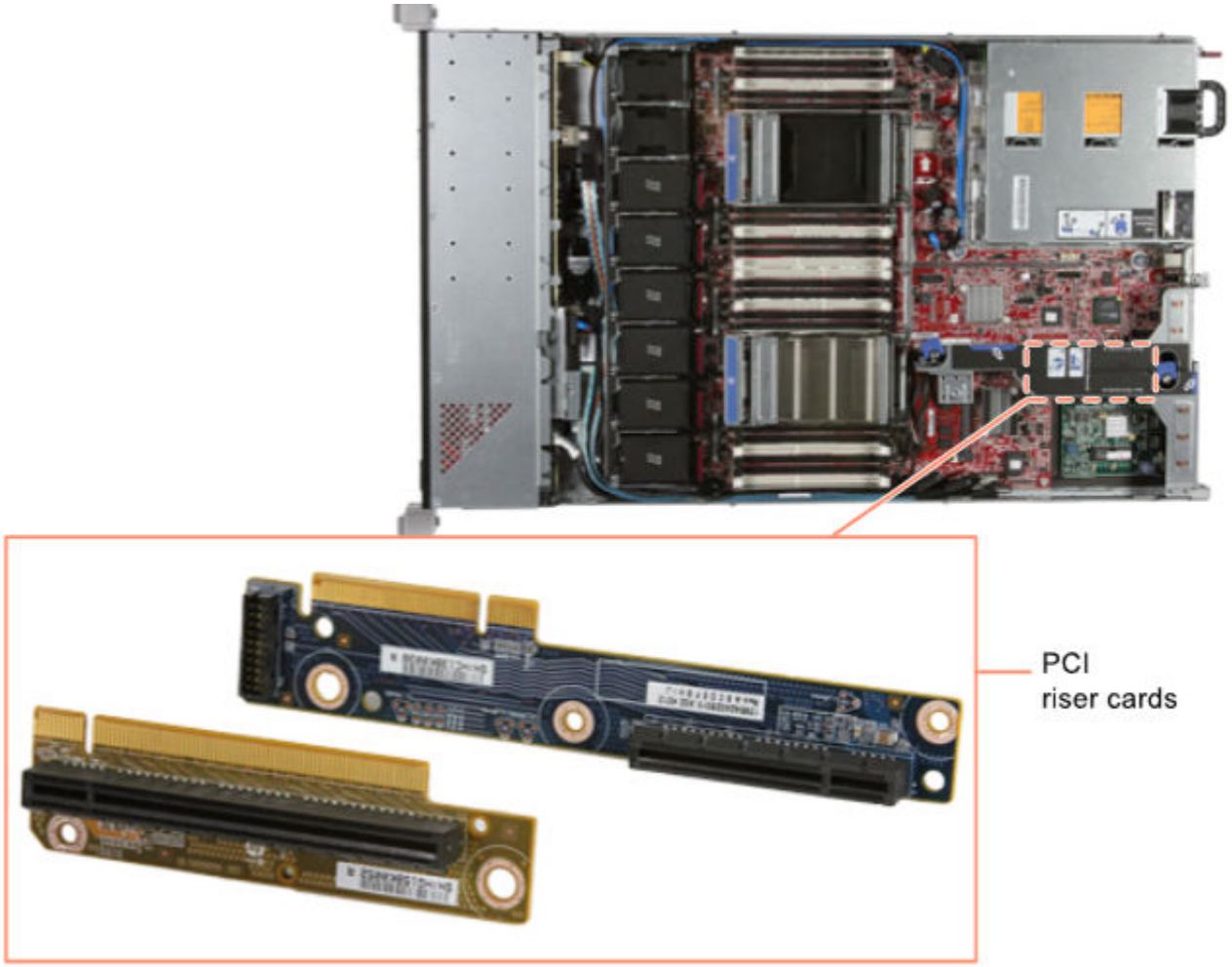
Air baffle



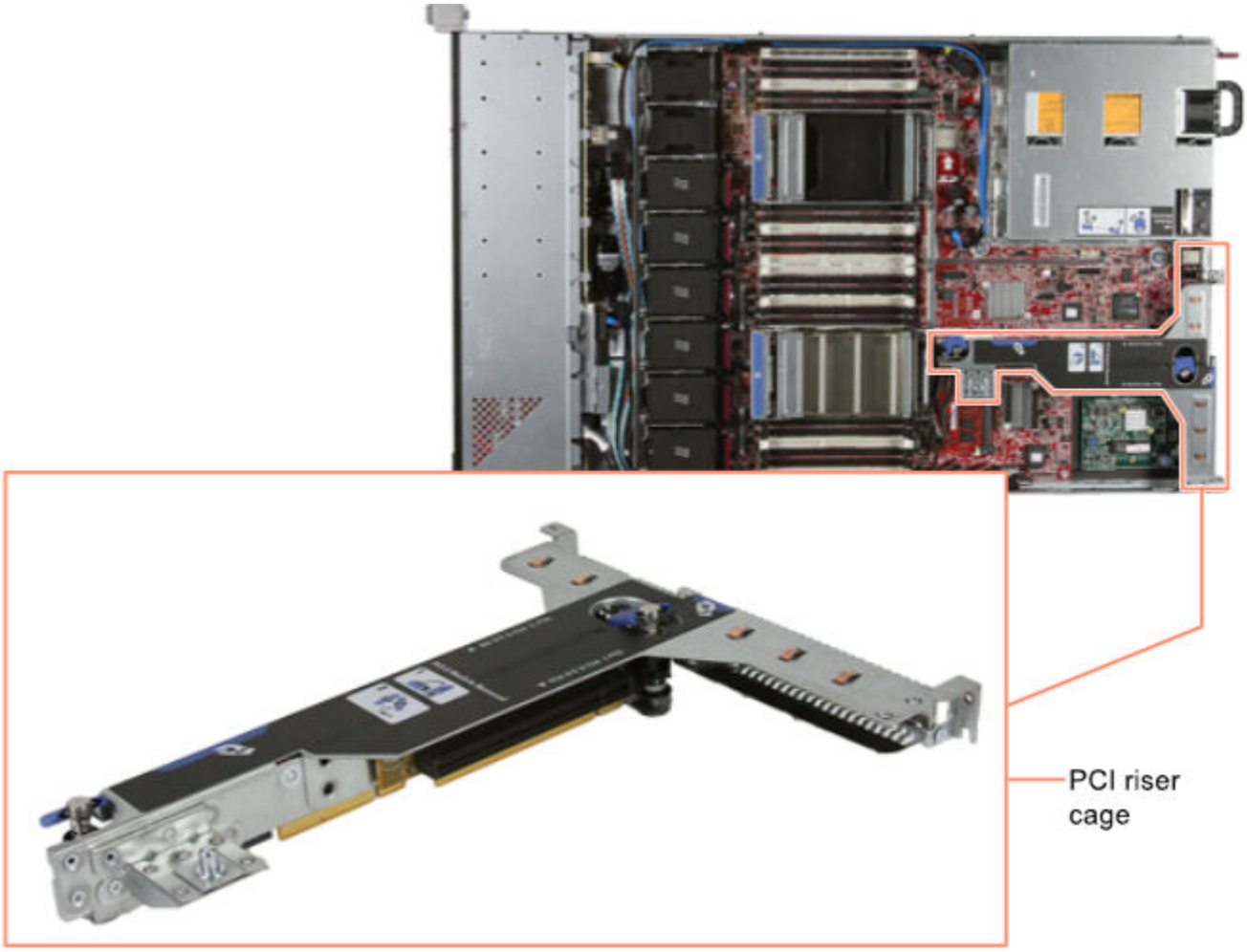
System board



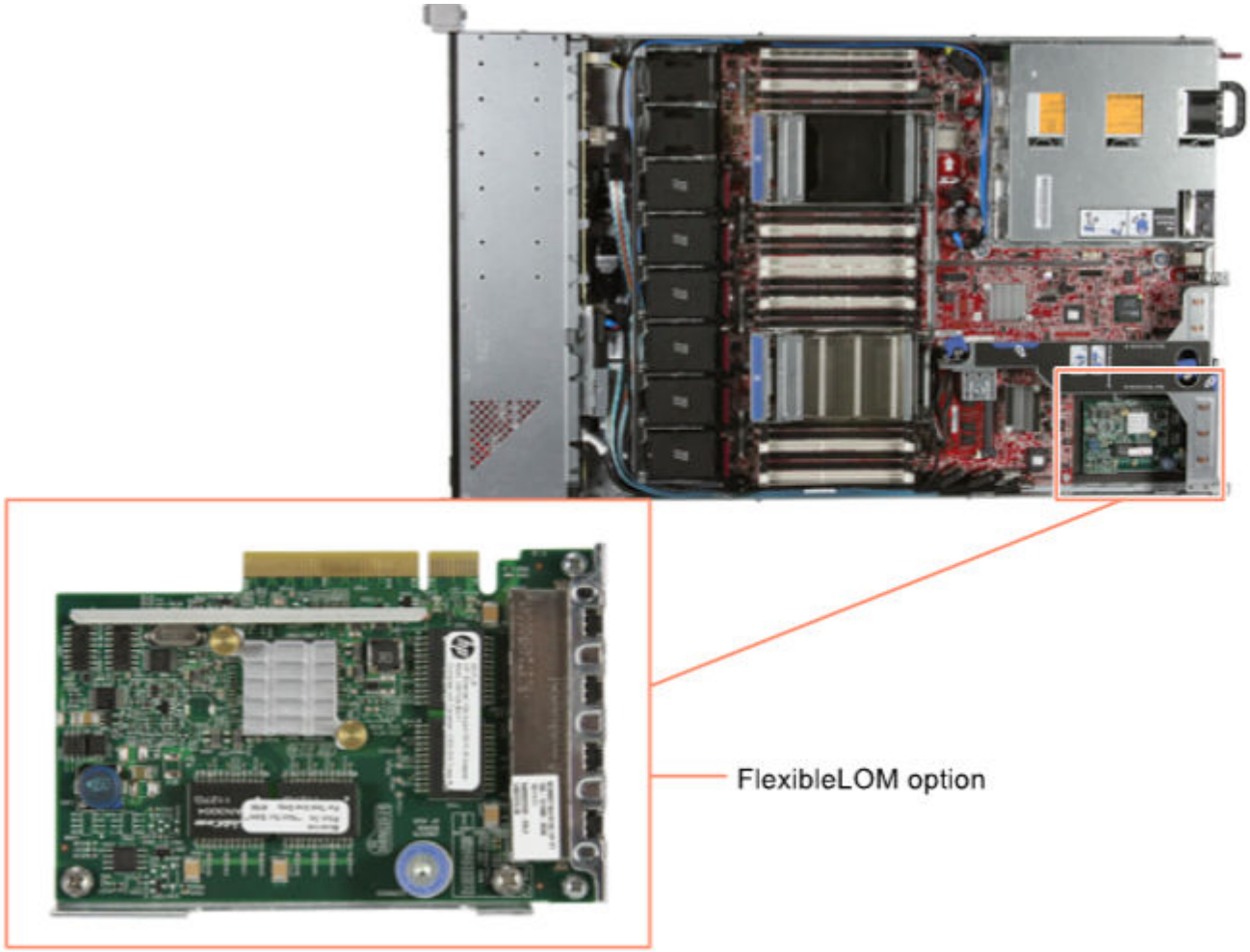
PCI-e Riser cards



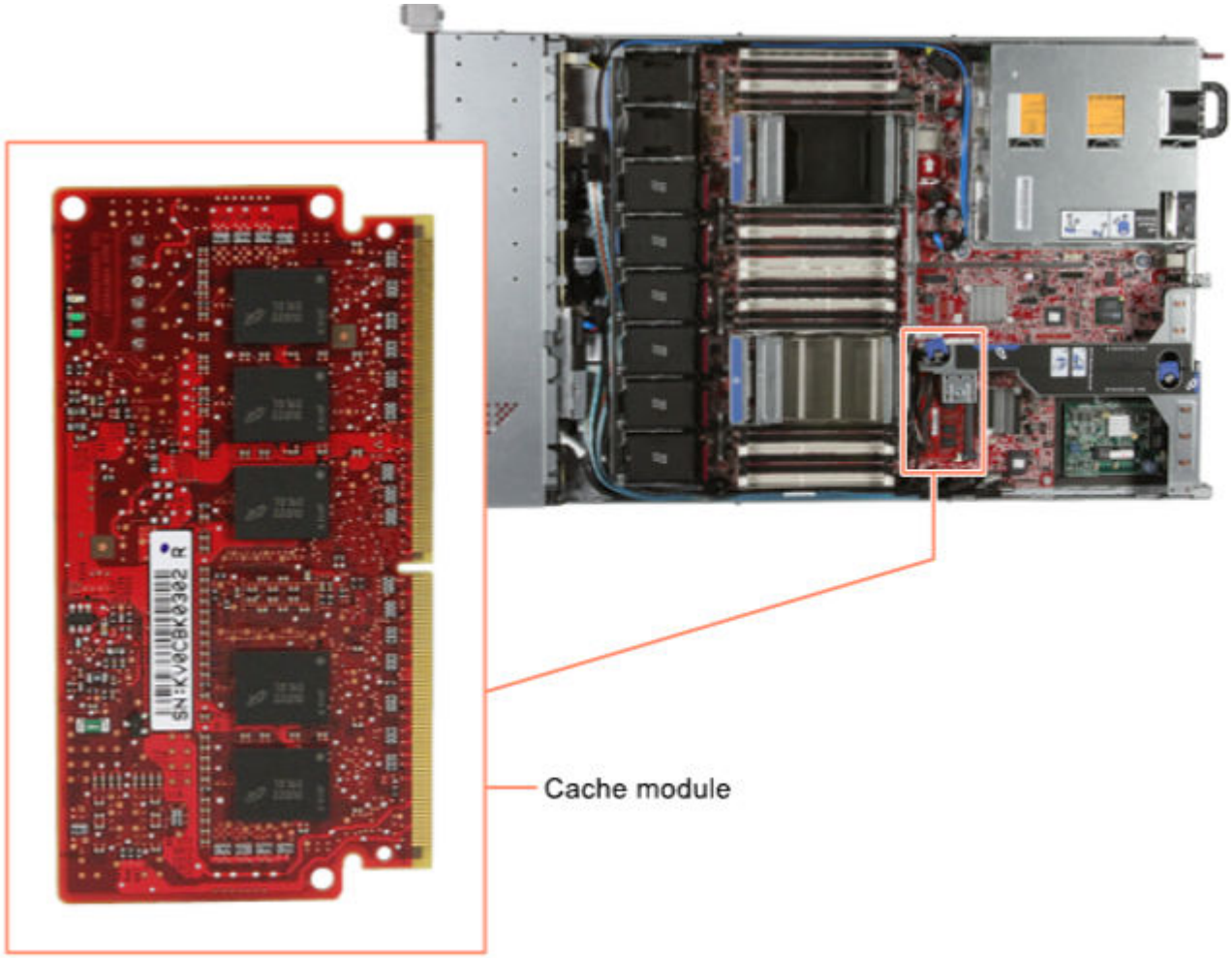
PCI Riser cage



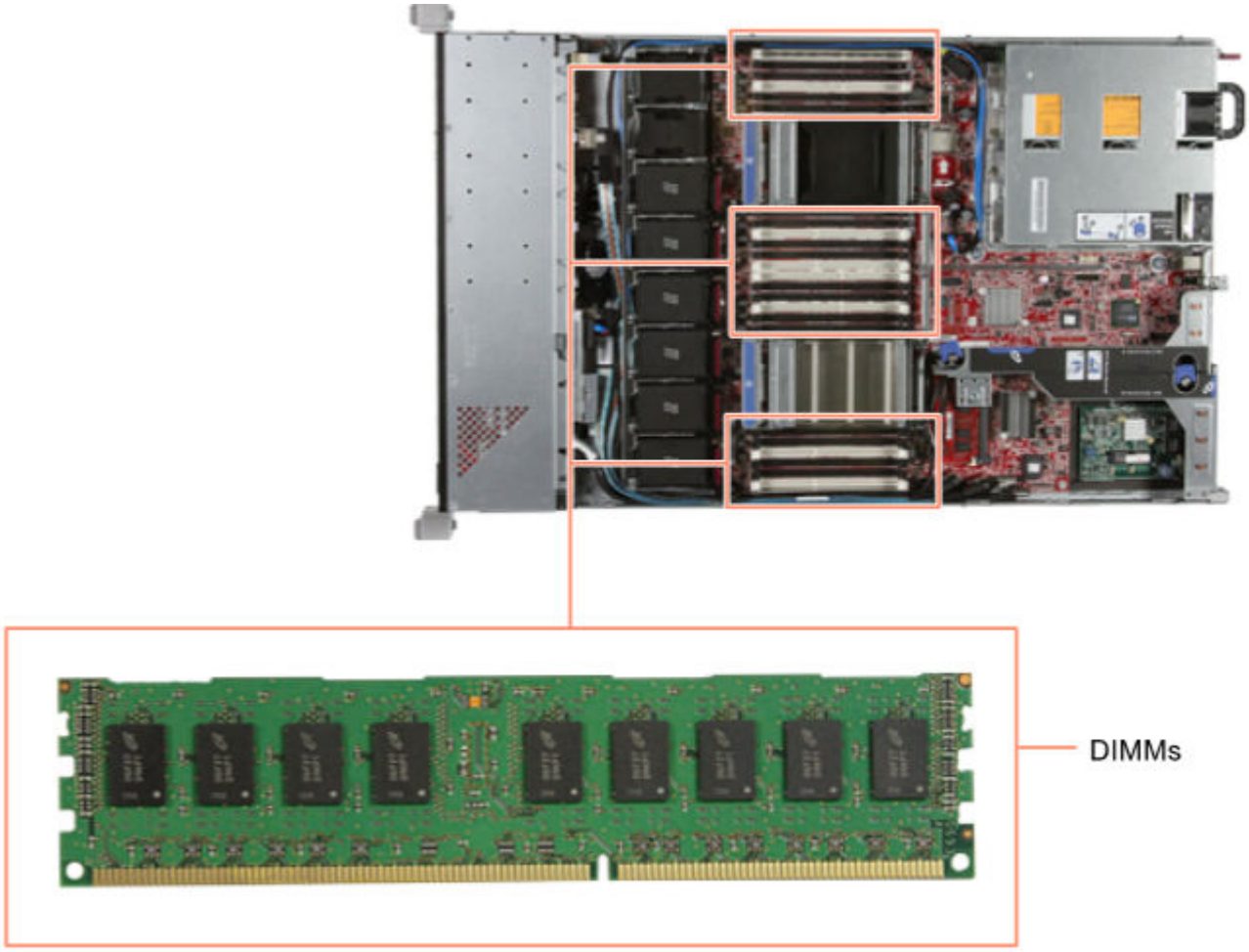
FlexibleLOM option



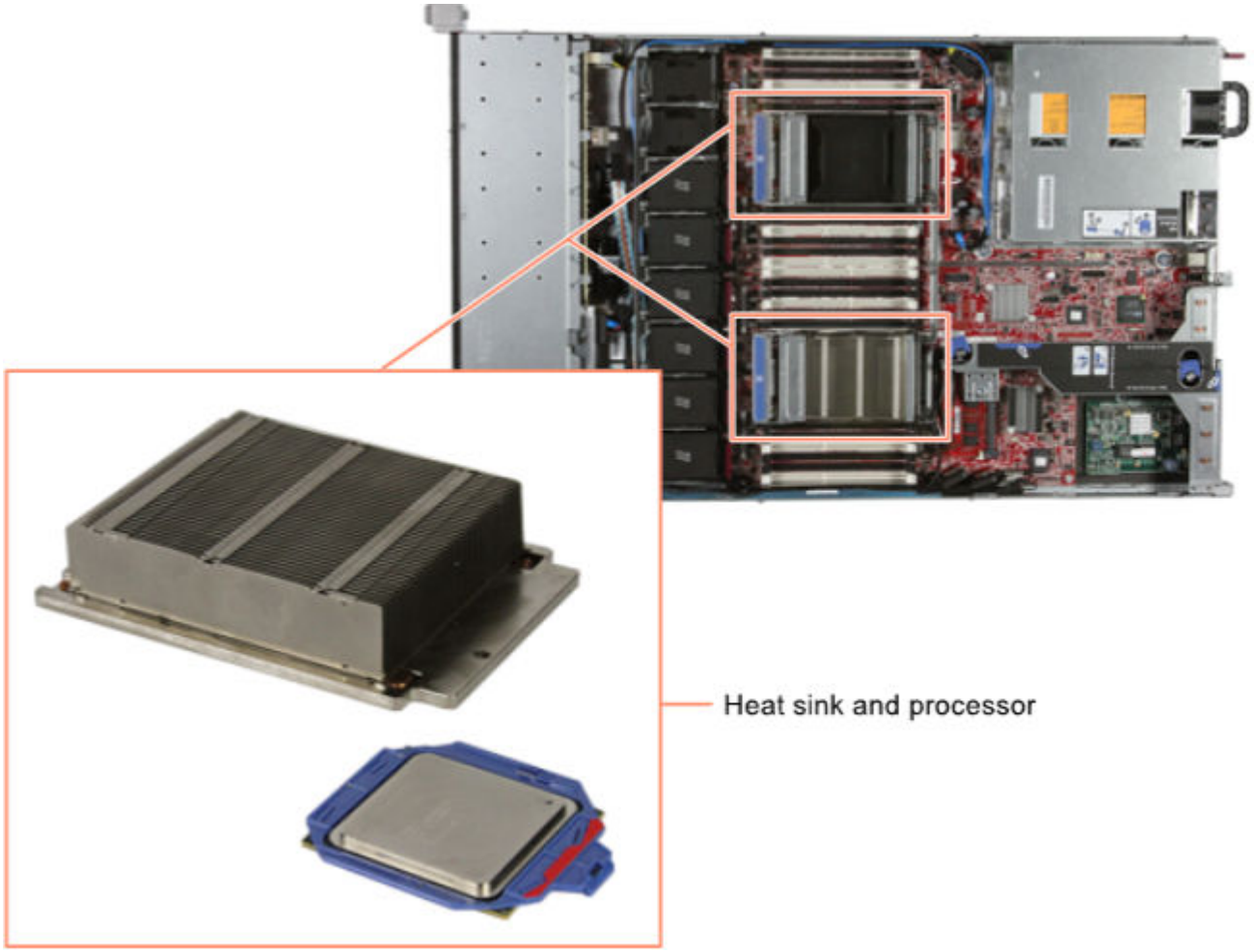
Cache module



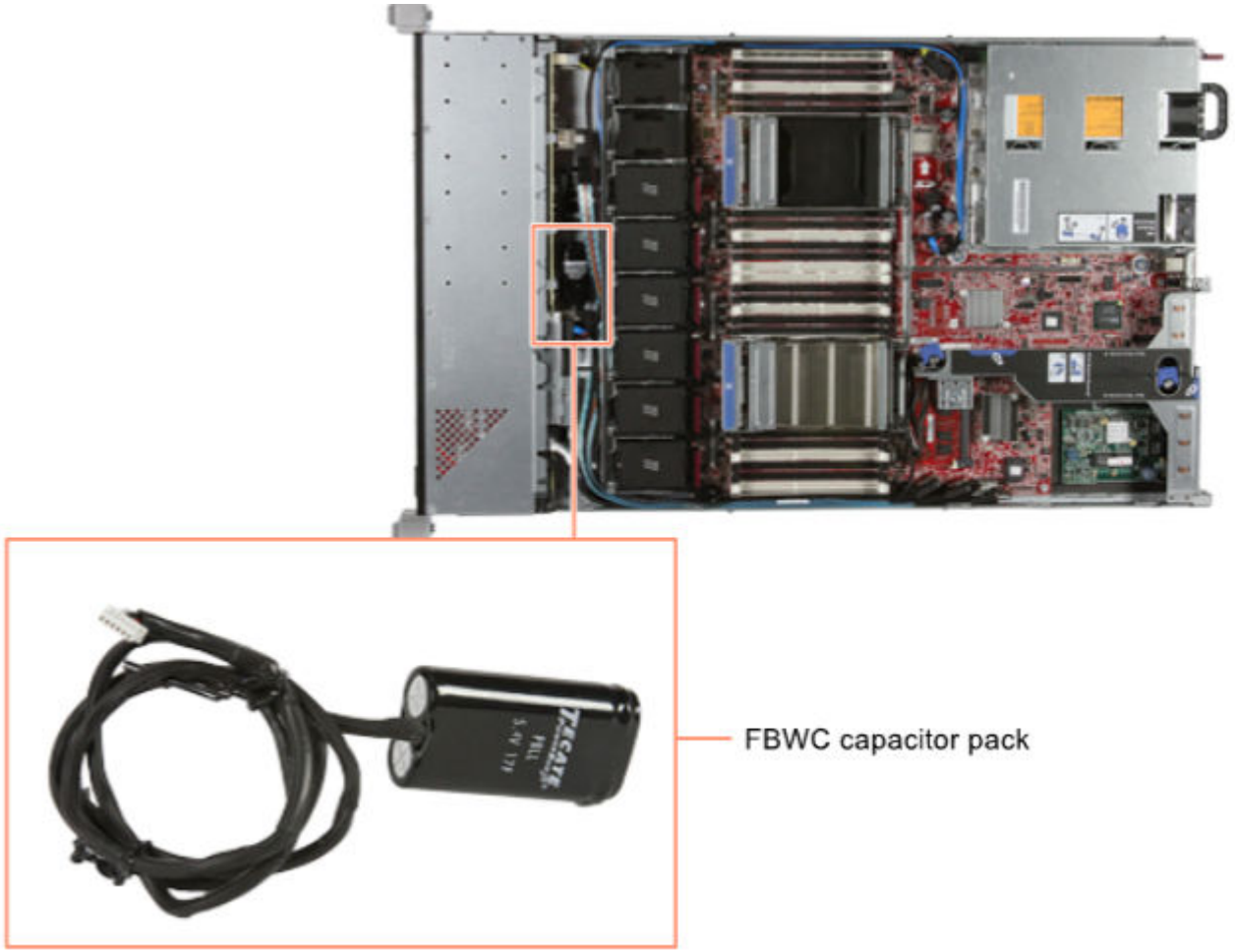
DIMMs



Heatsink and processor



FBWC Capacitor pack



Precautions

To prevent damage to the unit, protect data, and avoid personal injury, review and follow these precautions.

Before you begin

1. Review static electricity, disassembly, and safety considerations.
2. Power down the server blade.
3. Put on your electrostatic discharge (ESD) wrist strap to avoid damaging any circuitry.
4. Remove the server blade from its enclosure and place on a flat, level surface.

Static electricity

To prevent damaging the system, be aware of the precautions you need to 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.

Disassembly

Ensure that you take the following precautions when disassembling a unit:

- Label each cable as you remove it, noting its position and routing. This will make replacing the cables much easier and will ensure that the cables are rerouted properly.
- Keep all screws with the component removed, if applicable. The screws used in each component can be of different thread sizes and lengths. Using the wrong screw in a component could damage the unit.
- If the unit contains light-sensitive components such as toner cartridges, store the component in its original packaging or in a dark location to avoid damage.

Server 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.
- Plug the power cord into a grounded (earthed) electrical outlet that is easily accessible at all times.
- Unplug 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 server.

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: Do not operate the server for long

periods 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.

Tools And Materials

Tools used in removal and replacement

Torx T-10 & T-15 screwdriver (included with the server)

Preparation Procedures

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

- Extend the server from the rack. If you are performing service procedures in an HP, Compaq branded, telco, or third-party rack cabinet, you can use the locking feature of the rack rails to support the server and gain access to internal components. For more information about telco rack solutions, refer to the RackSolutions.com website (**http://www.racksolutions.com/hp**).
- Power down the server. If you must remove a server from a rack or a non-hot-plug component from a server, power down the server.
- Remove the server from the rack. If the rack environment, cabling configuration, or the server location in the rack creates awkward conditions, remove the server from the rack.

Power down the server

WARNING: To reduce the risk of personal injury, electric shock, or damage to the equipment, remove the power cord to remove power from the server. The front panel Power On/Standby button does not completely shut off system power. Portions of the power supply and some internal circuitry remain active until AC power is removed. IMPORTANT: If installing a hot-plug device, it is not necessary to power down the server.

1. Back up the server data.
2. Shut down the operating system as directed by the operating system documentation.

3. If the server is installed in a rack, press the UID LED button on the front panel. Blue LEDs illuminate on the front and rear panels of the server.
4. Press the Power On/Standby button to place the server in standby mode. When the server activates standby power mode, the system power LED changes to amber.
5. If the server is installed in a rack, locate the server by identifying the illuminated rear UID LED button.
6. Disconnect the power cords.

The system is now without power.

Extend the server from the rack

NOTE: If the optional cable management arm option is installed, you can extend the server without powering down the server or disconnecting peripheral cables and power cords. These steps are only necessary with the standard cable management solution.

1. Power down the server.
2. Disconnect all peripheral cables and power cords.
3. Loosen the front panel thumbscrews.
4. Extend the server on the rack rails until the server rail-release latches engage.**WARNING: To reduce the risk of personal injury or equipment damage, be sure that the rack is adequately stabilized before extending a component from the rack.WARNING: To reduce the risk of personal injury, be careful when pressing the server rail-release latches and sliding the server into the rack. The sliding rails could pinch your fingers.**
5. After performing the installation or maintenance procedure, slide the server into the rack:
   a. Slide the server fully into the rack.
   b. Secure the server by tightening the thumbscrews.
6. Connect the peripheral cables and power cords.

Remove the server from the rack

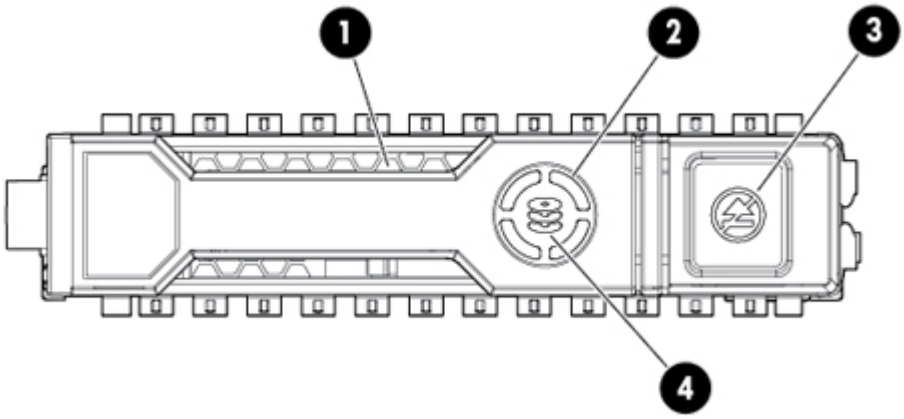
To remove the server from an HP, Compaq branded, telco, or third-party rack:

1. Power down the server.

2. Extend the server from the rack.
3. Disconnect the cabling and remove the server from the rack. For more information, refer to the documentation that ships with the rack mounting option.
4. Place the server on a sturdy, level surface.

Hard Drive LED Definitions

Hard drive LED definitions



Item	LED	Status	Definition
1	Locate	Solid blue	The drive is being identified by a host application.
		Flashing blue	The drive carrier firmware is being updated or requires an update.
2	Activity ring	Rotating green	Drive activity
		Off	No drive activity
3	Do not remove	Solid white	Do not remove the drive. Removing the drive causes one or more of the logical drives to fail.
		Off	Removing the drive will not cause a logical drive to fail.
4	Hard drive status	Solid green	The drive is a member of one or more logical drives.
		Flashing green	The drive is rebuilding or performing a RAID migration, stripe size migration, capacity expansion, erasing, or logical drive extension.

	Flashing amber/green	The drive is a member of one or more logical drives and predicts the drive will fail.
	Flashing amber	The drive is not configured and predicts the drive will fail.
	Solid amber	The drive has failed.
	Off	The drive is not configured by a RAID controller.

System Battery Considerations

System battery considerations

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 60°C (140°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.

Hot-Plug SAS Hard Drive

https://support.hpe.com/hpesc/public/videoDisplay?videoId=vpsg00001790en_us&noframe

Hot-plug SAS hard drive removal

CAUTION: To prevent improper cooling and thermal damage, do not operate the server unless all bays are populated with either a component or a blank.

Before you begin: Determine the status of the hard drive from the Hard drive LED definitions in the Maintenance Service Guide. Back up all server data on the hard drive, if possible.

1. Press the hot plug button to release the handle.
2. Pull the handle back and use it to slide the hard drive out of the hard drive bay.

3. If removing a hard drive blank, pinch the release tabs together and slide the hard drive blank out of the hard drive bay.**NOTE:** Procedures for LFF, large form factor drives are essentially the same.

Hot-plug SAS hard drive replacement

To replace the hard drive or hard drive blank, reverse the removal procedure.

Hot-Plug Power Supply

https://support.hpe.com/hpesc/public/videoDisplay?videoId=vpsg00001791en_us&noframe

Hot-plug power supply removal

WARNING: To reduce the risk of personal injury from hot surfaces, allow the power supply or power supply blank to cool before touching it.**WARNING:** To reduce the risk of electric shock, do not disassemble the power supply or attempt to repair it. Replace it only with the specified spare part.**CAUTION:** Do not attempt to remove and replace a power supply as a hot-plug procedure unless both bays are populated with power supplies.**CAUTION:** To prevent improper cooling and thermal damage, do not operate the server unless all bays are populated with either a power supply or a blank.

Before you begin: Review and follow Precautions . If only one hot-plug power supply is installed, follow Preparation procedures to power down, extend or remove the server from the rack.

1. Remove the power cord from the hot-plug power supply.
2. Press the release tab toward the power cord connector.
3. Grasp the power supply handle and pull the power supply out of the power supply bay.
4. If removing a power supply blank, pinch the blank in the center and pull it out of the power supply bay.

Hot-plug power supply replacement

WARNING: To reduce the risk of electric shock or damage to the equipment, do not connect the power cord to the power supply until the power supply is installed.

1. Slide the hot-plug power supply into the power supply bay until it is fully seated and clicks into place.
2. Connect the power cord to the hot-plug power supply.
3. Connect the power cord to the power source.
4. Power on the server if it was not already on.

5. Confirm that the hot-plug power supply LED is green.
6. If replacing a power supply blank, insert the blank into the power supply until it is fully seated and flush with the rear of the server chassis.

Access Panel

https://support.hpe.com/hpesc/public/videoDisplay?videoId=vpsg00001792en_us&noframe

Access panel removal

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: Do not operate the server for long periods 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.

Before you begin: Review and follow Precautions . If you are accessing a non-hot pluggable component, follow Preparation procedures to power down, extend or remove the server from the rack.

1. If the retaining latch is locked, use a Torx-15 screwdriver to unlock it.
2. Open the retaining latch fully. The access panel slides back releasing it from the system chassis.
3. Lift access panel up and off of the server.**NOTE:** Once the access panel is removed, you can access the Torx 10/15 tool included in the air baffle.

Access panel replacement

To replace the access panel, reverse the removal procedure.

Hot-Plug Fan Module

https://support.hpe.com/hpesc/public/videoDisplay?videoId=vpsg00001793en_us&noframe

Hot-plug fan module removal

Before you begin: Review and follow Precautions . Follow Preparation procedures to extend or remove the server from the rack. Remove the access panel.

IMPORTANT: The server can have up to eight fan modules. Install the fan module in fan slots 1 and 2 only when the second processor is installed. When only one processor is installed, always install fan blanks in fan slots 1 and 2.

1. Rotate up the release handle to unlock the fan module.
2. Grasp the release handle and pull the fan straight up and out of the server chassis.

Hot-plug fan module replacement

1. Align the fan module into position and over the system board fan connector.
2. Lower the fan module straight down and confirm that it is fully connected to the system board fan connector.
3. Rotate down the release tab to lock the fan module into position.
4. If installing a fan blank, align and lower the fan blank into position.

DVD Drive

https://support.hpe.com/hpesc/public/videoDisplay?videoId=vpsg00001794en_us&noframe

DVD drive removal

Before you begin: Review and follow Precautions . Follow Preparation procedures to power down, extend or remove the server from the rack. Remove the access panel.

NOTE: The location of the DVD drive is different on the SFF and LFF drive cage assemblies with minor differences in the procedures.

Removal from the SFF drive cage assembly

1. Disconnect the SATA DVD cable from the rear of the DVD drive.
2. Remove the 5mm Torx T-10 screw that secures the DVD drive to the SFF drive cage assembly.
3. Slide the DVD drive out the front of the server.

Replacement into the SFF drive cage assembly

To replace the DVD drive and tray, reverse the removal procedure.

Removal from the LFF drive cage assembly

1. Remove the 5mm Torx T-10 screw that secures the DVD drive to the LFF drive cage assembly.
2. Slide the DVD drive out the front of the server to access the SATA DVD cable at the rear of the DVD drive.
3. Disconnect the SATA DVD cable from the rear of the DVD drive.
4. Remove the DVD drive.

Replacement into the LFF drive cage assembly

To replace the DVD drive and tray, reverse the removal procedure.

PCI Riser Cage

https://support.hpe.com/hpesc/public/videoDisplay?videoId=vpsg00001795en_us&noframe

PCI riser cage removal

Before you begin: Review and follow Precautions . Follow Preparation procedures to power down, extend or remove the server from the rack. Remove the access panel.

1. Disconnect all external cables connected to any installed expansion boards.
2. Loosen the two PCI riser cage thumbscrews by lifting the tabs and rotating them counter clockwise, 180 degrees until the thumbscrews pop up and disengage from the system board.
3. Lift up evenly on the PCI riser cage to unseat the PCI riser boards from the system board and remove the PCI riser cage from the server chassis.
4. Remove all expansion boards if installed.

PCI riser cage replacement

To replace the PCI riser cage reverse the removal procedure.

Expansion Board

https://support.hpe.com/hpesc/public/videoDisplay?videoId=vpsg00001796en_us&noframe

Expansion board removal

Before you begin: Review and follow Precautions . Follow Preparation procedures to power down, extend or remove the server from the rack. Remove the access panel and the PCI riser cage.

1. Disconnect any internal cables connected to the expansion board.
2. Remove the 5mm Torx-10 screw that secures the expansion board to the PCI riser cage.
3. Carefully pull the expansion board out of riser card expansion slot.

Expansion board replacement

NOTE: If this is a new installation, the slot cover and 5mm Torx-10 screw needs to be removed. To replace the expansion board reverse the removal procedure.

PCI-E Riser Cards

https://support.hpe.com/hpesc/public/videoDisplay?videoId=vpsg00001797en_us&noframe

PCI-e riser cards removal

Before you begin: Review and follow Precautions . Follow Preparation procedures to power down, extend or remove the server from the rack. Remove the access panel, PCI riser cage, and if necessary, an installed expansion board.

1. To remove the low profile PCI-e X8 riser card, remove the three Torx T-15 screws that secure it to the PCI riser cage.
2. To remove the PCI-e X16 riser card, remove the two Torx T-15 screws that secure it to the PCI riser cage.

PCI-e riser cards replacement

To replace the PCI-e riser cards reverse the removal procedure.

FlexibleLOM Option

https://support.hpe.com/hpesc/public/videoDisplay?videoId=vpsg00001798en_us&noframe

FlexibleLOM option removal

Before you begin: Review and follow Precautions . Follow Preparation procedures to power down, extend or remove the server from the rack. Remove the access panel, and if necessary, the PCI riser cage.

1. Loosen the captive Torx-15 thumbscrew that secures the FlexibleLOM option to the server chassis.
2. Carefully pull the FlexibleLOM option away from the system board to disengage its connector to the system board.
3. Lift the FlexibleLOM option up and out of the server chassis.

FlexibleLOM option replacement

To replace the FlexibleLOM option, reverse the removal procedure.

Cache Module

https://support.hpe.com/hpesc/public/videoDisplay?videoId=vpsg00001799en_us&noframe

Cache module removal

Before you begin: Review and follow Precautions . Follow Preparation procedures to power down, extend or remove the server from the rack. Remove the access panel and the PCI riser cage.

1. Open the cache module slot latches.
2. Remove the cache module from the cache slot on the system board.
3. If installed, disconnect the cable to the FBWC capacitor pack.

Cache module replacement

To replace the cache module, reverse the removal procedure.

FBWC Capacitor Pack

https://support.hpe.com/hpesc/public/videoDisplay?videoId=vpsg00001800en_us&noframe

FBWC capacitor pack removal

Before you begin: Review and follow Precautions . Follow Preparation procedures to power down, extend or remove the server from the rack. Remove the access panel.

NOTE: If the FBWC capacitor pack is being replaced, remove the cache module or a PCIe controller expansion board that it is connected to. CAUTION: To prevent a server malfunction or damage to the equipment, do not add or remove the battery pack while an array capacity expansion, RAID level migration, or stripe size migration is in progress.

1. Gently pull back the plastic locking tabs of the FBWC capacitor pack holder.
2. Lift the FBWC capacitor pack out of its holder.
3. Lift the FBWC capacitor pack cable out of the routing channel in the server chassis.
4. If necessary, disconnect the FBWC capacitor pack cable from the cache module or PCI-e controller expansion board.

FBWC capacitor pack replacement

To replace the FBWC capacitor pack, reverse the removal procedure.

Drive Cage Assembly

https://support.hpe.com/hpesc/public/videoDisplay?videoId=vpsg00001801en_us&noframe

Drive cage assembly removal

Before you begin: Review and follow Precautions . Follow Preparation procedures to power down, extend or remove the server from the rack. Remove the access panel, all hard drives and hard drive blanks.

NOTE: While the SFF and LFF drive cage assemblies are different, the removal, replacement procedures are essentially the same.

NOTE: The drive cage assembly includes the System Insight Display, Front panel LEDs and buttons, the hard drive backplane, and cables.

1. Disconnect all cables from the hard drive backplane.
2. Remove the FBWC capacitor pack from its holder.
3. Disconnect all cables from the system board that are not easily accessible from the rear of the drive cage assembly.**NOTE:** This will differ between the SFF and LFF drive cage assemblies.
4. Lift the cables being removed with the drive cage assembly out of the routing channels in the server chassis, noting the cable path for later replacement.
5. Remove the six 3mm Torx T-10 screws, three on each side that secure the drive cage assembly to the server chassis.
6. Slide out the drive cage assembly forward and then up and to remove it from the server chassis.

Drive cage assembly replacement

1. Align and lower the drive cage assembly onto the guide tabs in the front of the server chassis.
2. Slide the drive cage assembly back to align the bottom of the assembly with the guide tabs below and the screw holes on the side.
3. Replace the six 3mm Torx T-10 screws, three on each side to secure the drive cage assembly to the server chassis.
4. Route the cables from the drive cage assembly into their routing channels in the server chassis and connect them to the system board.
5. Connect the additional cables from the system board to the hard drive backplane, which were disconnected earlier.**NOTE:** This will differ between the SFF and LFF drive cage assemblies.
6. Insert the FBWC capacitor pack into its holder.

Air Baffle

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Air baffle removal

Before you begin: Review and follow Precautions . Follow Preparation procedures to power down, extend or remove the server from the rack. Remove the access panel.

1. If present, lift the SATA DVD cable out of the plastic tabs on the air baffle.
2. Lift the air baffle up and out of the server chassis.
3. If present, transfer the Torx 10/15 tool from the old to the new air baffle.

Air baffle replacement

To replace the air baffle, reverse the removal procedure.

DIMMs

https://support.hpe.com/hpesc/public/videoDisplay?videoId=vpsg00001803en_us&noframe

DIMMs removal

Before you begin: Review and follow Precautions . Follow Preparation procedures to power down, extend or remove the server from the rack. Remove the access panel.

1. Open the DIMM slot latches.
2. Lift the DIMM up and out of the DIMM slot.

DIMMs replacement

1. Ensure that the DIMM slot latches are open.
2. Locate the alignment notch on the DIMM and align it with the key in the DIMM slot.
3. Push the DIMM down firmly into the slot until the DIMM slot latches snap into place.
4. Ensure that the DIMM is fully inserted and properly seated in the slot.

Heat Sink And Processor

https://support.hpe.com/hpesc/public/videoDisplay?videoId=vpsg00001804en_us&noframe

Heat sink and processor removal

IMPORTANT: This server can accommodate up to two processors. Processor 1 must always be installed. Processor 2 is optional. NOTE: When installing a second processor as a new option:

- Update the system ROM before installing the processor option. Refer to system documentation for download locations and procedure to install the latest ROM.
- Remove and retain for future use, the heat sink blank and processor cover.

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

Before you begin: Review and follow Precautions . Follow Preparation procedures to power down, extend or remove the server from the rack. Remove the access panel.

1. Lift the handle to open the heat sink retaining bracket, and rotate the bracket to the open position.
2. Lift the heat sink straight up and out of the server chassis, being careful not to touch or spread the remaining thermal grease on the bottom.**IMPORTANT:** If the processor may be reused in this or any other system, remove the thermal grease with an alcohol swab. Allow the alcohol to evaporate before you continue.
3. If you are replacing the processor, open the processor locking lever, labeled 'open lever 1st', then begin to open the second processor locking lever.
4. Continue to lift the second processor locking lever to release the spring-loaded processor retaining bracket.
5. Being careful not to touch the processor contacts, grasp the tab of the processor housing and slide the processor out of the processor retaining bracket.

CAUTION: To avoid damage to the processor: Handle the processor only by the front tab of its housing. Do not touch the bottom of the processor, especially the contact area.

Heat sink and processor replacement

CAUTION: To prevent possible server malfunction and damage to the equipment, multiprocessor configurations must contain processors with the same part number.

CAUTION: To prevent possible server overheating, always populate processor socket 2 with a processor and a heat sink or a process socket cover and a heat sink blank.

CAUTION: THE PINS ON THE SYSTEM BOARD ARE VERY FRAGILE AND EASILY DAMAGED. To avoid damage to the system board:

- Never remove the processor from its housing.
- Do not touch the processor socket contacts.
- Do not place the processor directly into its socket use the processor socket retaining bracket.

CAUTION: To avoid damage to the processor: Handle the processor only by the front tab of its housing. Do not touch the bottom of the processor, especially the contact area.

1. Carefully slide the processor into the processor socket retaining bracket until it is full seated. Notice the position of the bracket alignment pins on either side of the processor housing.
2. Close the processor socket retaining bracket.**NOTE:** When the processor is installed properly inside the processor retaining bracket, the processor retaining bracket clears the flange on the front to the socket.**CAUTION: Do not press down on the processor. Pressing down on the processor may cause damage to the processor socket and the system board. Press only in the area indicated on the processor retaining bracket.**
3. Press and hold processor retaining bracket while closing and latching the processor locking lever, labeled 'Close lever 1st'.
4. Close and latch the second processor locking lever.**CAUTION: The heat sink thermal interface media is not reusable and must be replaced if the heat sink is removed from the processor after it has been installed.NOTE:** If you are installing a new heat sink and it comes with a factory-applied layer of thermal interface media, remove the cover from the bottom and skip the application of thermal grease to the processor.If you are reinstalling the old heat sink, use an alcohol wipe to clean off the old thermal grease from the heat sink. Allow the alcohol to evaporate before you continue.
5. Apply thermal grease in a pattern of five big dots.
6. Align and lower the heat sink into position over the guide pins on the system board.
7. Close and lock the heat sink retaining bracket.

System Battery

https://support.hpe.com/hpesc/public/videoDisplay?videoId=vpsg00001805en_us&noframe

System battery removal

Before you begin: Review and follow Precautions . Follow Preparation procedures to power down, extend or remove the server from the rack. Remove the access panel. Review System battery considerations .

1. Push back on the release tab that secures the system battery in place.

2. Grasp the system battery and lift it out of its retaining bracket.

System battery replacement

1. With the positive (+) side of the battery facing towards the chassis wall, place the battery fully into its retaining bracket with the release tab holding the battery in place.**IMPORTANT:** Replacing the system board battery resets the system ROM to its default configuration. After replacing the battery, reconfigure the system through RBSU.

System Board

https://support.hpe.com/hpesc/public/videoDisplay?videoId=vpsg00001806en_us&noframe

System board removal

Before you begin: Review and follow Precautions . Follow Preparation procedures to power down, extend or remove the server from the rack. Remove all the power supplies. Remove the access panel. If installed, remove the FBWC capacitor pack. Remove the air baffle, PCI riser cage, expansion boards, cache module, FlexibleLOM option, fans and fan blanks, DIMMs, heat sinks and processors.

1. Disconnect all cables connected to the system board and lift them out of their routing channels, noting their location for later reconnection.
2. Loosen the two Torx T-15 Thumbscrews that secure the system board to the server chassis.
3. Slide the system board toward the front of the server chassis until it stops.
4. Carefully lift the system board out of the sever chassis.

System board replacement

To replace the system board, reverse the removal procedure.

IMPORTANT: After replacing all of the components removed during the process, power up the server and run the procedure to re-enter the server serial number and product ID. Refer the service manual for this procedure.