HPE ProLiant DL380 G7 Server - Parts Support Guide

Part Number: External
Published: 2020
Edition: 1

HPE ProLiant DL380 G7 Server - Parts Support Guide

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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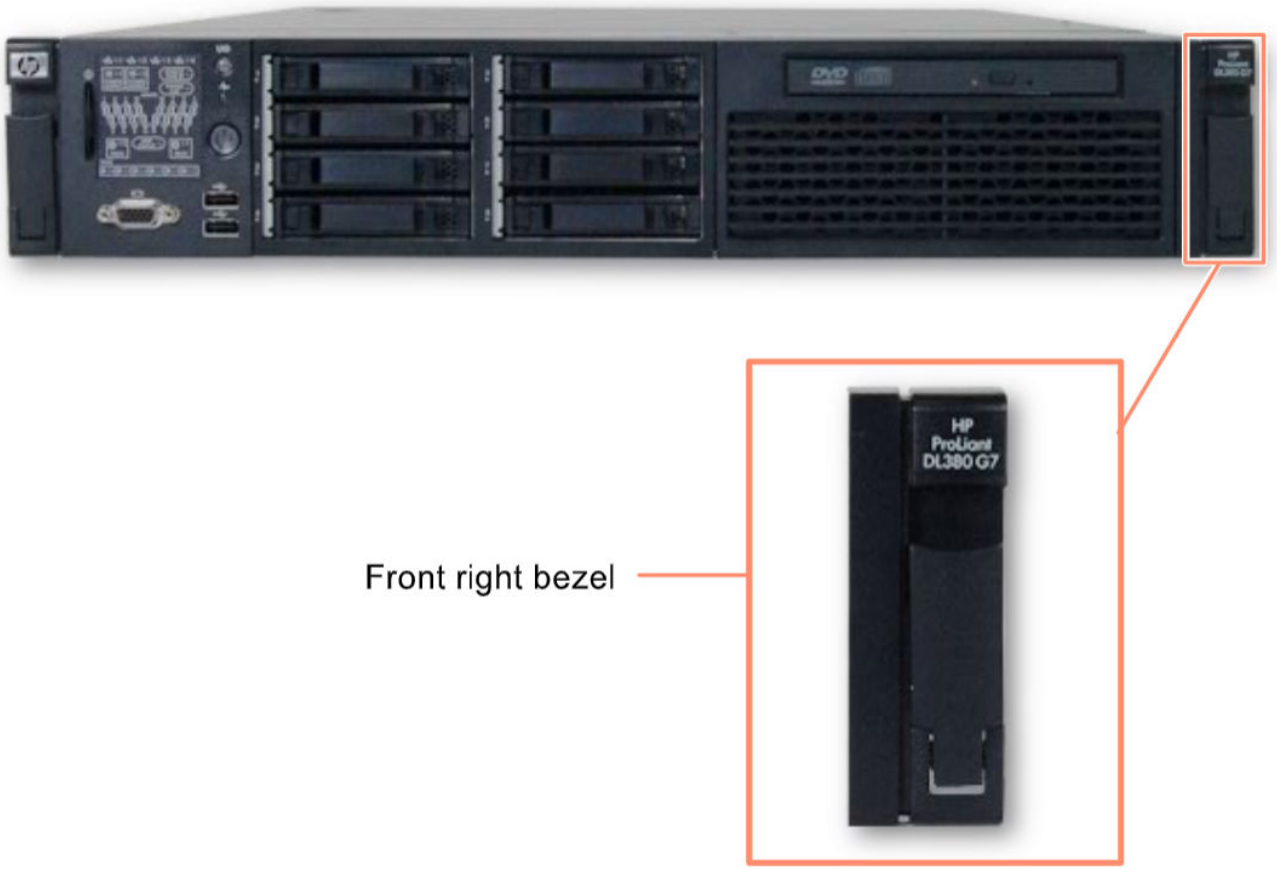
Front view



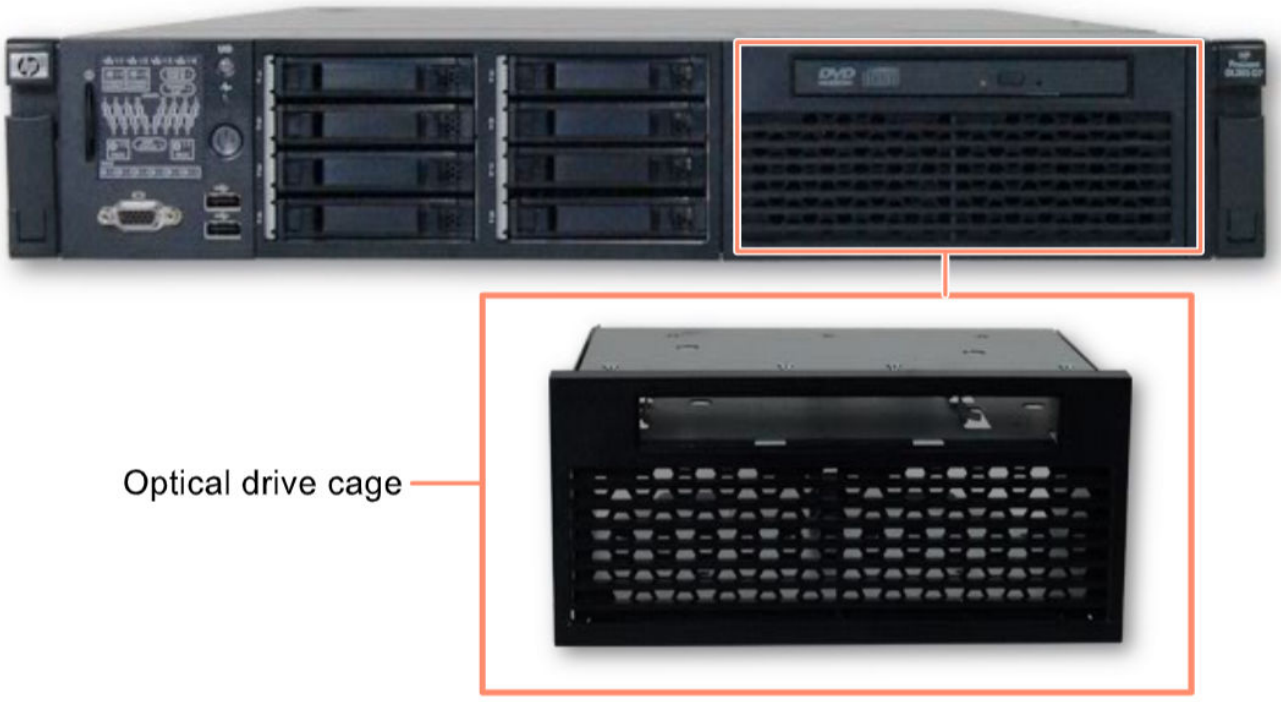
Optical drive



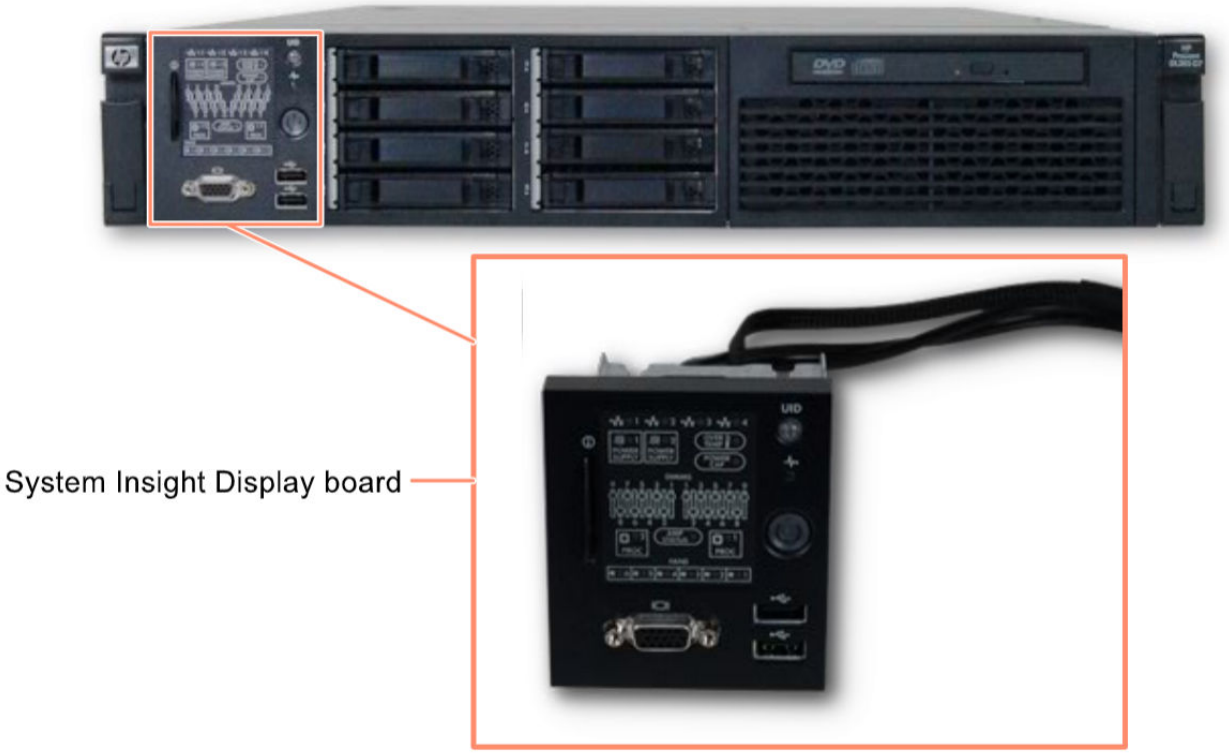
Front right bezel



Optical drive cage



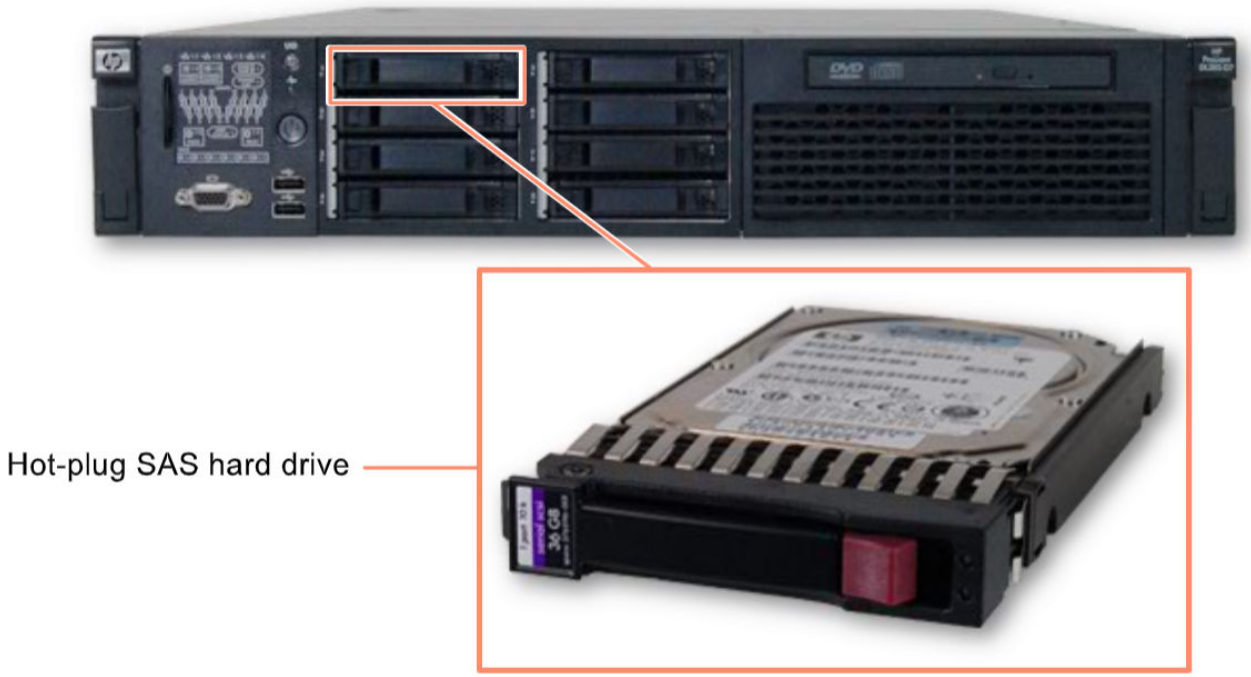
System Insight Display board



Front left bezel



Hot-Plug SAS hard drive



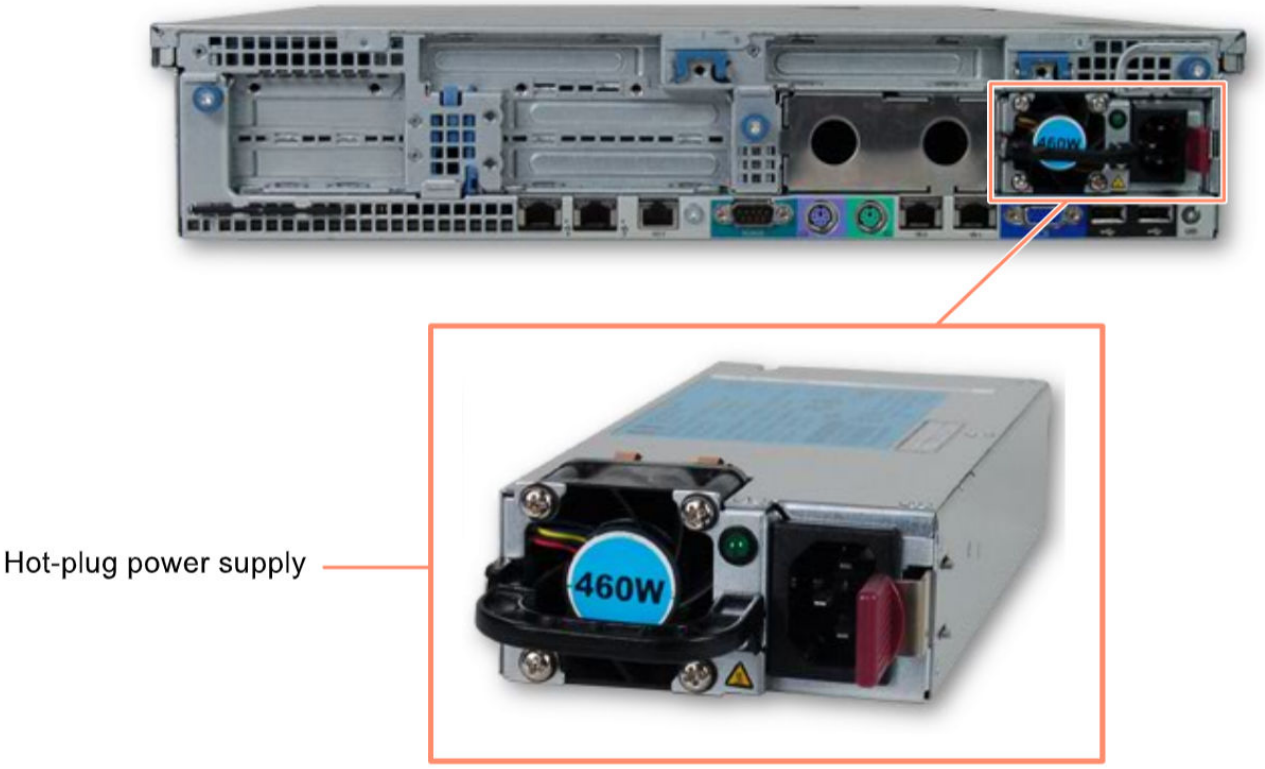
Access panel



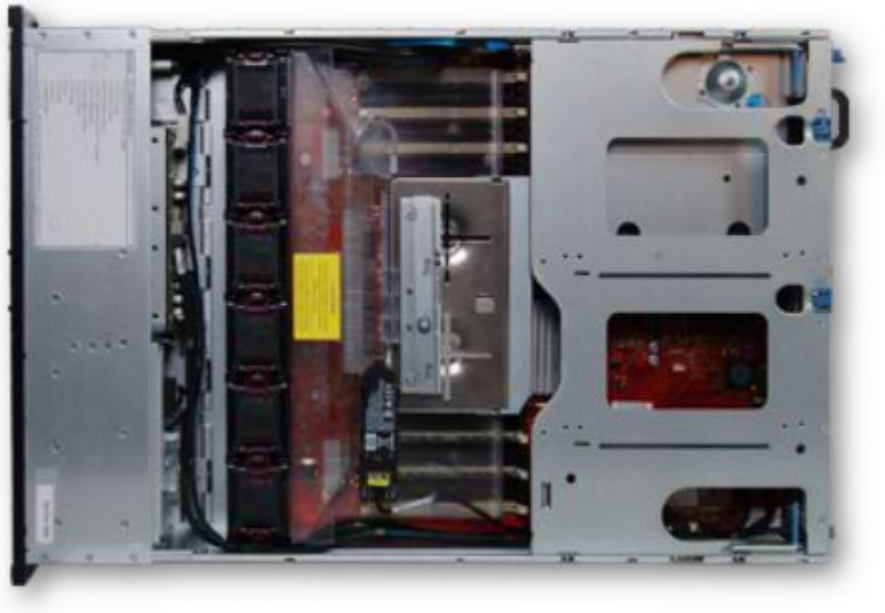
Back view



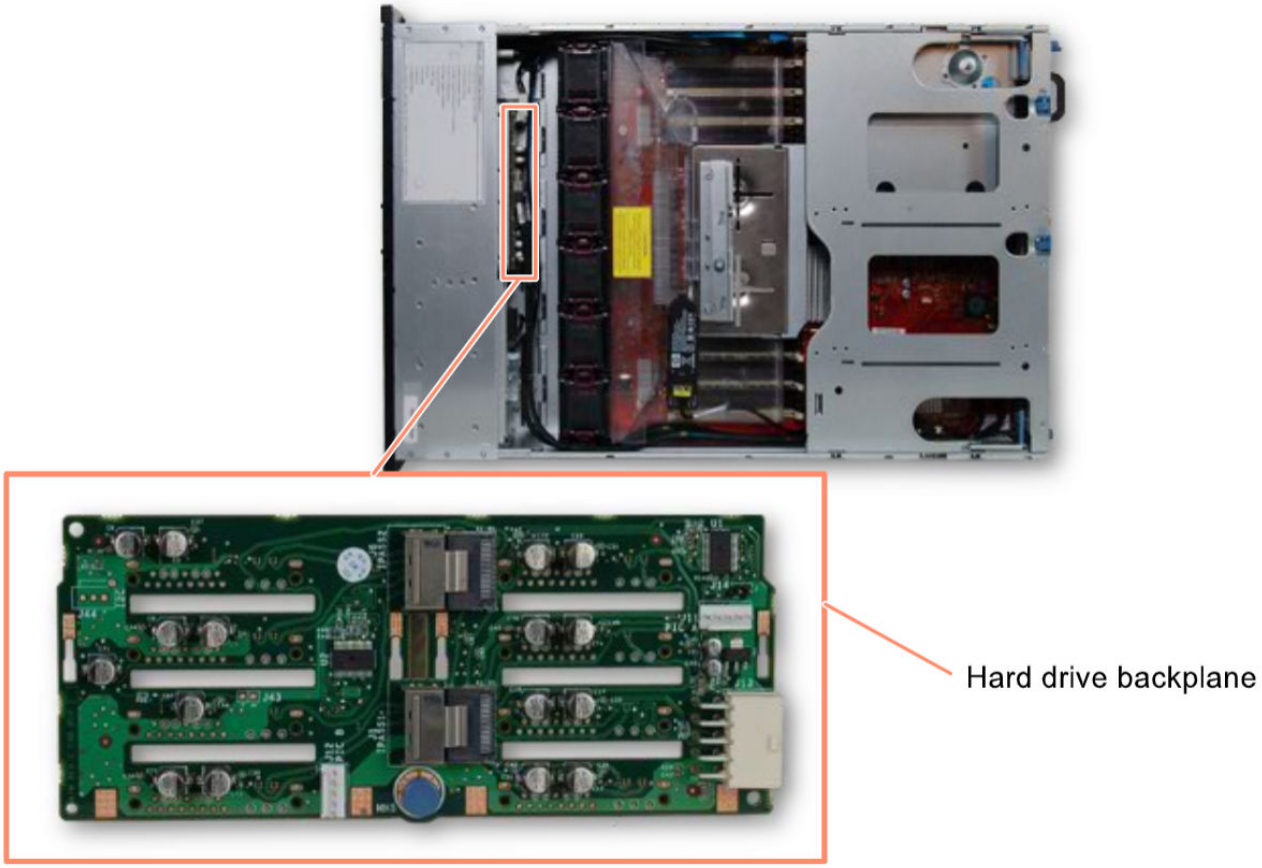
Power Supply



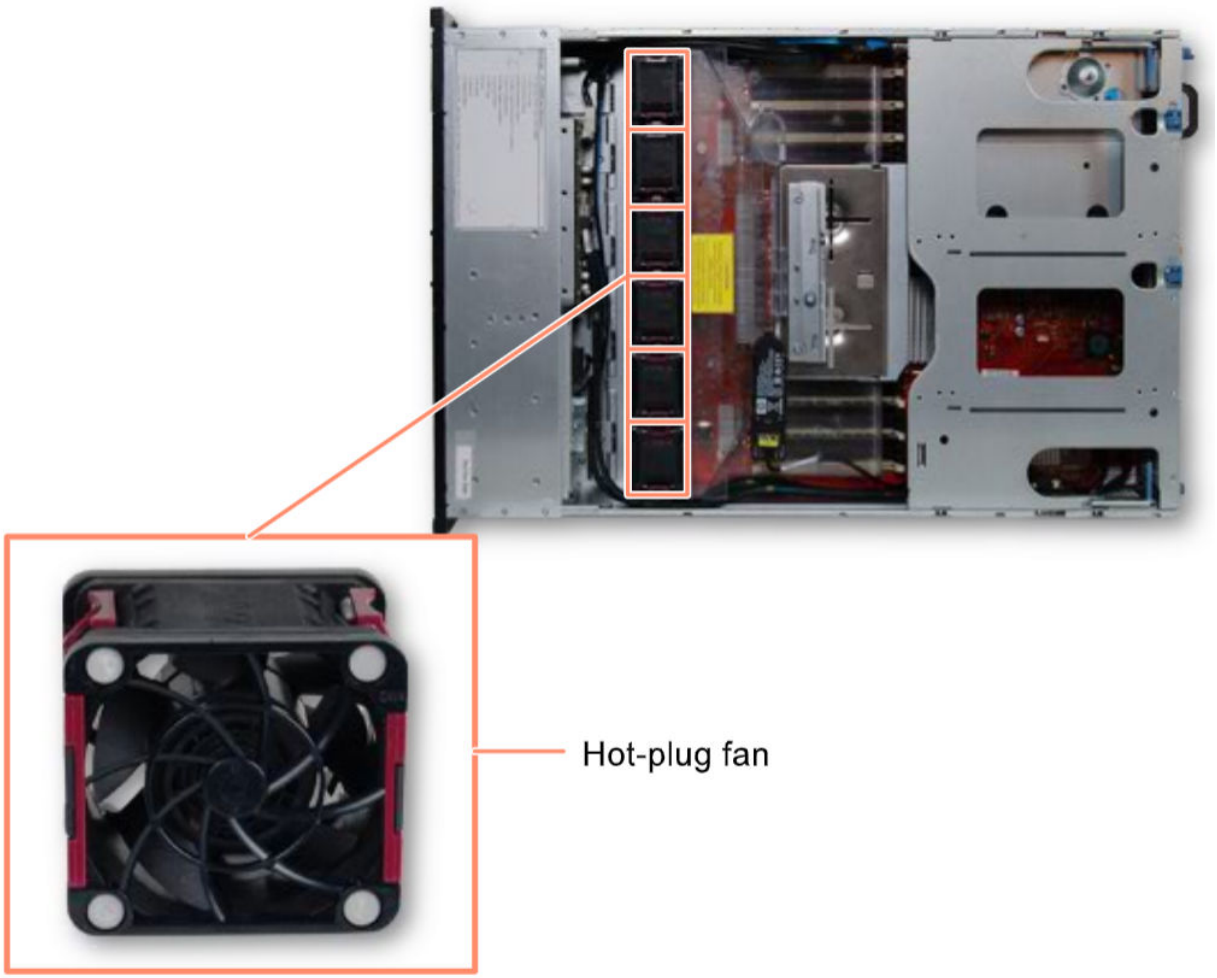
Internal view 1



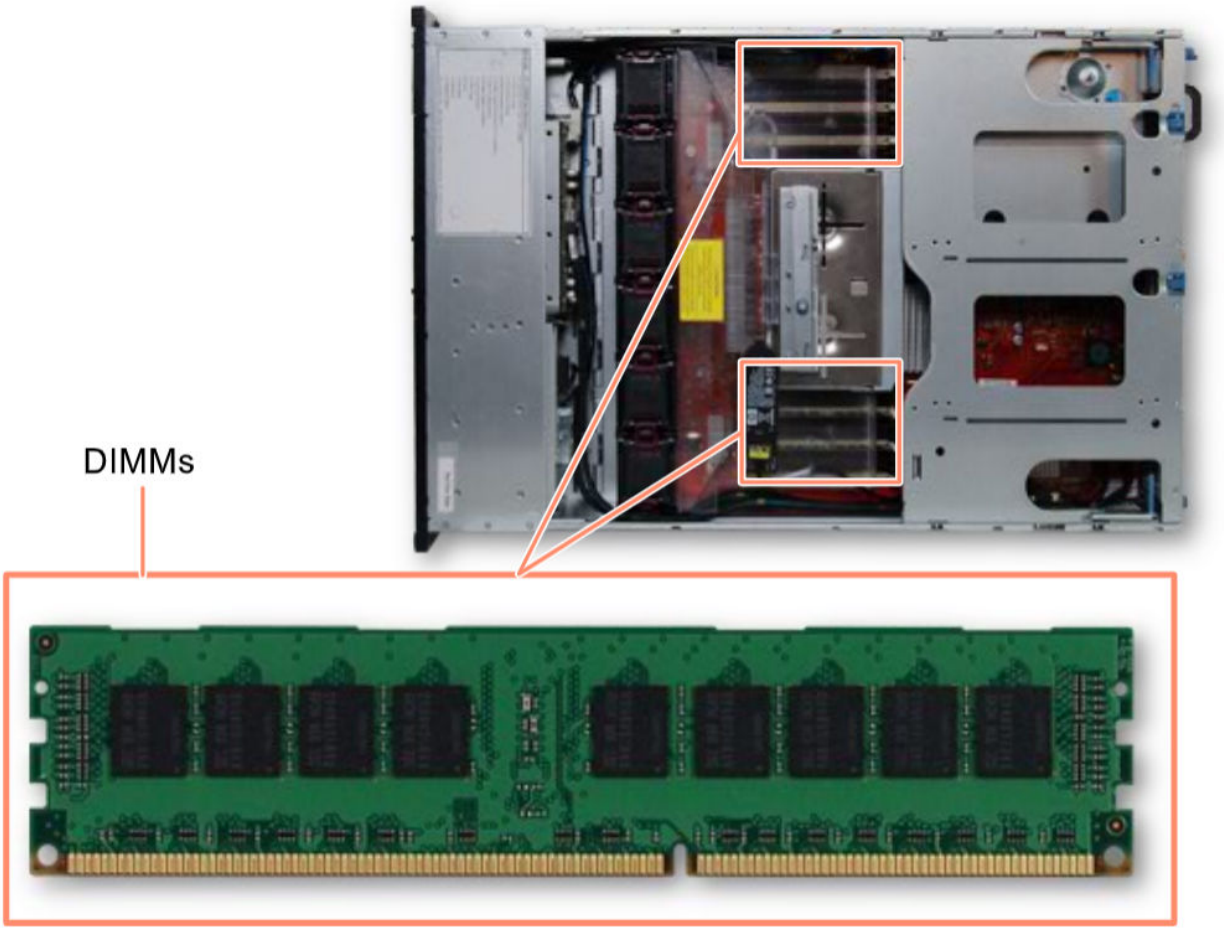
Hard drive backplane



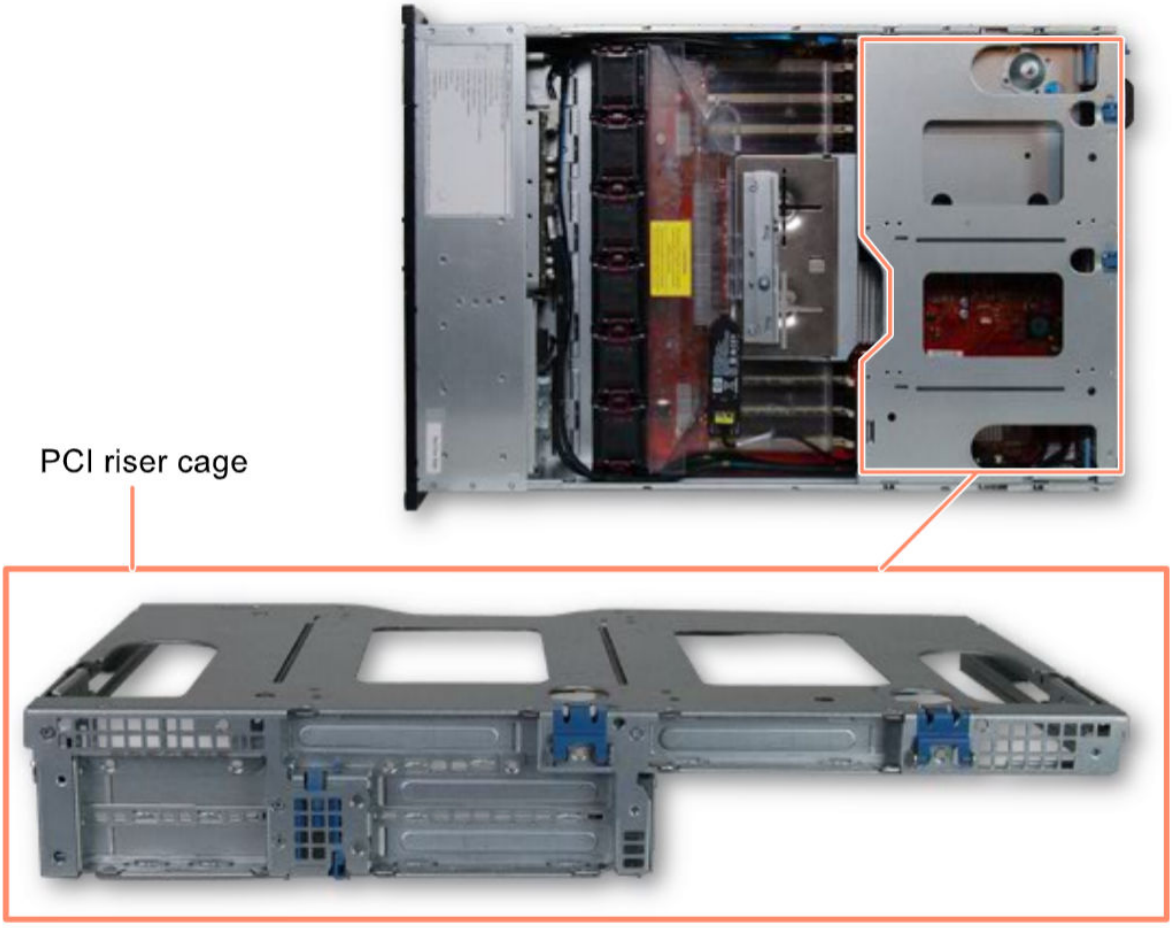
Hot-Plug fan



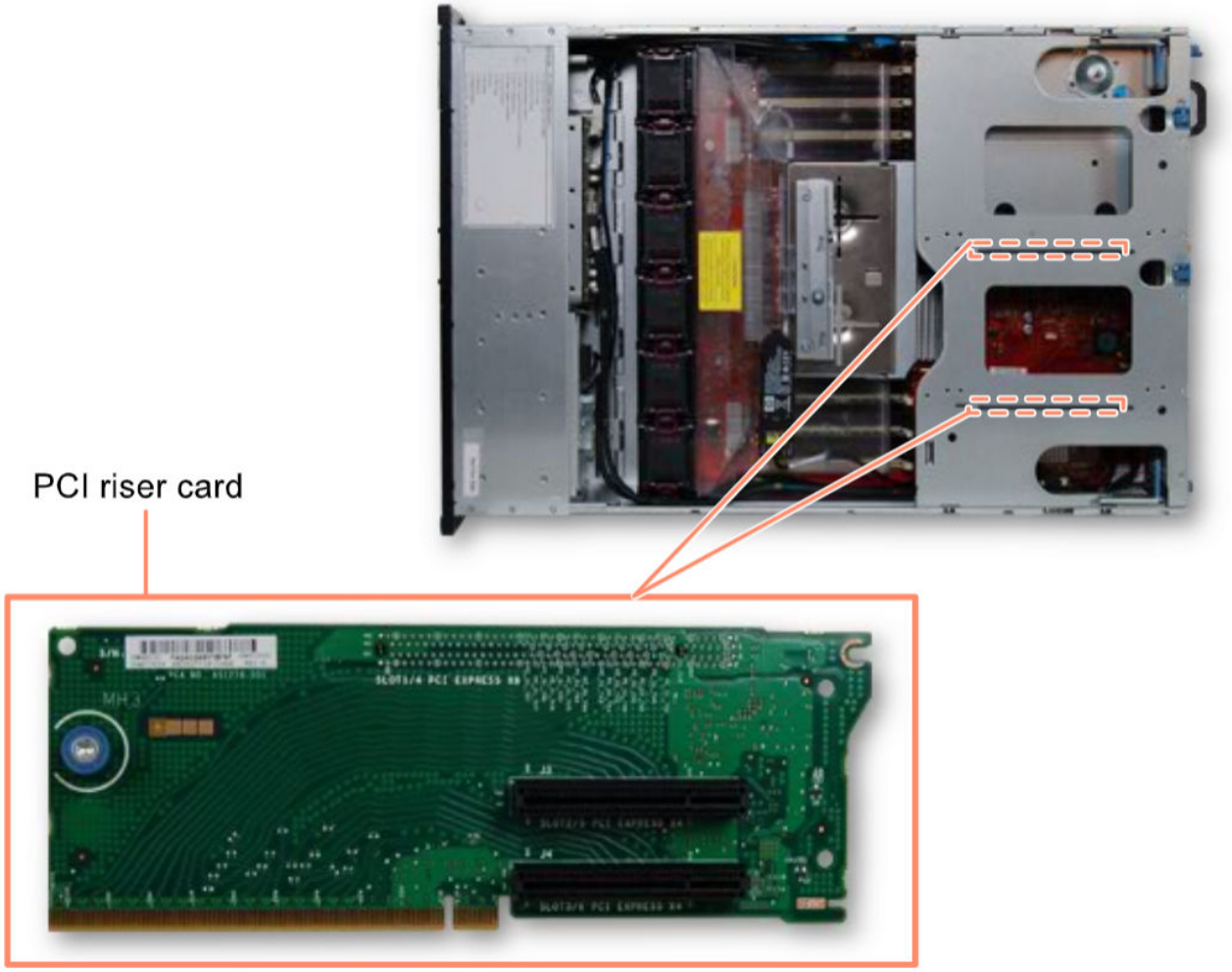
DIMMs



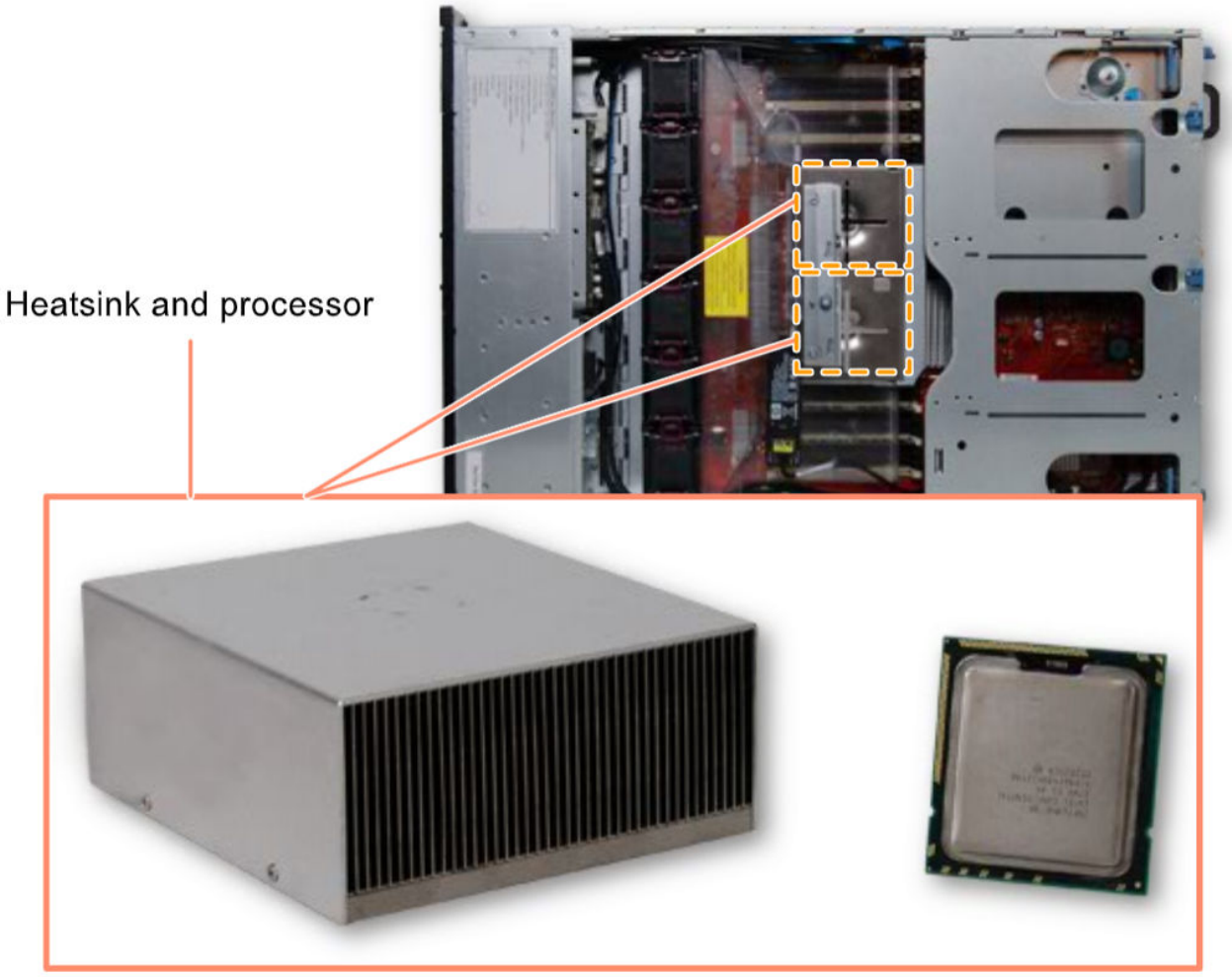
PCI riser cage



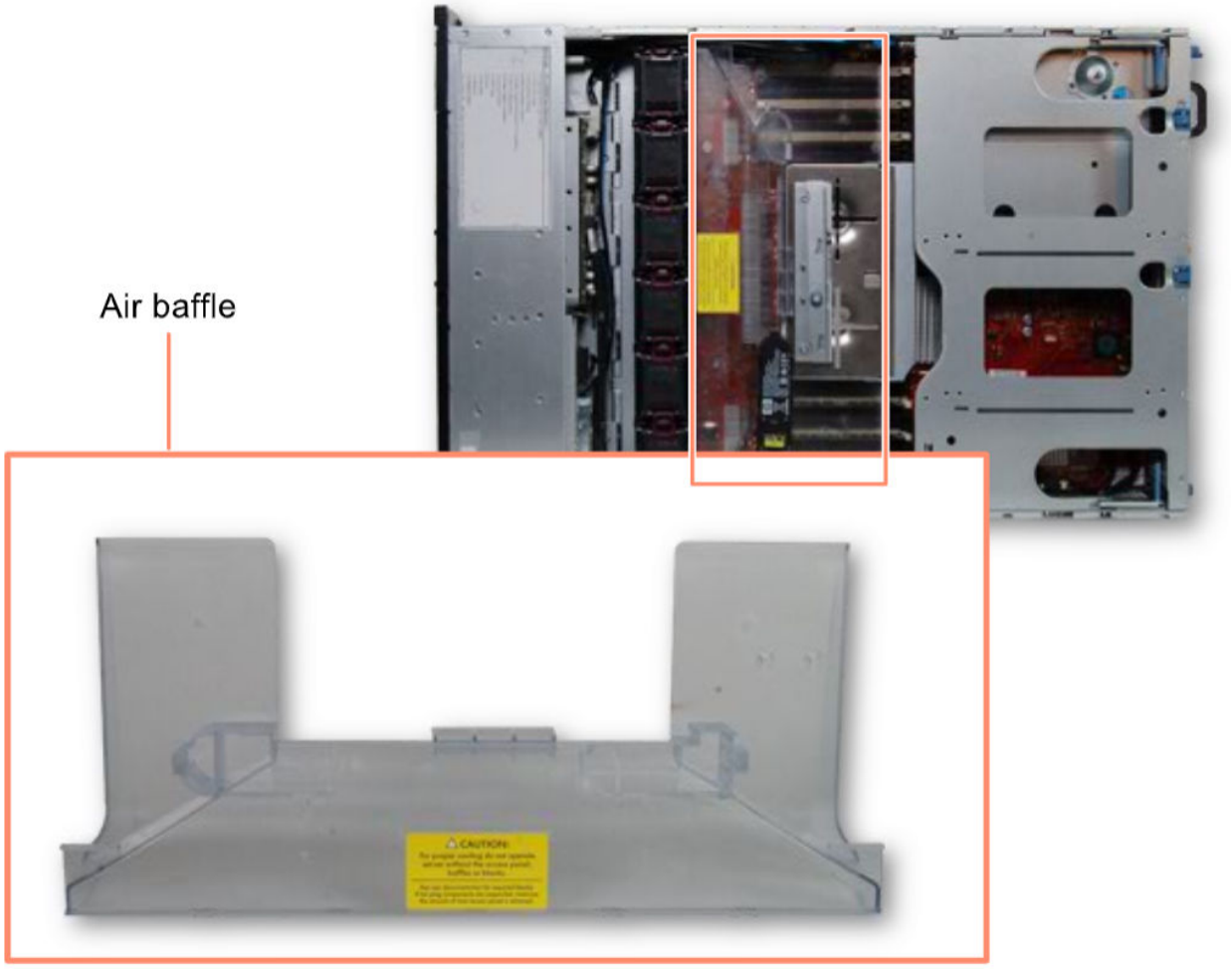
PCI riser cards



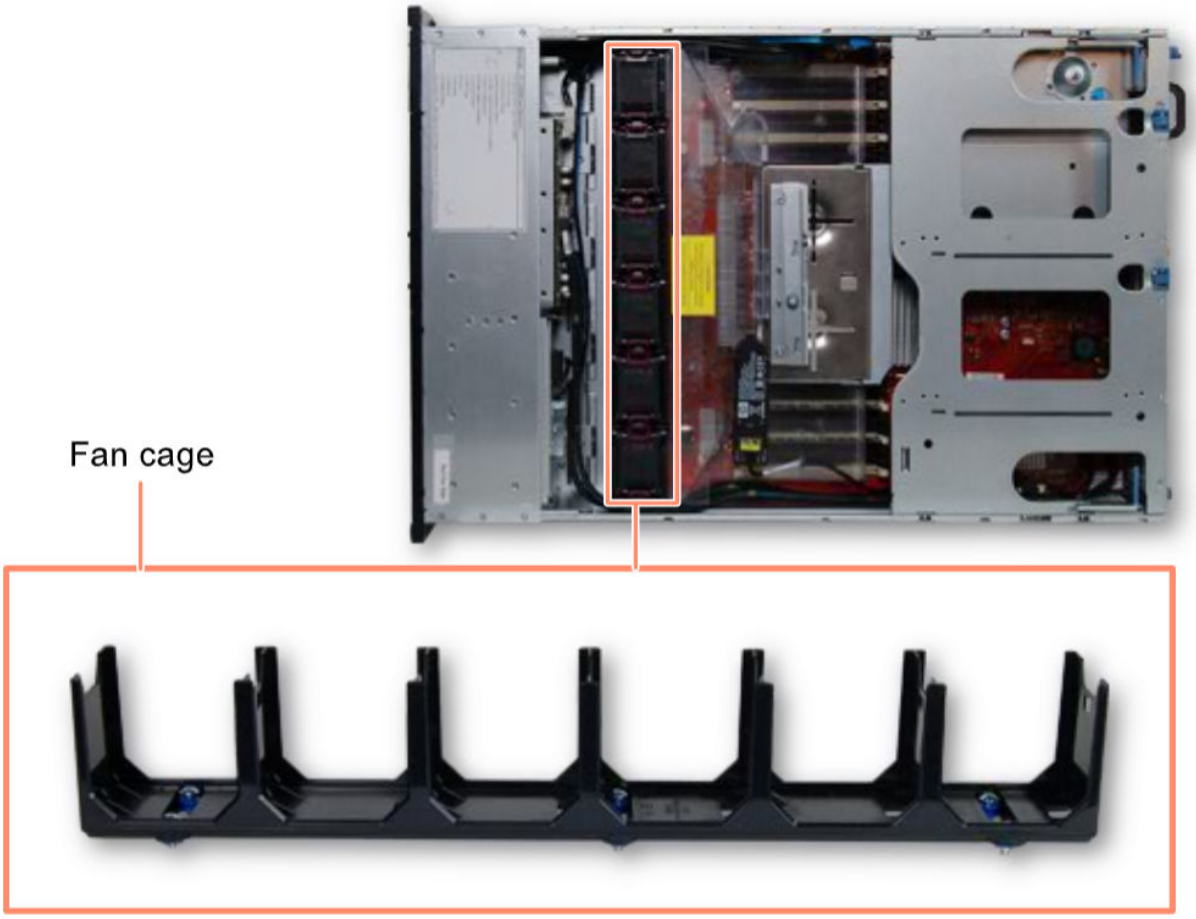
Heatsink and Processor



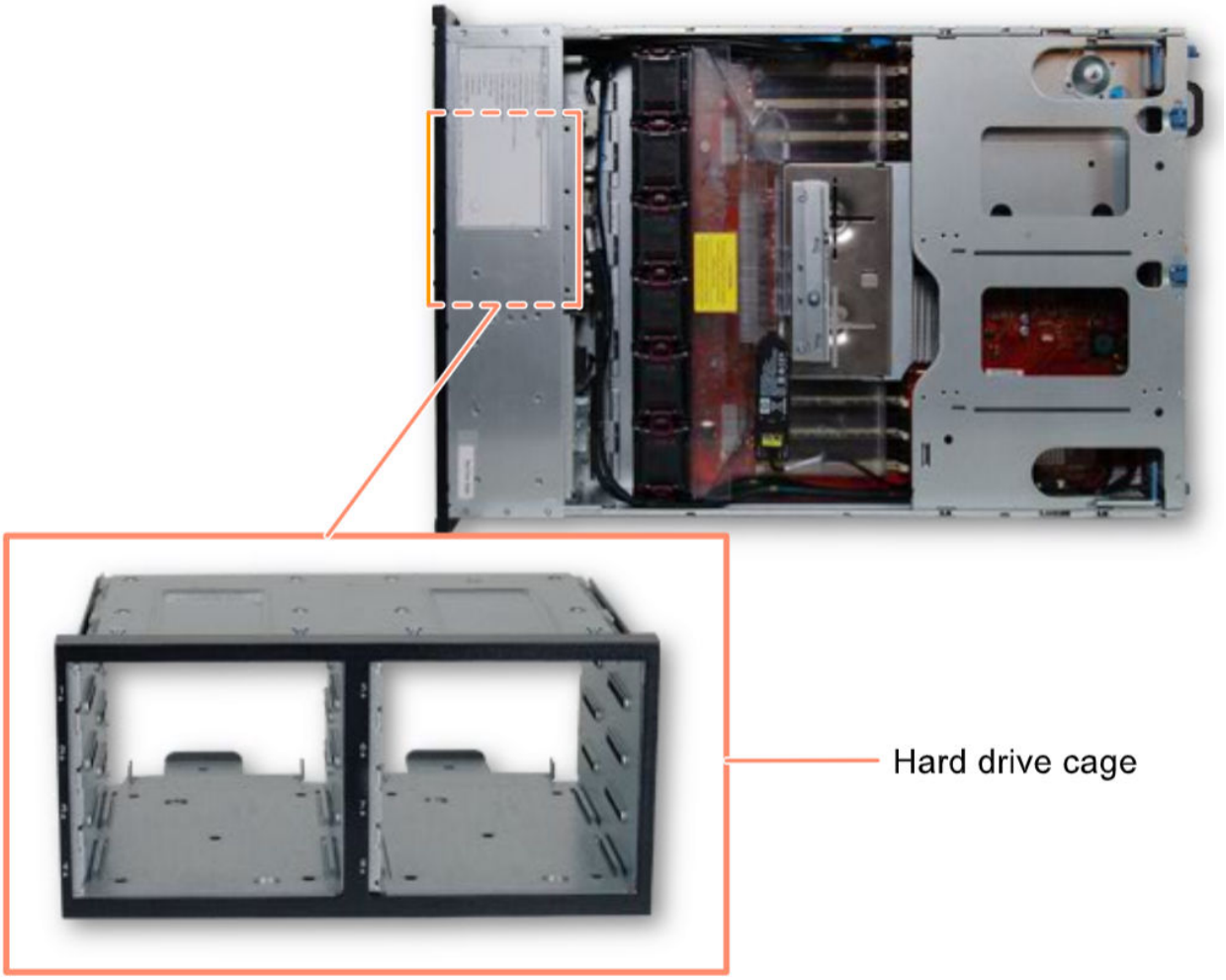
Air baffle



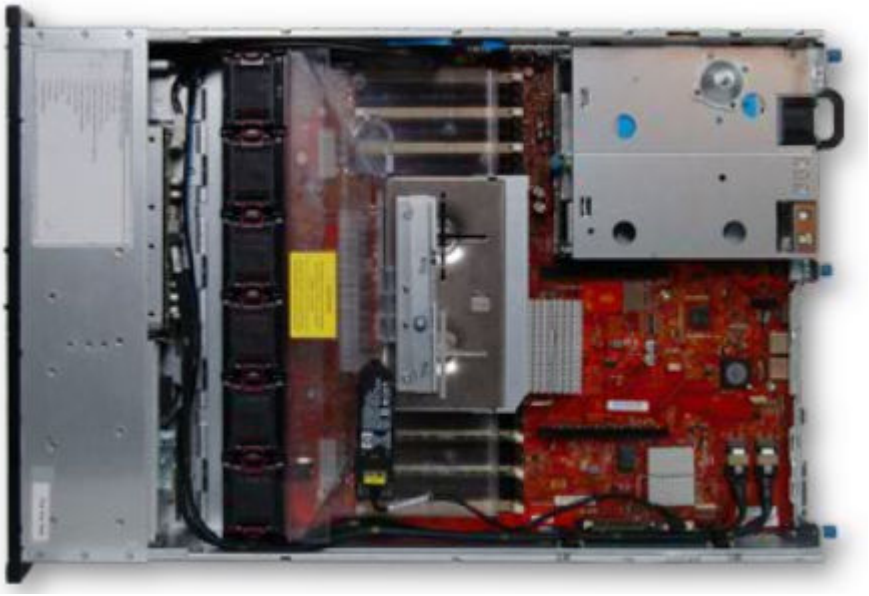
Fan cage



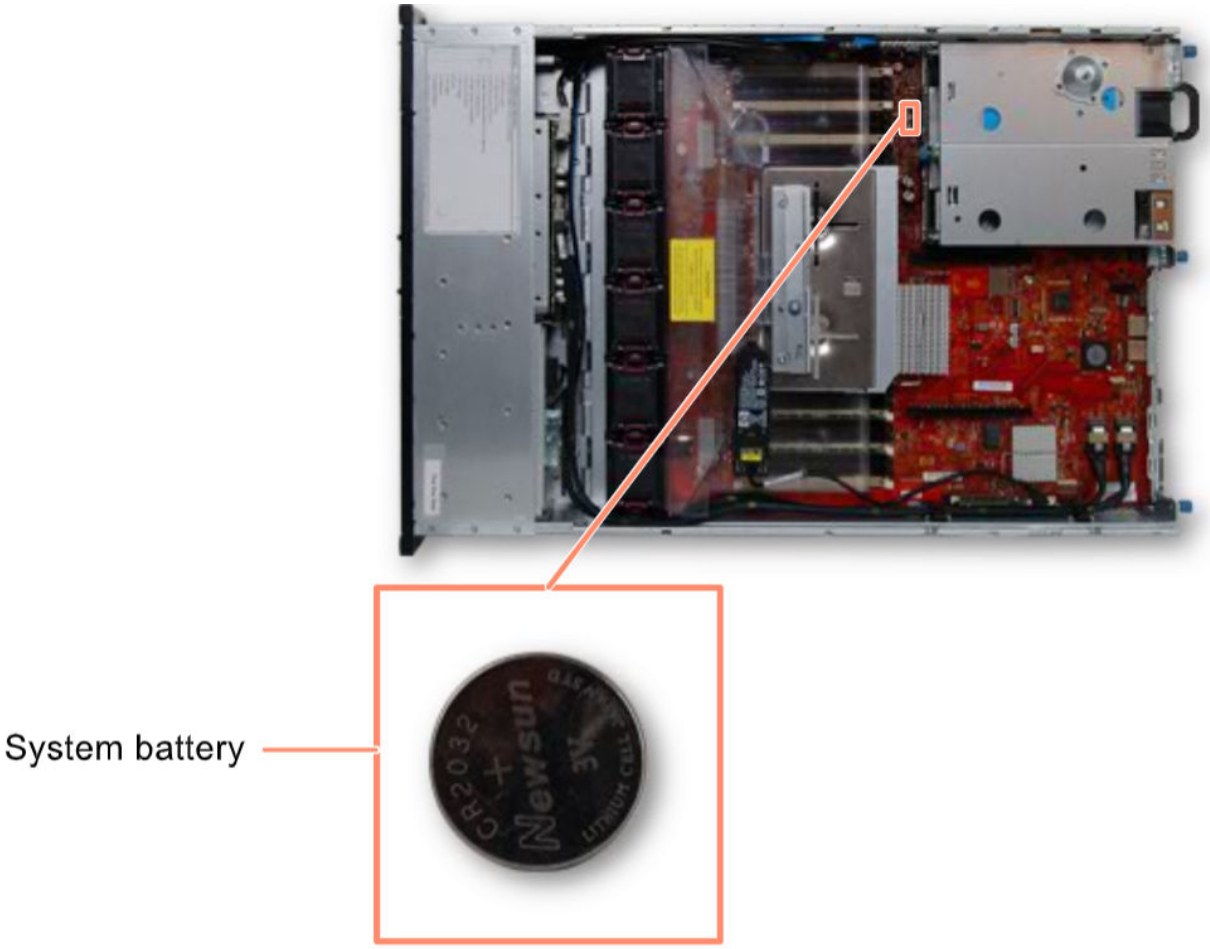
Hard drive cage



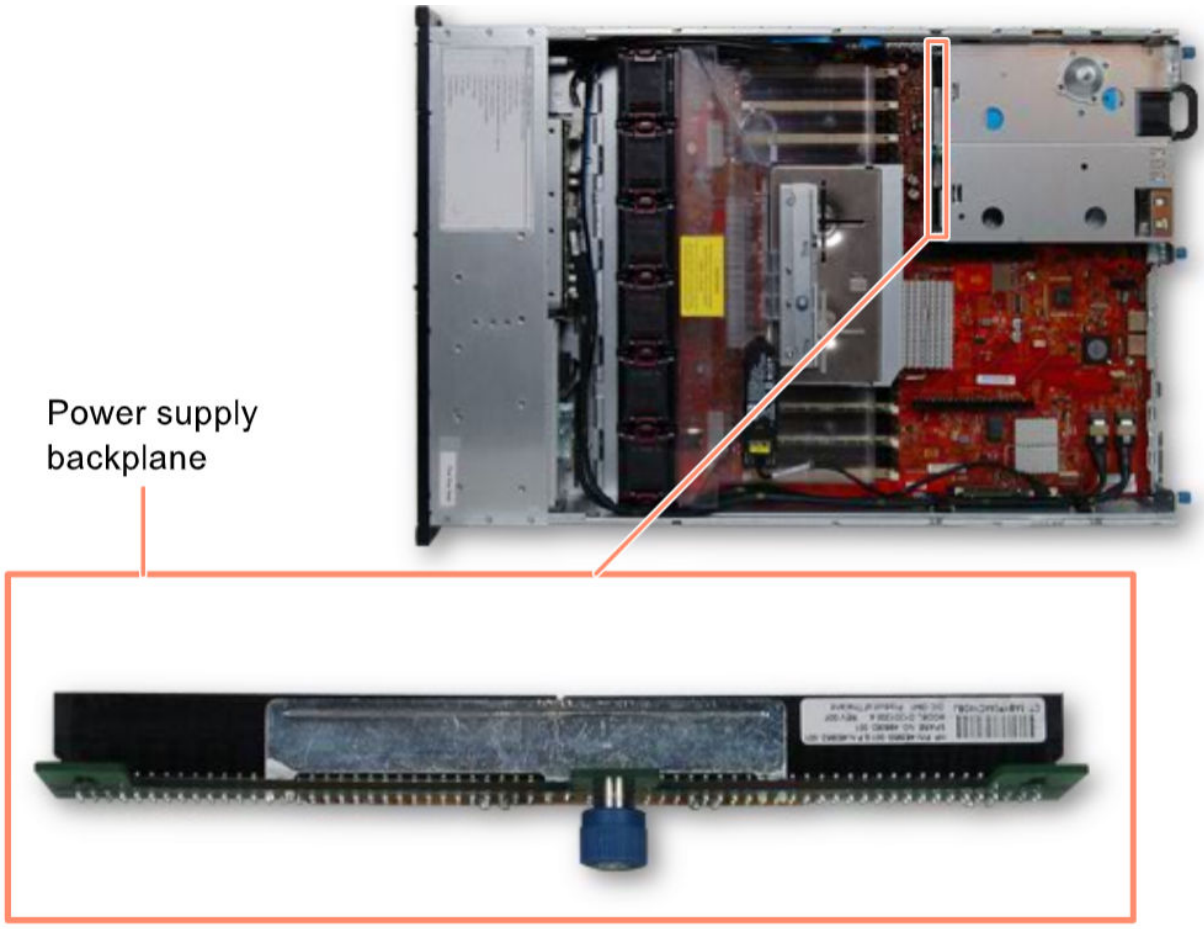
Internal view 2



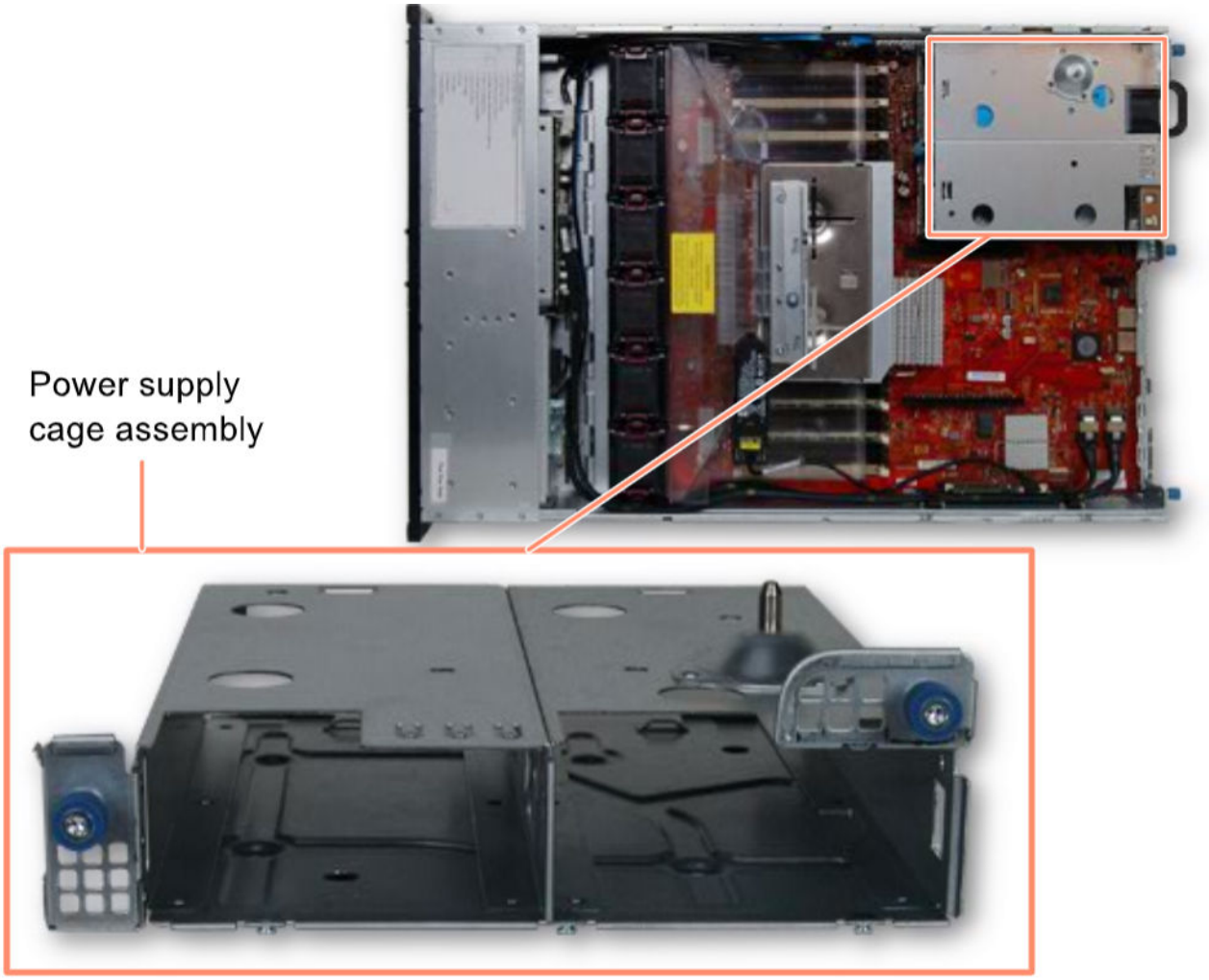
System battery



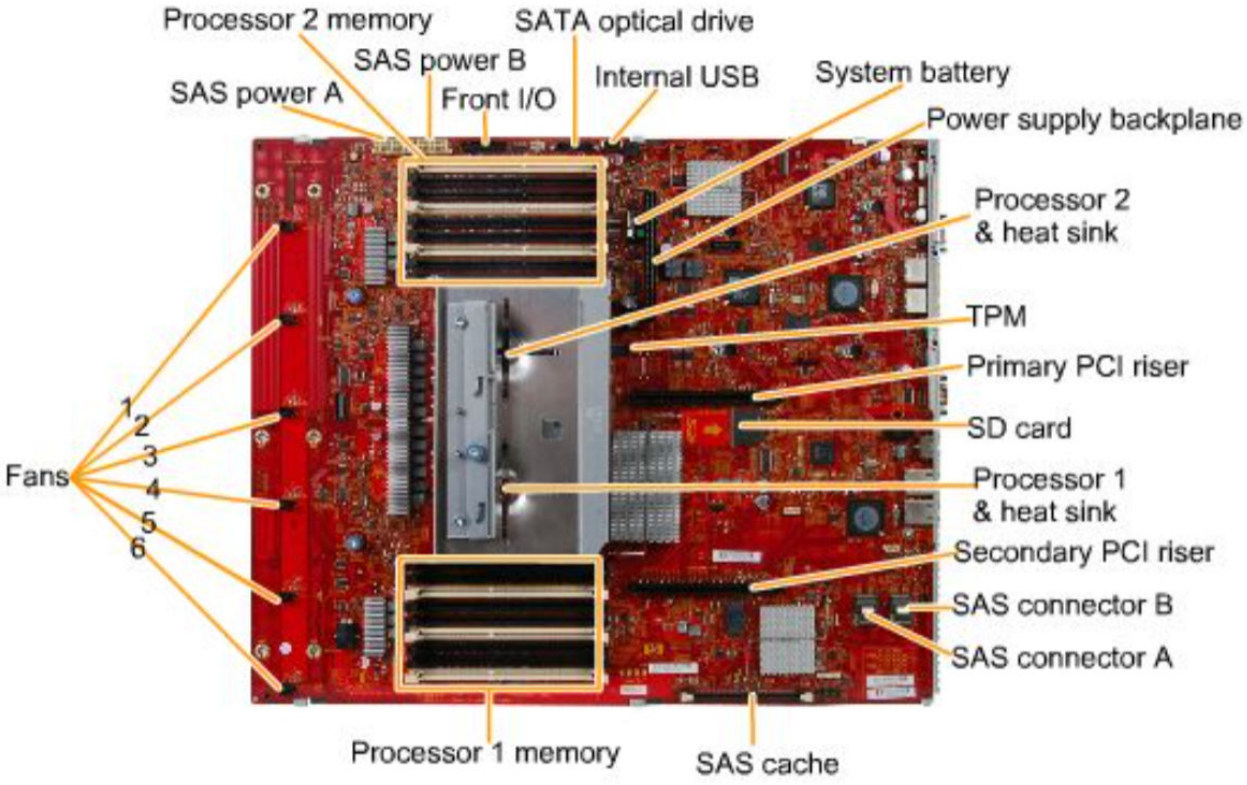
Power supply backplane



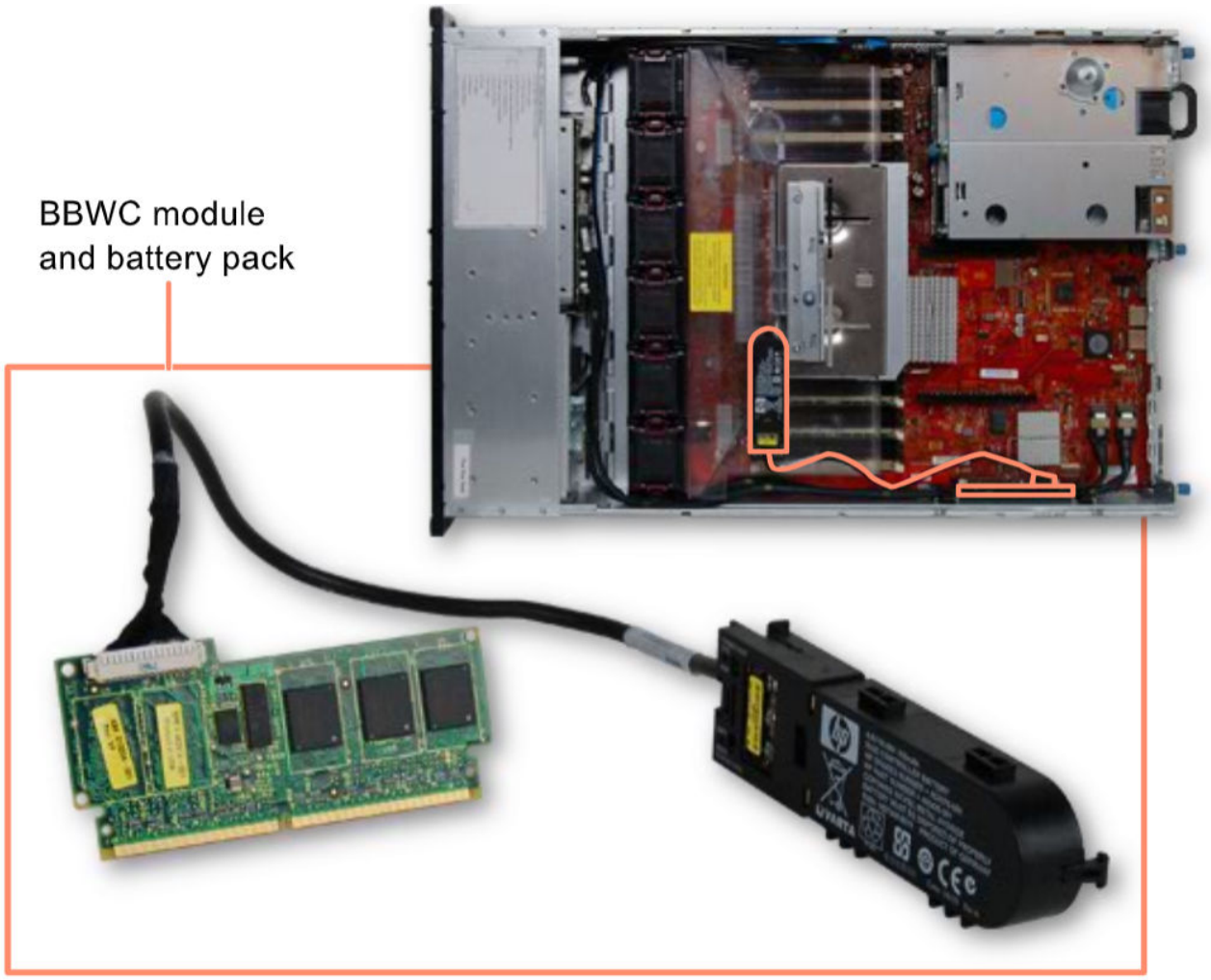
Power supply cage



System board



BBWC module and battery pack



Precautions

Safety considerations

Before perfoming service procedures, review all the safety information.

Preventing electrostatic discharge

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.

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.

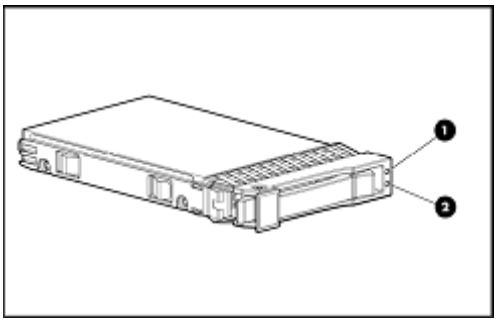
Tools And Materials

Tools used in removal and replacement

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

SAS Hard Drive LEDs And LED Combinations

SAS hard drive LEDs and LED combinations



1. Fault/UID LED (amber/blue)
2. Online LED (green)

Online/activityLED (green)	Fault/UID LED (amber/blue)	Interpretation
On, off, or flashing	Alternating amber and blue	The drive has failed, or a predictive failure alert has been received for this drive; it also has been selected by a management application.
On, off, or flashing	Steadily blue	The drive is operating normally, and it has been selected by a management application.
On	Amber, flashing regularly (1 Hz)	A predictive failure alert has been received for this drive. Replace the drive as soon as possible.
On	Off	The drive is online, but it is not active currently.
Flashing regularly (1 Hz)	Amber, flashing regularly (1Hz)	**Do not remove the drive. Removing a drive may terminate the current operation and cause data loss.** The drive is part of an array that is undergoing capacity expansion or stripe migration, but a predictive failure alert has been received for this drive. To minimize the risk of data loss, donot replace the drive until the expansion or migration is complete.
Flashing regularly (1 Hz)	Off	**Do not remove the drive. Removing a drive may terminate the current operation and cause data loss.** The drive is rebuilding, erasing, or it is part of an array that is undergoing capacity expansion or stripe migration.

Flashing irregularly	Amber, flashing regularly (1Hz)	The drive is active, but a predictive failure alert has been received for this drive. Replace the drive as soon as possible.
Flashing irregularly	Off	The drive is active, and it is operating normally.
Off	Steadily amber	A critical fault condition has been identified for this drive, and the controller has placed it offline. Replace the drive as soon as possible.
Off	Amber, flashing regularly (1Hz)	A predictive failure alert has been received for this drive. Replace the drive as soon as possible.
Off	Off	The drive is offline, a spare, or not configured as part of an array.

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.

Preparation Procedures

Preparation procedures

To access some components and perform certain service procedures, you must perform one or more of thefollowing 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 ().

- 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.

Hot-Plug SAS Hard Drive

https://support.hpe.com/hpesc/public/videoDisplay?videoId=vpsg00001905en_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 SAS and SATA hard drive LED combinations 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 server.

Hot-plug SAS hard drive replacement

To replace the SAS hard drive, reverse the removal procedure.

Hot-Plug Power Supply

https://support.hpe.com/hpesc/public/videoDisplay?videoId=vpsg00001906en_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.**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 : If only one hot-plug power supply is installed, power down the server and remove the power cord from the source.

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 from the bay.

Hot-plug power supply replacement

WARNING! To reduce the risk of electric shock or damage to the equipment, do not connectthe 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. Power on the server if it was not already on.
4. Confirm that the hot-plug power supply LED is green.
5. Confirm that front panel external health LED is green.

Front Right Bezel

https://support.hpe.com/hpesc/public/videoDisplay?videoId=vpsg00001907en_us&noframe

Front right bezel removal

Before you begin : Extend or remove the server from the rack.

1. Remove the three 4mm Torx T-10 screws that secure the front right bezel to the front of the server chassis.
2. Remove the front right bezel.

Front right bezel replacement

To replace the front right bezel, reverse the removal procedure.

Access Panel

https://support.hpe.com/hpesc/public/videoDisplay?videoId=vpsg00001908en_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. If the server supports hot-plug components, minimize the amount of time the access panel is open.

Before you begin : If removing or installing a non-hot-pluggable component, power down the server. Extend or remove the server from the rack.

Note: The server ships with a Torx T-10 tool attached to the rear of the server for your use.

1. Turn the captive Torx T-10 screw one quarter turn counter clockwise to unlock the hood latch securing the access panel to the server.
2. Lift up on the hood latch, sliding the access panel back.
3. Lift the access panel up and off of the server chassis.

Access panel replacement

To replace the access panel, reverse the removal procedure.

Optical Drive

https://support.hpe.com/hpesc/public/videoDisplay?videoId=vpsg00001909en_us&noframe

Optical 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 : Power down the server, extend or remove the server from the rack, and remove the access panel.

1. Disconnect the SATA power and data cable from the rear of the optical drive.
2. Press down on the release latch and nudge the rear of the optical drive towards the front of the server.

3. Slide the optical drive out the front of the server.
4. If necessary, remove the optical drive bracket, held on by two Phillips-head P1 screws, for use on the replacement optical drive.

Optical drive replacement

To replace the optical drive, reverse the removal procedure.

Optical Drive Cage

https://support.hpe.com/hpesc/public/videoDisplay?videoId=vpsg00001910en_us&noframe

Optical drive cage 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 : Power down the server, extend or remove the server from the rack. Remove the access panel and the optical drive.

1. Remove the two 6 mm Torx T-15 screws that secure the optical drive cage to the chassis.
2. Slide the optical drive cage out the front of the server.

Optical drive cage replacement

To replace the optical drive cage, reverse the removal procedure.

Hot-Plug Fan

https://support.hpe.com/hpesc/public/videoDisplay?videoId=vpsg00001911en_us&noframe

Hot-plug fan removal

Before you begin : Extend the server from the rack and remove the access panel.

1. Grasp the fan by the finger grooves.

2. Pull the fan straight up and out of the fan cage.

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.

Hot-plug fan replacement

1. Grasp the fan by the finger grooves.
2. Lower the fan straight down into the fan cage until it is fully seated and clicks into place.

Hard Drive Backplane

https://support.hpe.com/hpesc/public/videoDisplay?videoId=vpsg00001912en_us&noframe

Hard drive backplane removal

Before you being: Power down the server, extend or remove the server from the rack. Remove the access panel and all hot-plug SAS hard drives.

Note: Shown here is the procedure for the SFF hard drive backplane.

1. Disconnect the SAS cables from the SFF hard drive backplane.
2. Disconnect the power connector from the SFF hard drive backplane.
3. Extend the release pin at the bottom of the SFF hard drive backplane and carefully pull the SFF hard drive backplane up enough to clear the drive cage guide hooks.
4. Maneuver the SFF hard drive backplane up and out of the server chassis.**Note:** The LFF hard drive backplane extends the full width of the chassis and contains two release pins near the top of the backplane, but is otherwise removed in the same way.

Hard drive backplane replacement

To replace the hard drive backplane, reverse the removal procedure.

Hard Drive Cage

https://support.hpe.com/hpesc/public/videoDisplay?videoId=vpsg00001913en_us&noframe

Hard drive cage removal

Before you being: Power down the server, extend or remove the server from the rack. Remove the access panel, all hot-plug SAS hard drives, and hard drive backplane.

Note: Shown here is the procedure for the SFF hard drive cage.

1. Remove the two 6 mm Torx T-15 screws that secure the SFF hard drive cage to the chassis.
2. Slide the SFF hard drive cage out the front of the server.**Note:** The LFF hard drive cage extends the full width of the chassis and is secured to the server chassis by eight Torx T-15 screws, four on each side and is also removed by sliding it out the front of the chassis.

Hard drive cage replacement

To replace the hard drive cage, reverse the removal procedure.

PCI Riser Cage

https://support.hpe.com/hpesc/public/videoDisplay?videoId=vpsg00001914en_us&noframe

PCI riser cage removal

Before you begin : Power down the server, extend or remove it from the rack, and remove the access panel.

1. Disconnect any external or internal cables connected to installed expansion boards.
2. Loosen the three captive Torx T-15 thumbscrews that secure the PCI riser cage to the server chassis.
3. Pull up on the two side release levers to disengage the PCI riser cage from the system board.
4. Lift the PCI riser up and off of the server chassis.

PCI riser cage replacement

To replace the PCI riser cage, reverse the removal procedure.

Expansion Board Slot Covers

https://support.hpe.com/hpesc/public/videoDisplay?videoId=vpsg00001915en_us&noframe

Expansion board slot covers removal

Before you begin : Power down the server, extend or remove it from the rack. Remove the access panel and the PCI riser cage.

1. For slots 1 and 4, press in and swing out the blue release lever that holds the expansion board or slot cover in place.
2. For slots 2 and 3, press in and lift out the blue release lever that holds the expansion board or slot cover in place.
3. For slots 5 and 6, press down and swing down the blue release lever that holds the expansion board or slot cover in place.

Expansion board slot covers replacement

To replace the expansion board or slot cover, reverse the appropriate removal procedure.

PCI Riser Card

https://support.hpe.com/hpesc/public/videoDisplay?videoId=vpsg00001916en_us&noframe

PCI riser card removal

Before you begin : Power down the server, extend or remove it from the rack. Remove the access panel, PCI riser cage, and any expansion boards connected to the PCI riser card to be removed.

1. Loosen the captive Torx T-15 thumbscrew that secures the PCI riser card to the PCI riser cage.
2. Carefully disengage the PCI riser card from the guide slot and guide pin that hold the PCI riser card in place.

PCI riser card replacement

To replace the PCI riser card, reverse the removal procedure.

Battery Backed Write Cache Module And Battery Pack

https://support.hpe.com/hpesc/public/videoDisplay?videoId=vpsg00001917en_us&noframe

Battery-backed write cache module and battery pack removal

Before you begin : Power down the server, extend or remove it from the rack. Remove the access panel, and the PCI riser cage.**Caution!** Do not detach the cable that connects the battery pack to the cache module until the data has been recovered. Detaching the cable causes any unsaved data in the cache module to be lost.

1. Release the battery pack cable from the guide tabs on the top of the air baffle, and lift the battery pack out of its holder on the air baffle.
2. Open the cache module slot latches.
3. Lift the battery-backed write cache module and out of the cache module slot.
4. Disconnect the battery pack cable from the connector on the cache module.**Note:** To recover cached data from a failed server, refer to the maintenance service guide.

Battery-backed write cache module and battery pack replacement

To replace the battery-backed write cache module and battery pack, reverse the removal procedure.

Air Baffle

https://support.hpe.com/hpesc/public/videoDisplay?videoId=vpsg00001918en_us&noframe

Air baffle removal

Before you begin: Power down the server, extend or remove the server from the rack, and remove the access panel.**Caution! If the server includes a battery pack, do not detach the cable that connects the battery pack to the cache module. Detaching the cable causes any unsaved data in the cache module to be lost.**

1. If present, and without detatching them from their cache modules, temporarily remove all battery packs from its holder on top of the air baffle and set aside.
2. Lift the air baffle straight up and out of the server chassis.

Air baffle replacement

1. Align the air baffle guide slot with the ridge on the top of the heat sink bracket and lower the air baffle into place.
2. Route any cabling that was unrouted during the replacement of the air baffle.
3. Replace all battery packs removed earlier.

Fan Cage

https://support.hpe.com/hpesc/public/videoDisplay?videoId=vpsg00001919en_us&noframe

Fan cage removal

Before you begin: Power down the server, extend or remove the server from the rack, and remove the access panel.

1. Remove all hot-plug fans and fan blanks.
2. Loosen the six captive Torx T-15 screws that secure the fan cage to the system board.
3. Lift the fan cage up and out of the server chassis.

Fan cage replacement

To replace the fan cage, reverse the removal procedure. Be sure to replace all hot-plug fans and fan blanks, making sure that all hot-plug fans are fully seated. They will click into place when fully seated.

Power Supply Backplane

https://support.hpe.com/hpesc/public/videoDisplay?videoId=vpsg00001920en_us&noframe

Power supply backplane removal

Before you begin: Power down the server, extend or remove the server from the rack. Remove the hot-pug power supplies, access panel, and the PCI riser cage.

1. Loosen the captive Torx T-15 thumbscrew that secures power supply backplane to the power supply cage assembly.
2. Pull up on power supply backplane to disconnect it from system board.
3. Lift the power supply backplane off of its guide pins and carefully maneuver the power supply backplane out from under the power supply cage and out of the server chassis.

Power supply backplane replacement

To replace the power supply backplane, reverse the removal procedure.

DIMMs

https://support.hpe.com/hpesc/public/videoDisplay?videoId=vpsg00001921en_us&noframe

DIMMs

Before you begin: Power down the server, extend or remove the server from the rack, and remove the access panel.If installed, remove the BBWC battery pack or the FBWC capacitor pack, but do not disconnect it from the server at this time. Remove the air baffle.

DIMMs removal

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

https://support.hpe.com/hpesc/public/videoDisplay?videoId=vpsg00001922en_us&noframe

Heat sink removal

Before you begin: Power down the server, extend or remove the server from the rack, and remove the access panel. If installed, remove the BBWC battery pack or the FBWC capacitor pack, but do not disconnect it from the server at this time. Remove the air baffle.

1. Pull up on the release lever to unlock the heat sink retaining bracket.
2. Rotate the top of the retaining bracket until it is fully open.
3. Lift the heat sink straight up and out of the chassis, being careful not to touch or spread the remaining thermal grease on the bottom.
4. If you are not replacing the processor, use an alcohol wipe to clean off the old thermal grease. Allow the alcohol to evaporate before you apply new thermal grease.

Heat sink replacement

1. Apply thermal grease in an -S- pattern on the processor.**Note:** A thermal grease pattern of five big dots is also acceptable.
2. If you are reinstalling the old heat sink, use an alcohol wipe to clean off the old thermal grease. Allow the alcohol to evaporate before you continue.**Note:** If you are installing new heat sink, you may need to remove a cover from the bottom which protects a factory-applied layer of thermal interface media.**Caution! After the cover is removed, do not touch the thermal interface media.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.**
3. Align the three heat sink guide pins with the three holes on the bottom of the heat sink.
4. Lower the heat sink into place.
5. Rotate the heat sink retaining bracket over the heat sink and close the release lever to secure the heat sinks.

Processor

https://support.hpe.com/hpesc/public/videoDisplay?videoId=vpsg00001923en_us&noframe

Processor removal

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

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

- Never install or remove a processor without using the processor installation tool.
- Do not touch the processor socket contacts.
- Do not tilt or slide the processor when lowering the processor into the socket.

IMPORTANT: If installing a processor with a faster speed, update the system ROM before installing the processor.

Note: Locate and download the latest ROM version from the HP website (**http://www.hp.com/support**). Follow the instructions on the website to update the system ROM.

Before you begin: Power down the server. Extend or remove the server from the rack, and remove the access panel. If installed, remove the BBWC battery pack or the FBWC capacitor pack, but do not disconnect it from the server at this time. Remove the air baffle and heat sink.

- Never install or remove a processor without using the processor installation tool.
- Do not touch the processor socket contacts.
- Do not tilt or slide the processor when lowering the processor into the socket.

1. Open the processor locking lever and the processor socket retaining bracket.
2. Align the processor installation tool over the processor with the locking lever graphic correctly oriented.
3. Press in on the release tabs on the side of the tool and lower it onto the processor.
4. With the processor in place, release the tabs to firmly grasp the processor into the mouth of the tool.
5. Lift the processor straight up and out of the socket.
6. To help ensure that the processor remains in the tool, carefully rotate the tool, and then push in and release the tabs to secure the processor in the tool.

Processor replacement

CAUTION: Failure to completely open the processor locking lever prevents the processor from seating during installation, leading to hardware damage.

1. Insert the processor into the processor installation tool. Handle the processor by the edges only, and do not touch the bottom of the processor, especially the contact area.**CAUTION:** Ensure that the alignment pins on the tool are aligned with the cutouts on the processor. If the processor is not inserted correctly, it may be destroyed.**IMPORTANT: Be sure the processor remains inside the processor installation tool.**
2. Align the processor installation tool with the socket, and then install the processor.
3. Press the tabs on the processor installation tool to separate it from the processor, and then remove the tool.
4. Close the processor socket retaining bracket and the processor locking lever.**CAUTION:** Be sure to close the processor socket retaining bracket before closing the processor locking lever. The lever should close without resistance. Forcing the lever closed can damage the processor and socket, requiring system board replacement.**CAUTION:** To avoid severely damaging the processor, be sure to apply thermal grease before replacing the heat sink.

System Battery

https://support.hpe.com/hpesc/public/videoDisplay?videoId=vpsg00001924en_us&noframe

System battery removal

Before you begin: Power down the server, extend or remove it from the rack. Remove the access panel and PCI riser cage. 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 inside of the server, place the battery fully into its retaining bracket with the release tab holding the battery in place.

System Insight Display

https://support.hpe.com/hpesc/public/videoDisplay?videoId=vpsg00001925en_us&noframe

System insight display removal

Before you begin: Power down the server, extend or remove the server from the rack. Remove the access panel, and PCI riser cage.

1. Disconnect the System Insight Display cable from the system board.
2. Remove the 5mm Torx T-15 screw that secures the System Insight Display cage to the server chassis.
3. Slide the System Insight Display cage out of the server.

System insight display replacement

To replace the System Insight Display board, reverse the removal procedure.

Front Left Bezel

https://support.hpe.com/hpesc/public/videoDisplay?videoId=vpsg00001926en_us&noframe

Front left bezel removal

1. Remove the 5mm Torx T-15 screw that secures the System Insight Display cage to the server chassis.
2. Partially slide the System Insight Display cage out of the server.
3. Remove the three 4mm Torx T-10 screws that secure the front left bezel to the front of the server chassis.
4. Remove the front left bezel.

Front left bezel replacement

To replace the front left bezel, reverse the removal procedure.

Power Supply Cage Assembly

https://support.hpe.com/hpesc/public/videoDisplay?videoId=vpsg00001927en_us&noframe

Power supply cage assembly removal

Before you begin: Power down the server, extend or remove the server from the rack. Remove the hot-plug power supplies, access panel, PCI riser cage, and power supply backplane. . If installed, remove the BBWC battery pack or the FBWC capacitor pack, but do not disconnect it from the server at this time. Remove the air baffle.

1. Remove the 5mm Torx T-15 retaining screw that secures the system board to the rear of the server chassis.
2. Loosen the two captive Torx T-15 thumbscrews that secure the system board to the server chassis.
3. Slide the system board forward until it stops.
4. Remove the four 5mm Torx T-15 screws that secure the power supply cage assembly to the system board.
5. Lift the power supply cage assembly up and out of the server.

Power supply cage assembly replacement

To replace the power supply cage assembly, reverse the removal procedure.

System Board

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System board removal

Before you begin: Power down the server, extend or remove the server from the rack. Remove the hot-plug power supplies, access panel, PCI riser cage, power supply backplane, all hot-plug fans, and fan cage. If installed, remove the BBWC battery pack or the FBWC capacitor pack, but do not disconnect it from cache module at this time. Remove the air baffle, Remove all DIMMs, heat sinks and processors, and power supply cage assembly.

1. If installed, remove the cache module from the system board without disconnecting it from the battery pack.
2. Disconnect all cables from the system board.**Note:** Take care to hold the system board in place as you remove the cables. As part of the power supply cage assembly removal, the two thumbscrews that secured the system board to the chassis have already been loosened and the system board slid forward.
3. Carefully lift the system board out of the 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.