HPE ProLiant DL380e 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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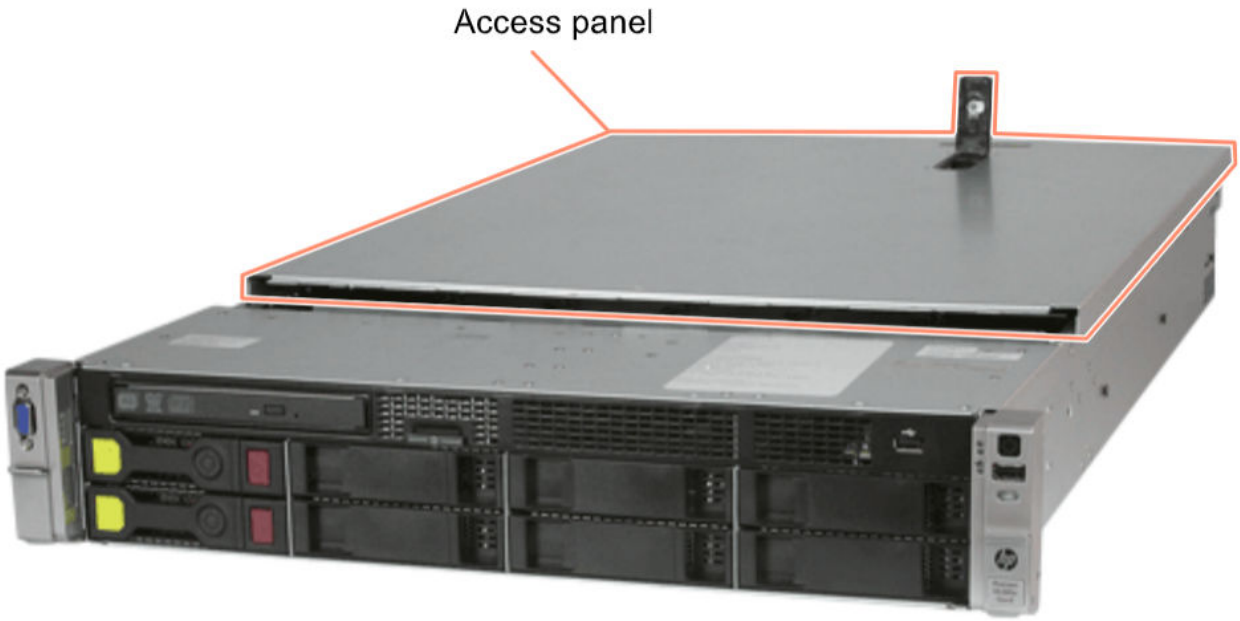
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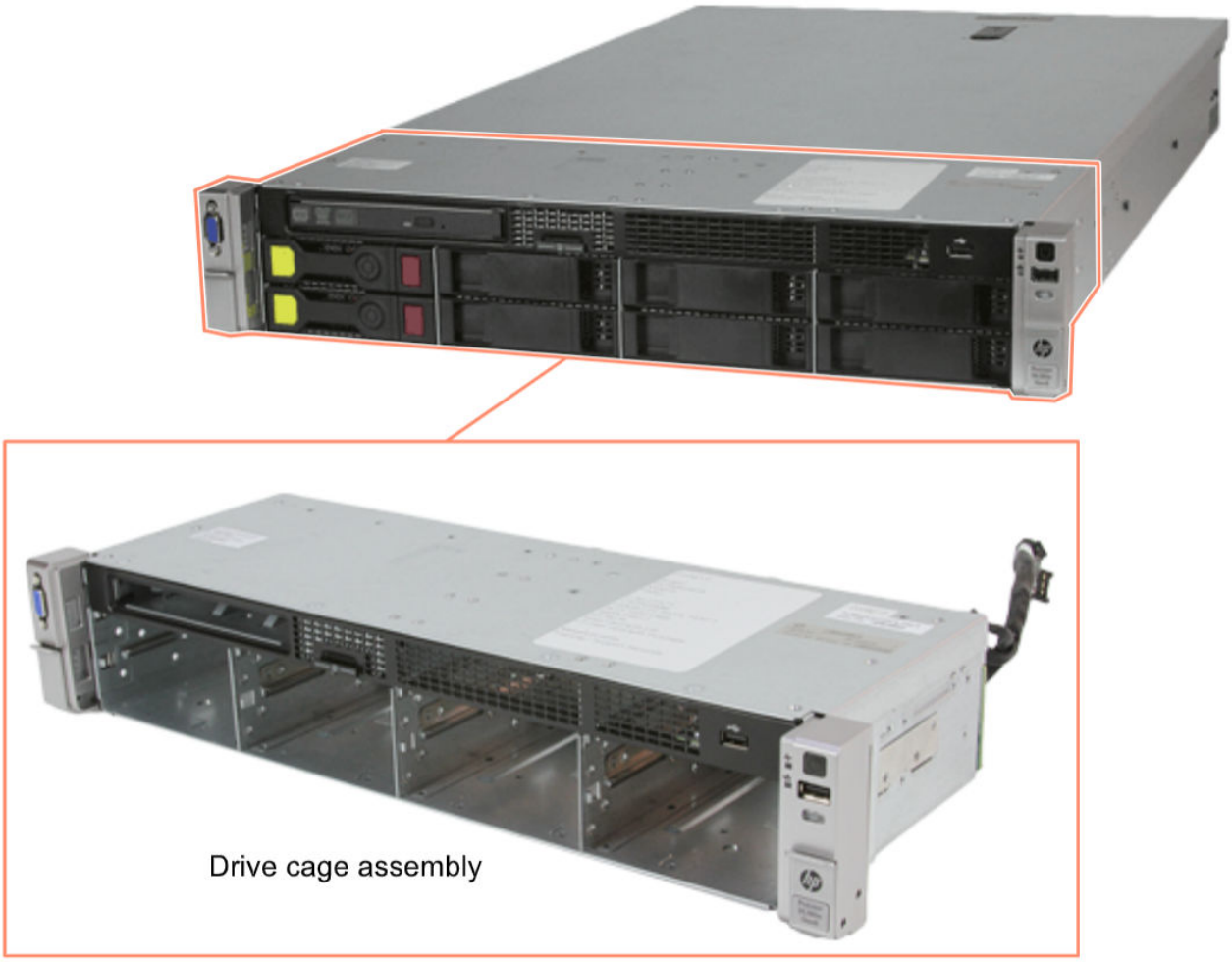
Front view



Access panel



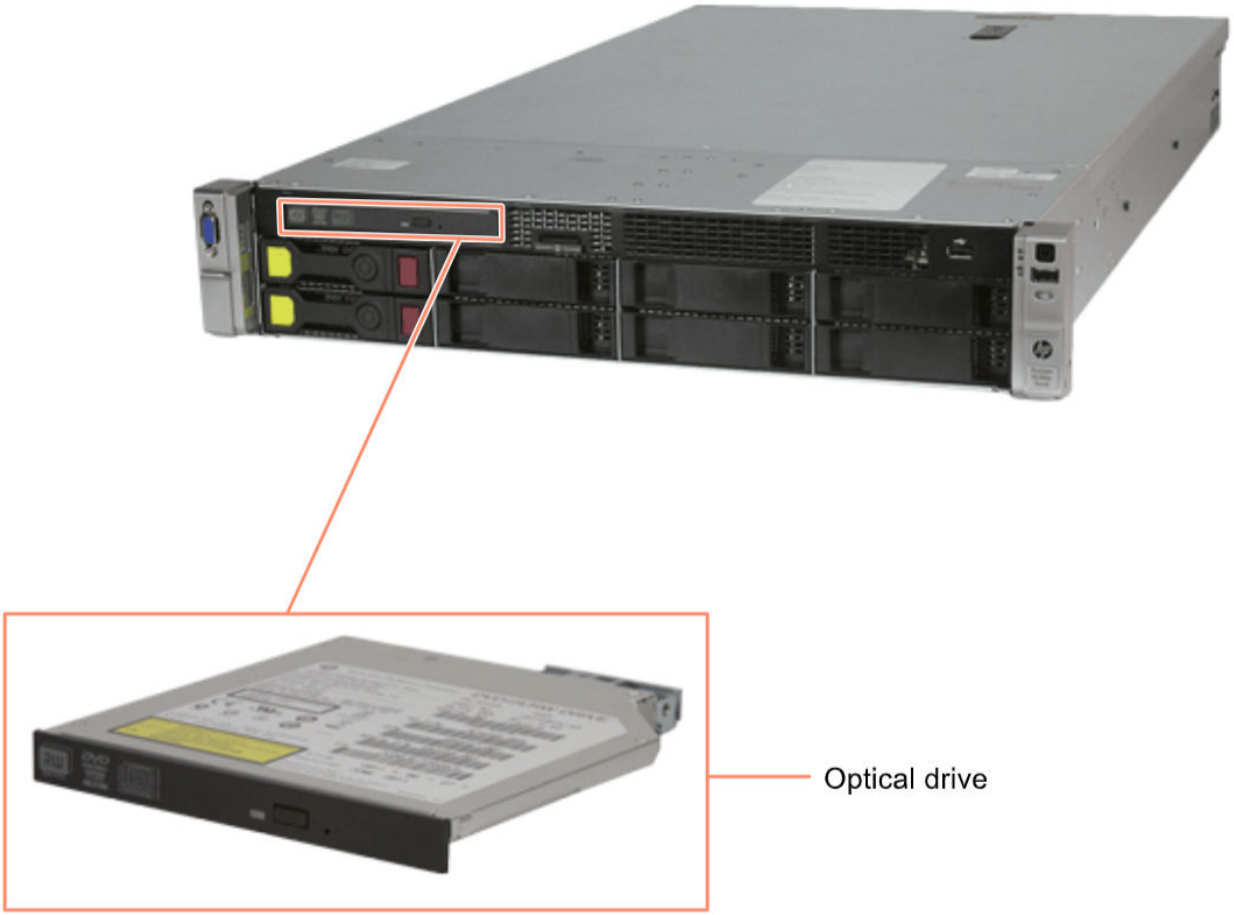
Drive cage assembly



Hot-plug hard drive and blank



Optical drive



Back view



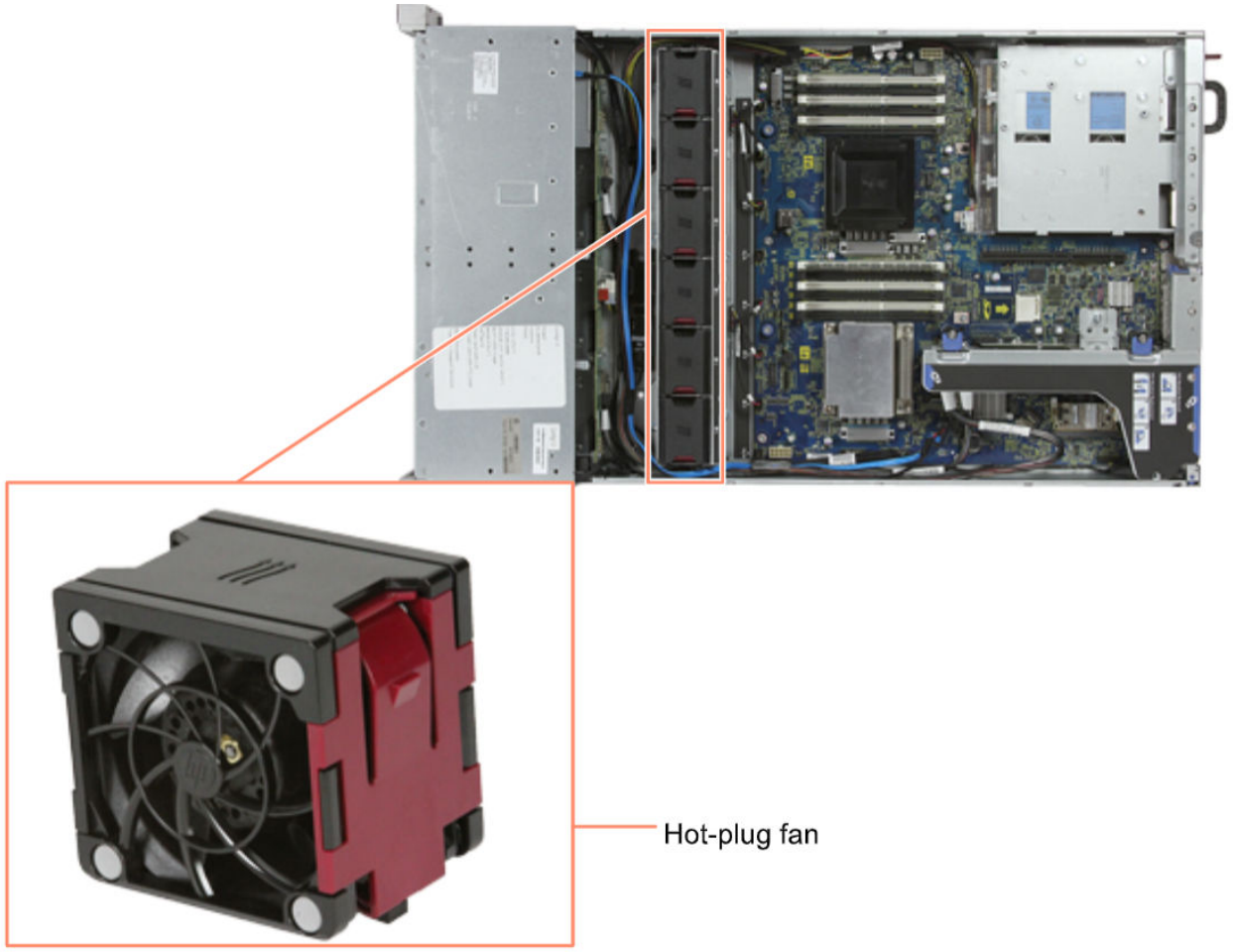
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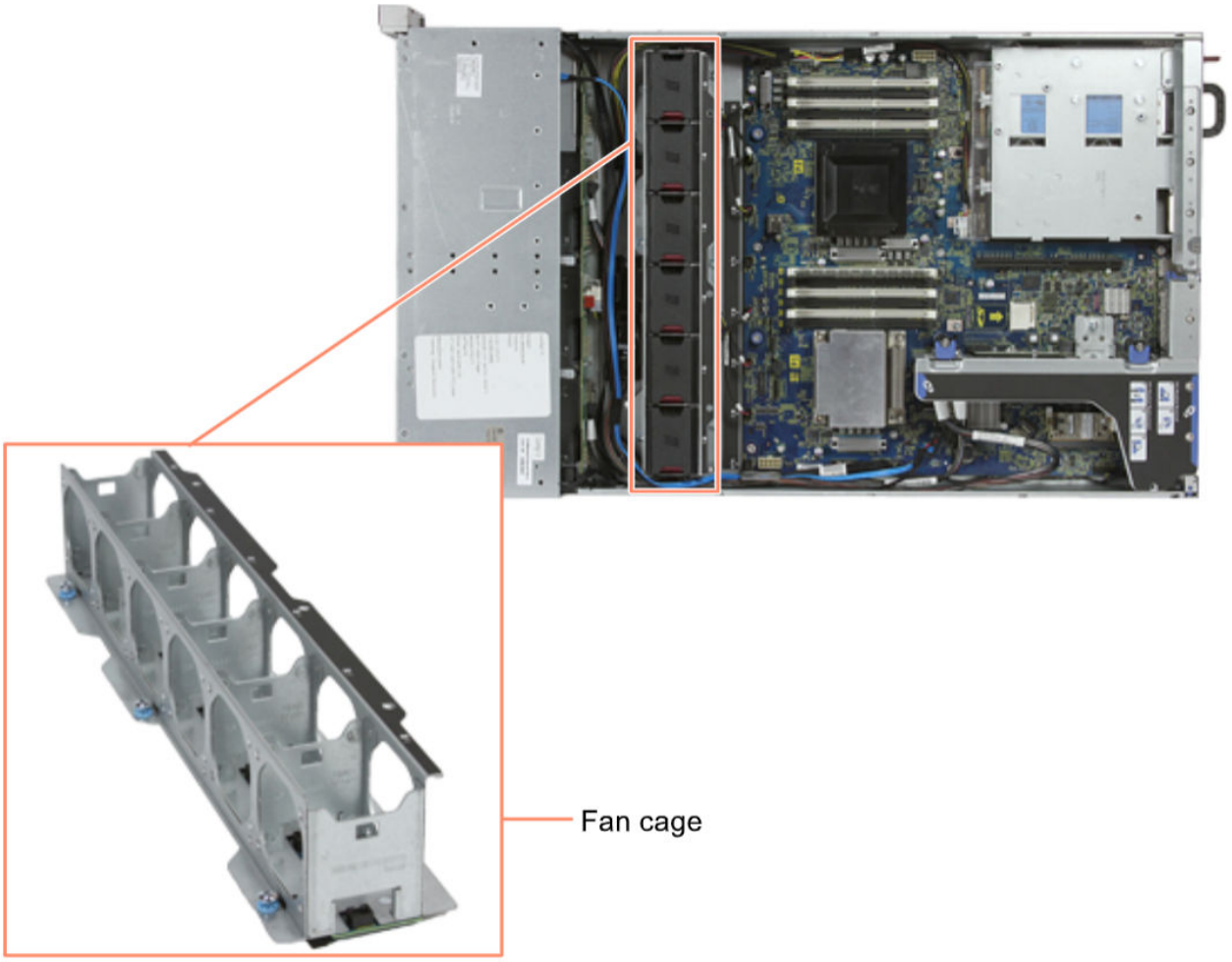
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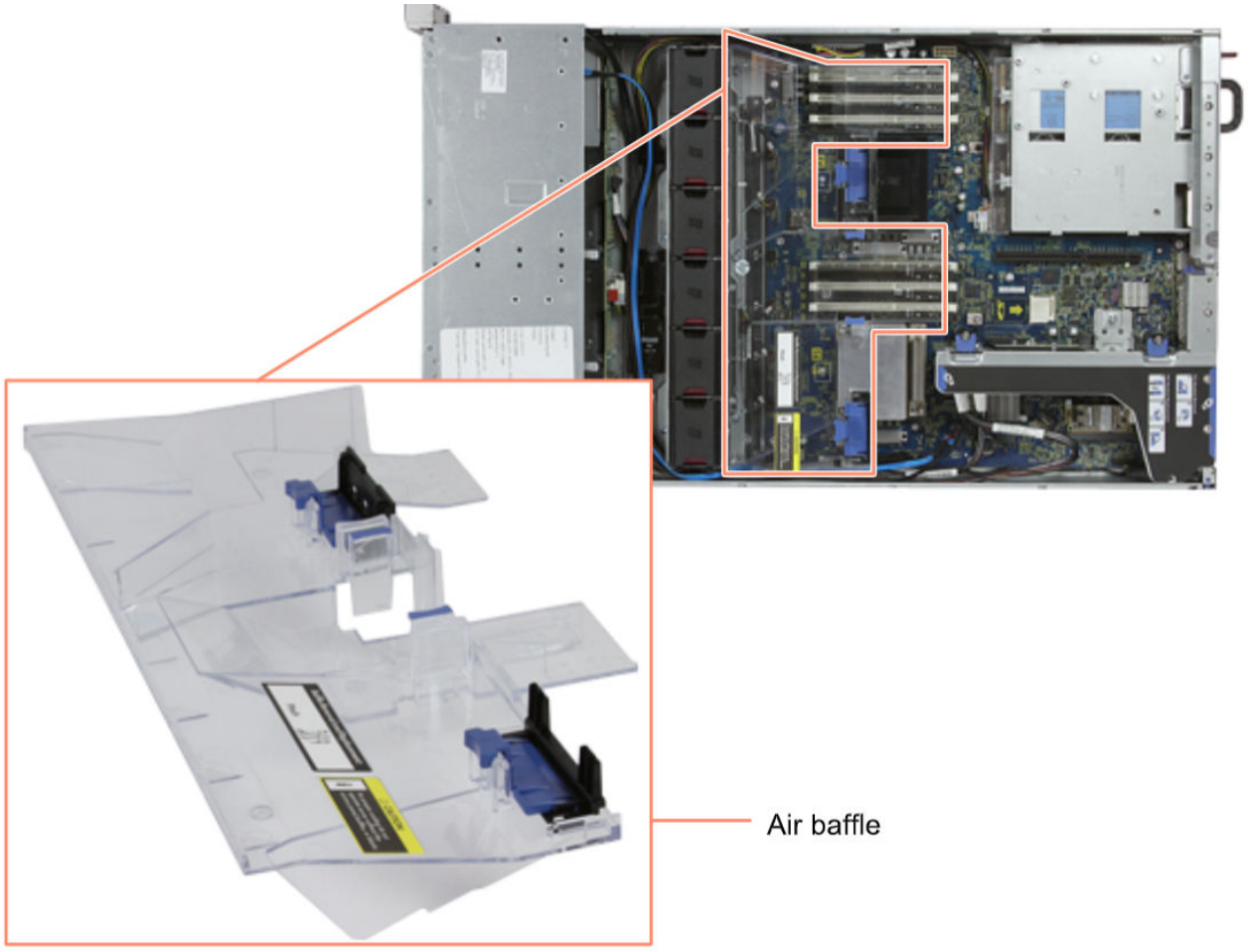
Hot-plug fan



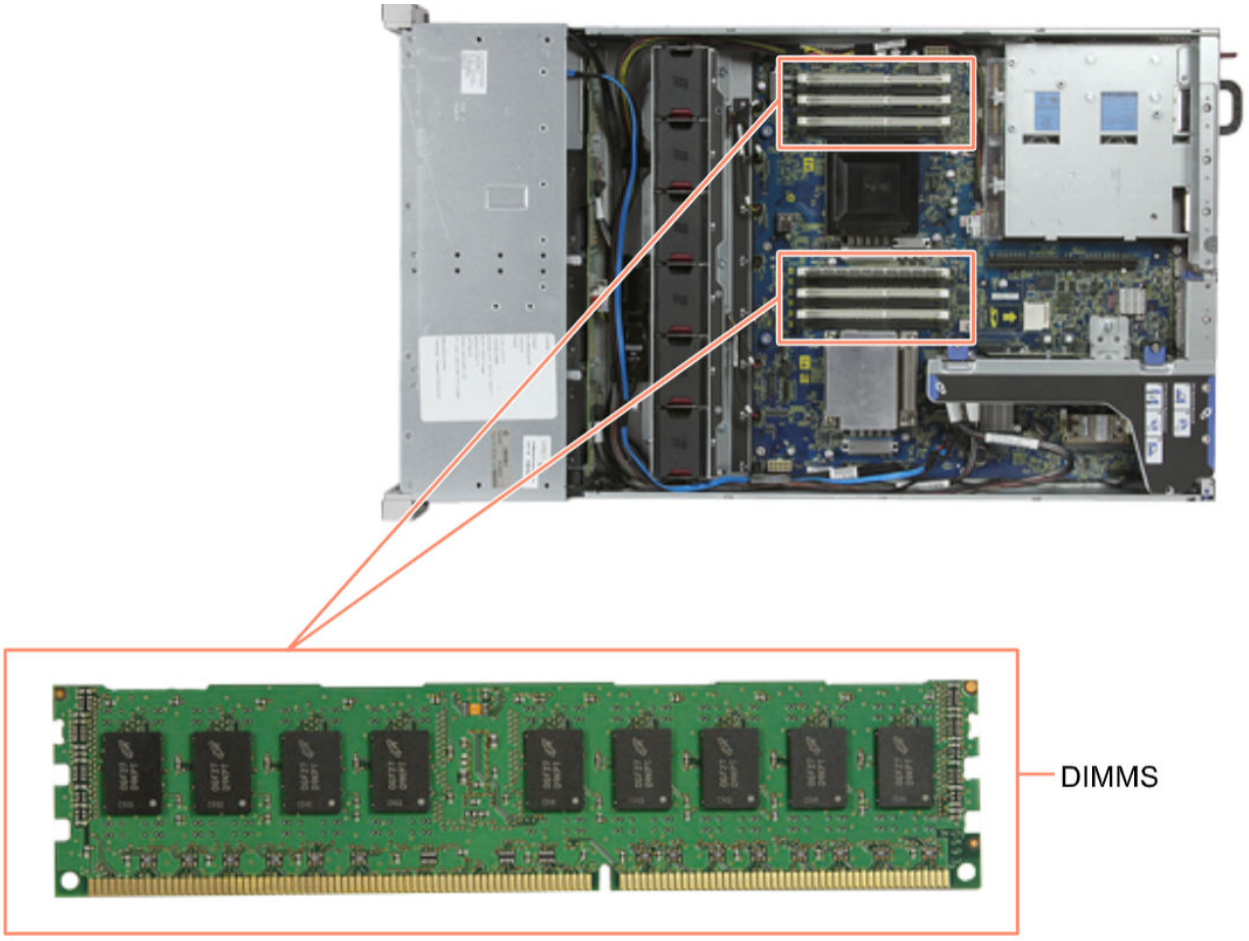
Fan cage



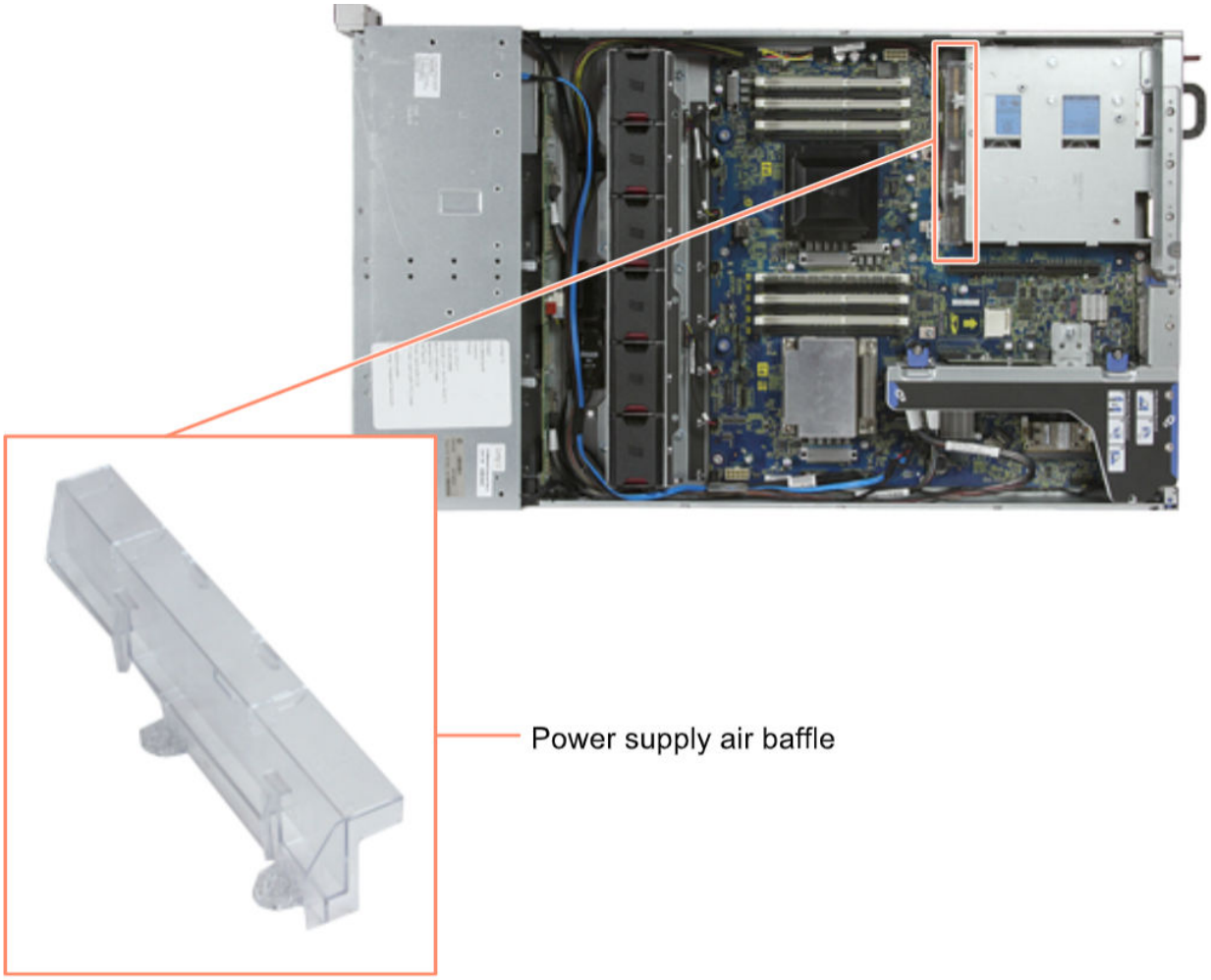
Air baffle



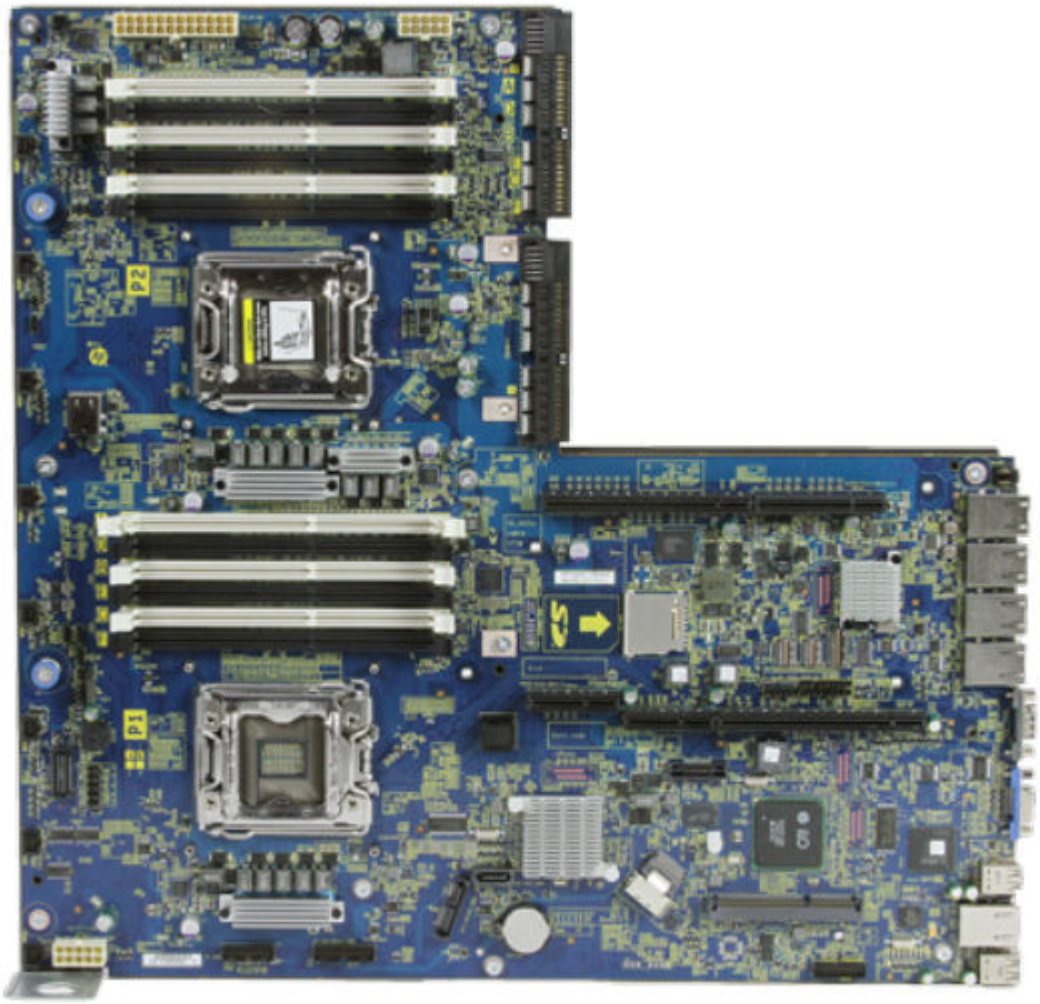
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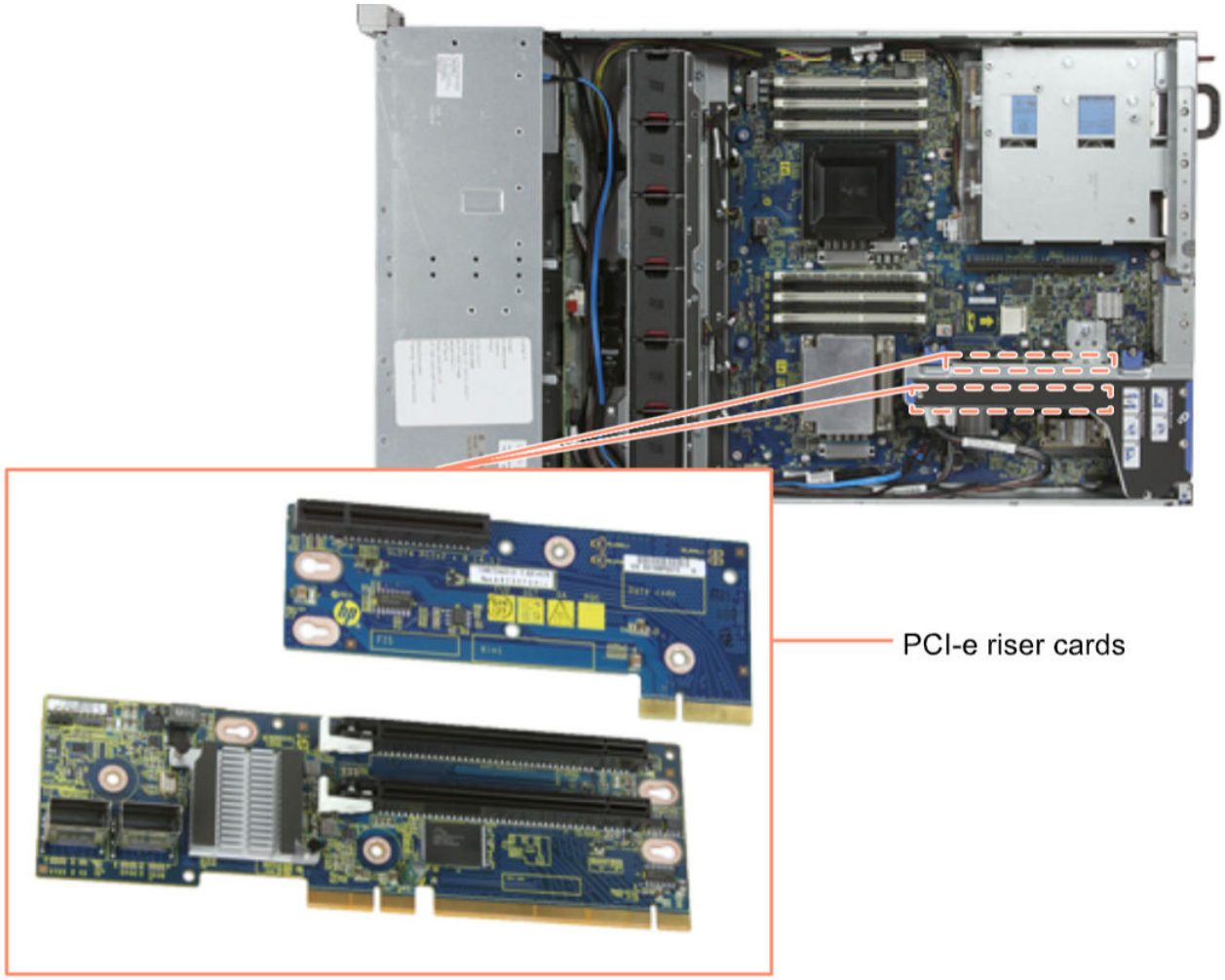
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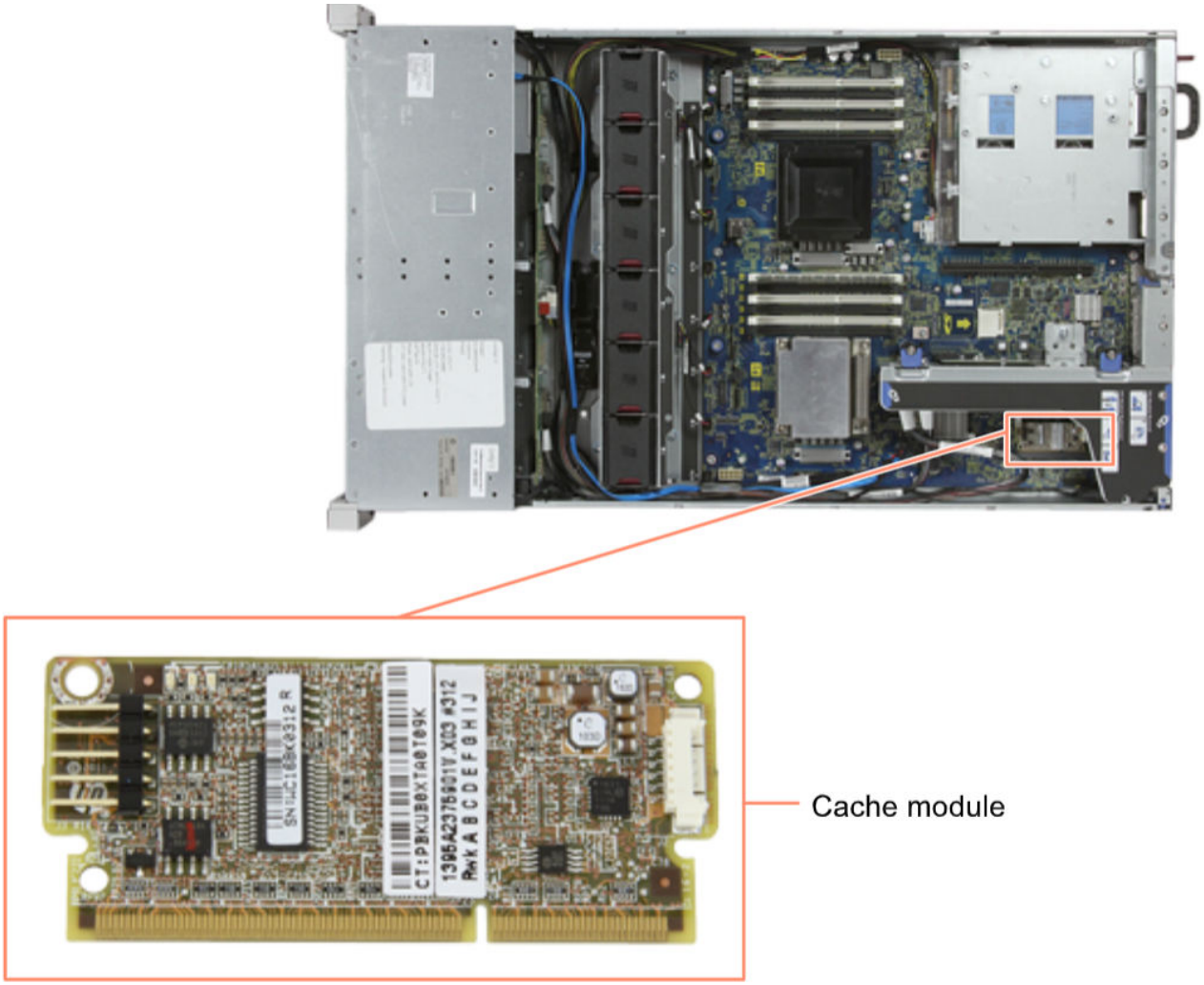
System board



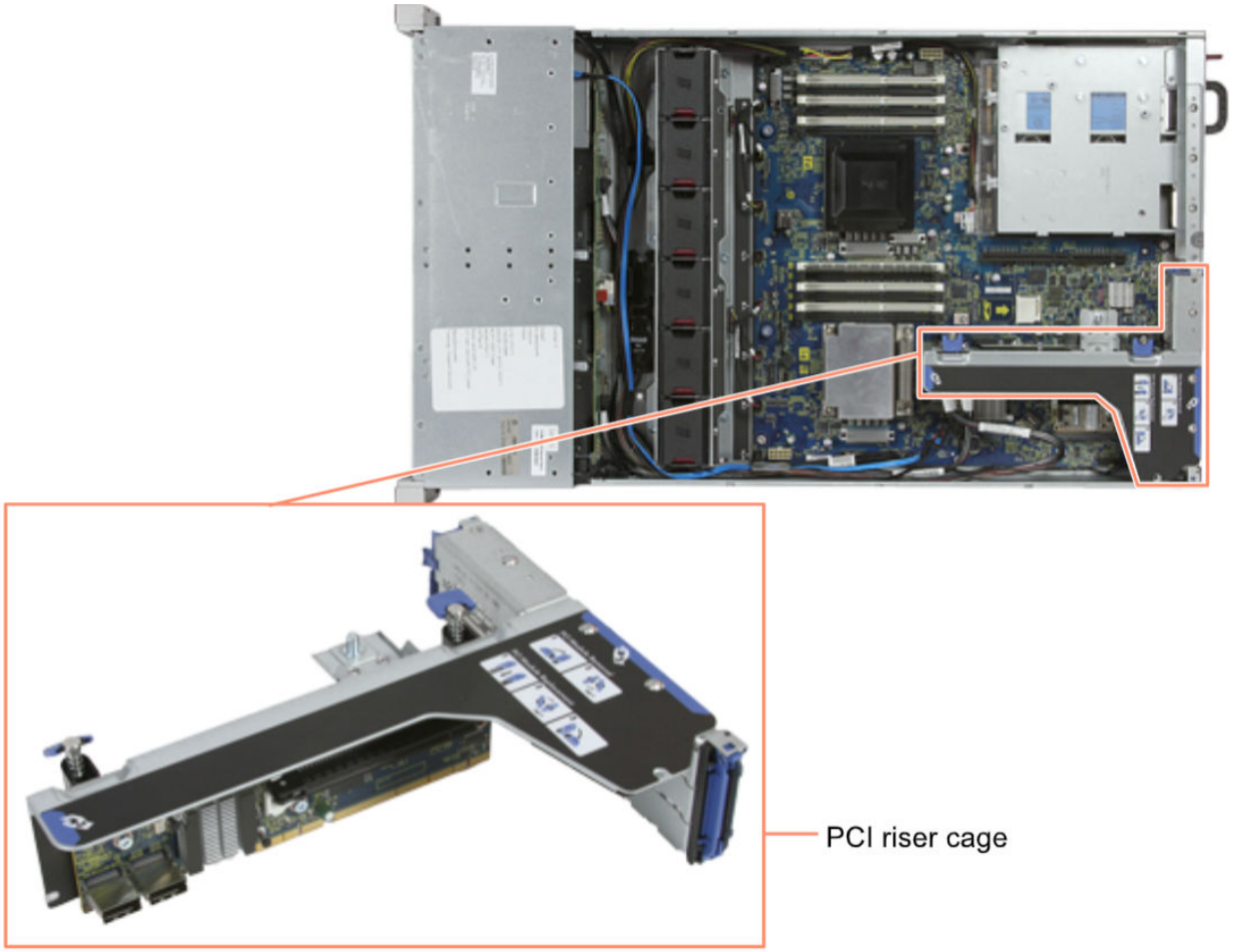
PCI-e riser card



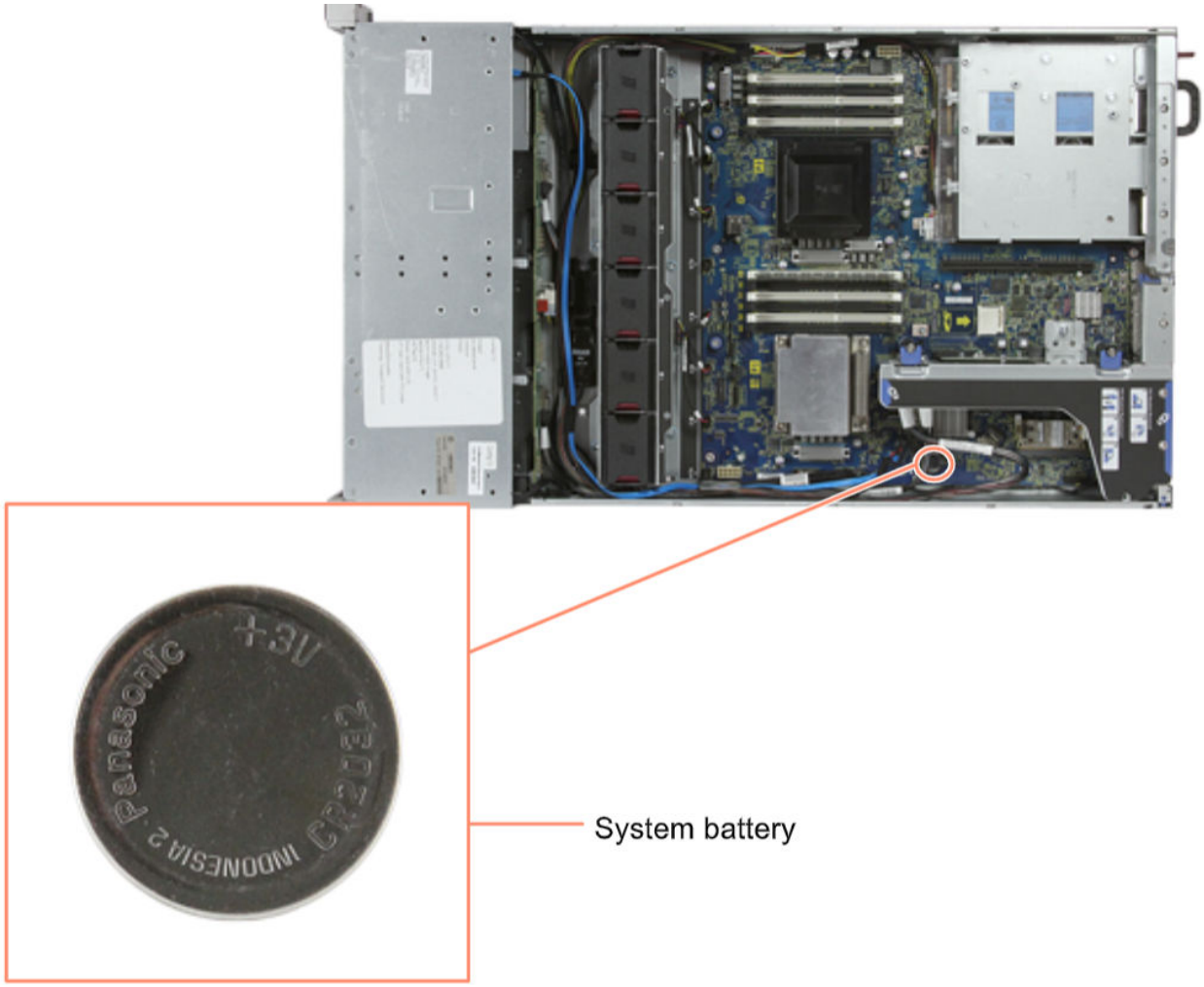
Cache module



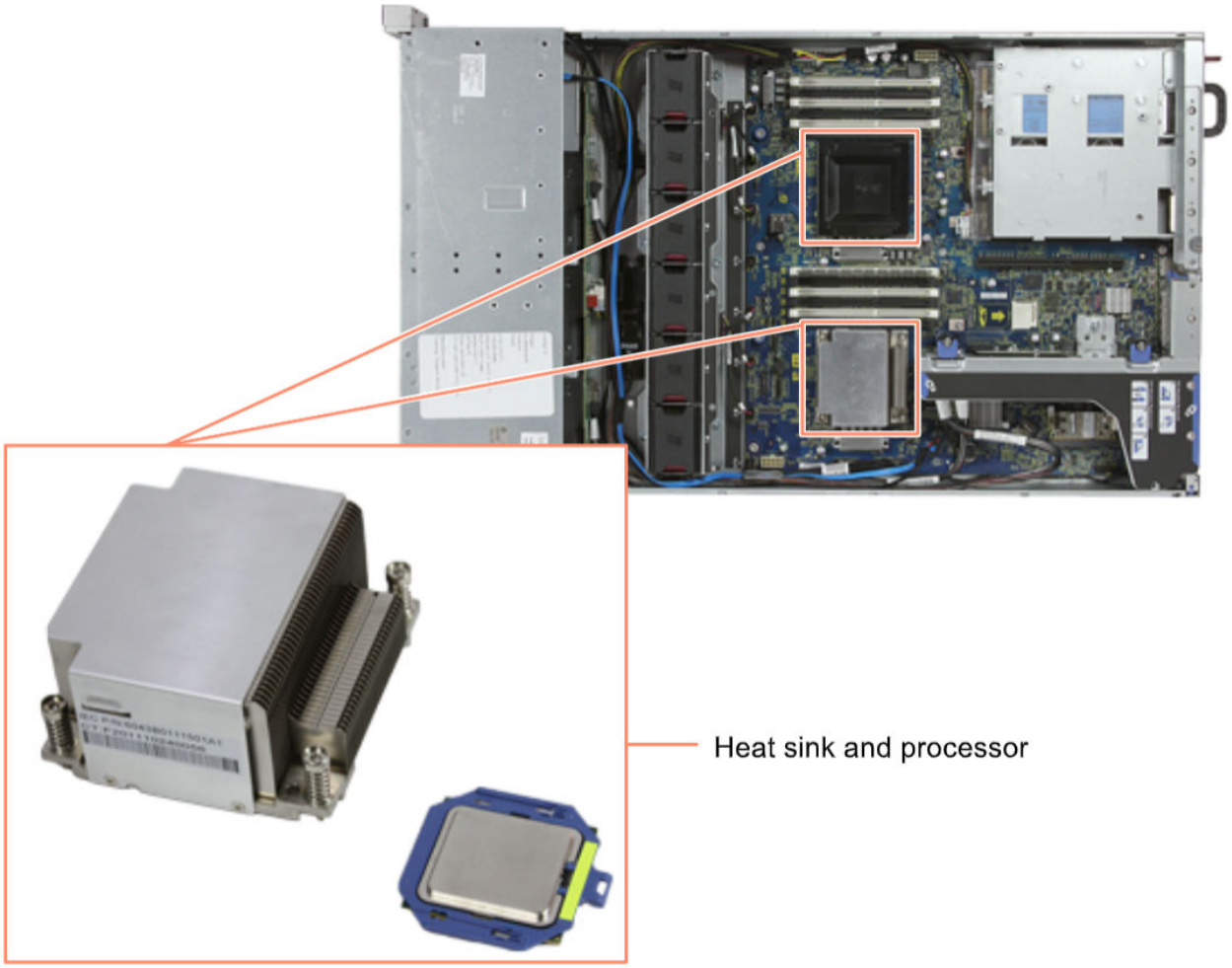
PCI riser cage



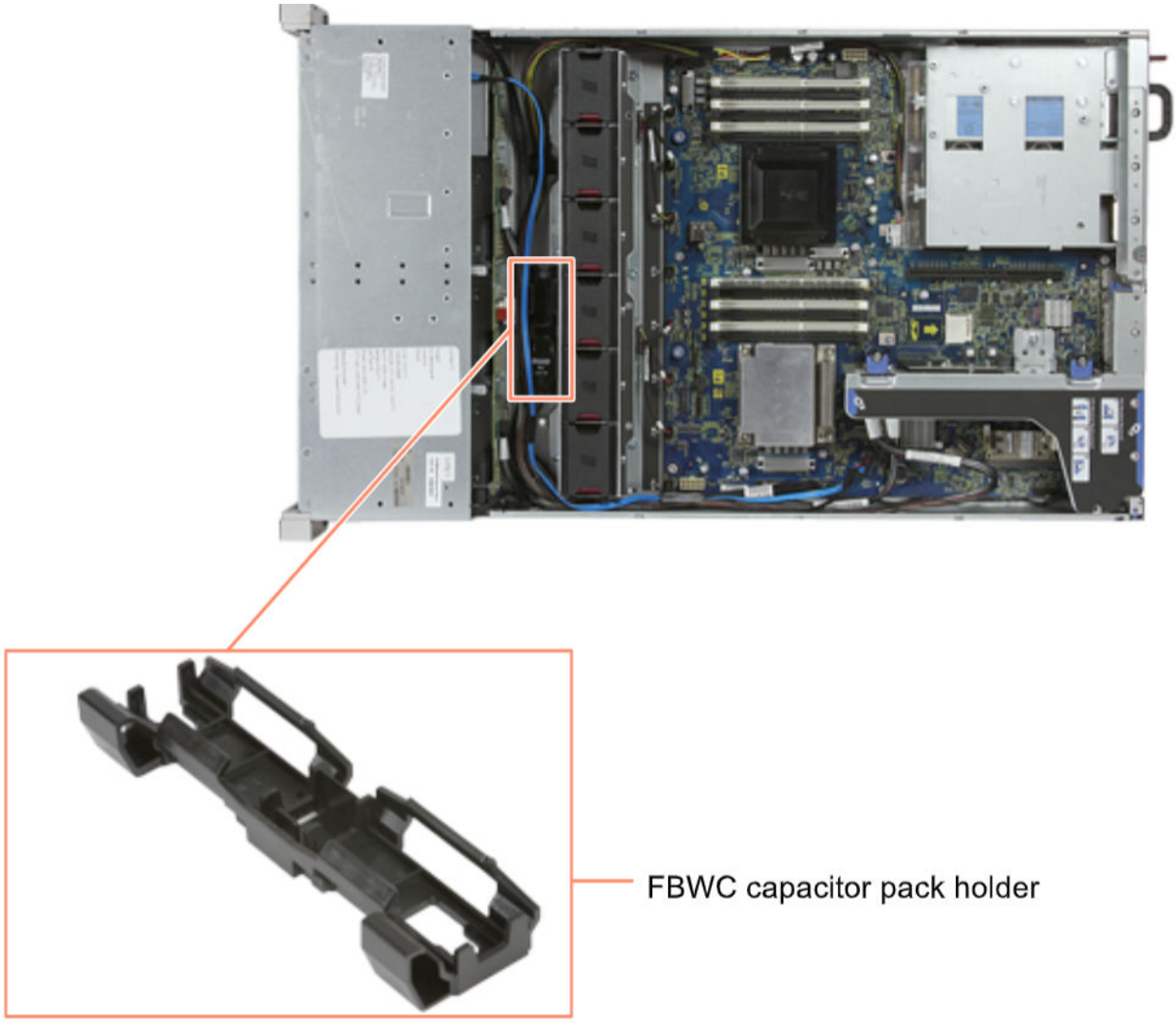
System battery



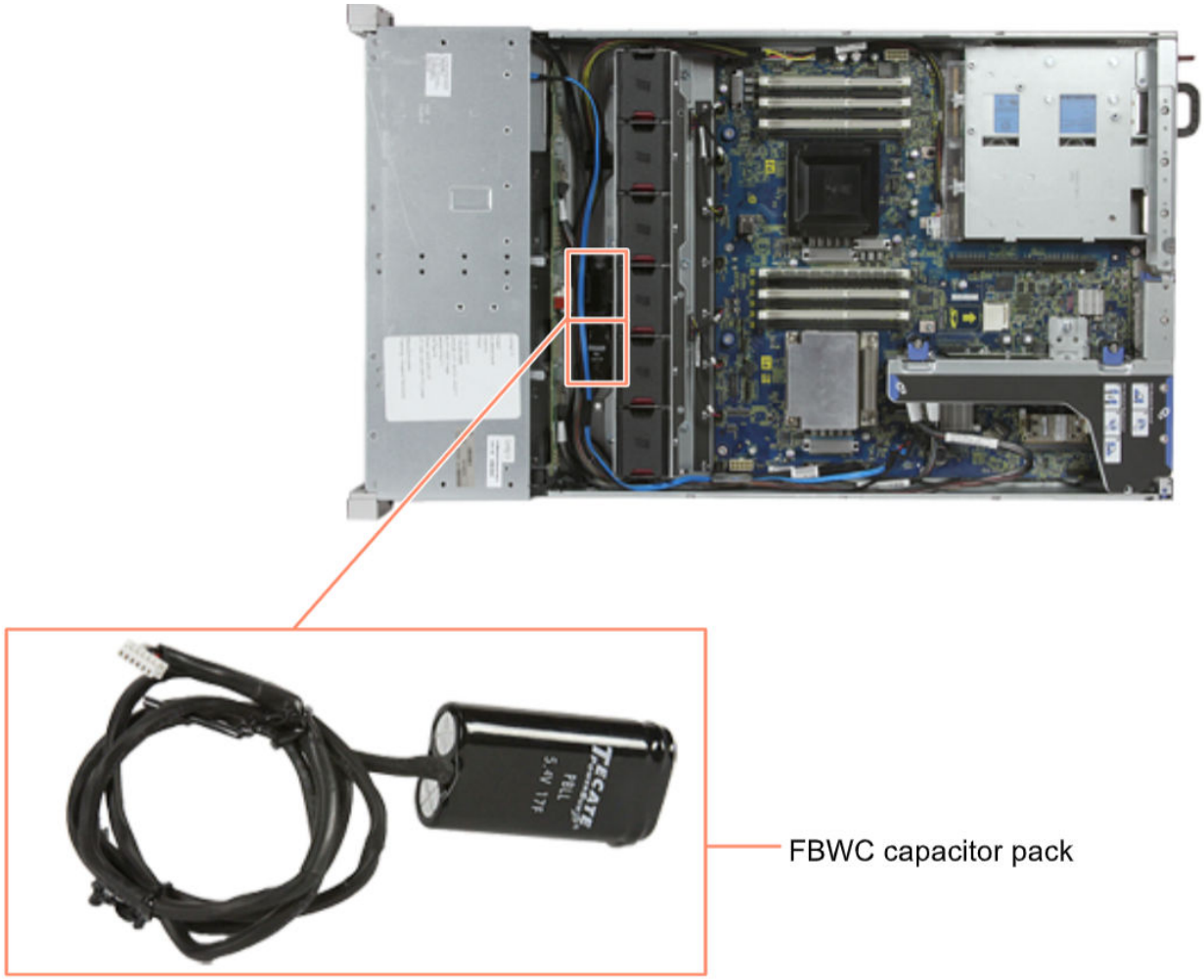
Heatsink and processor



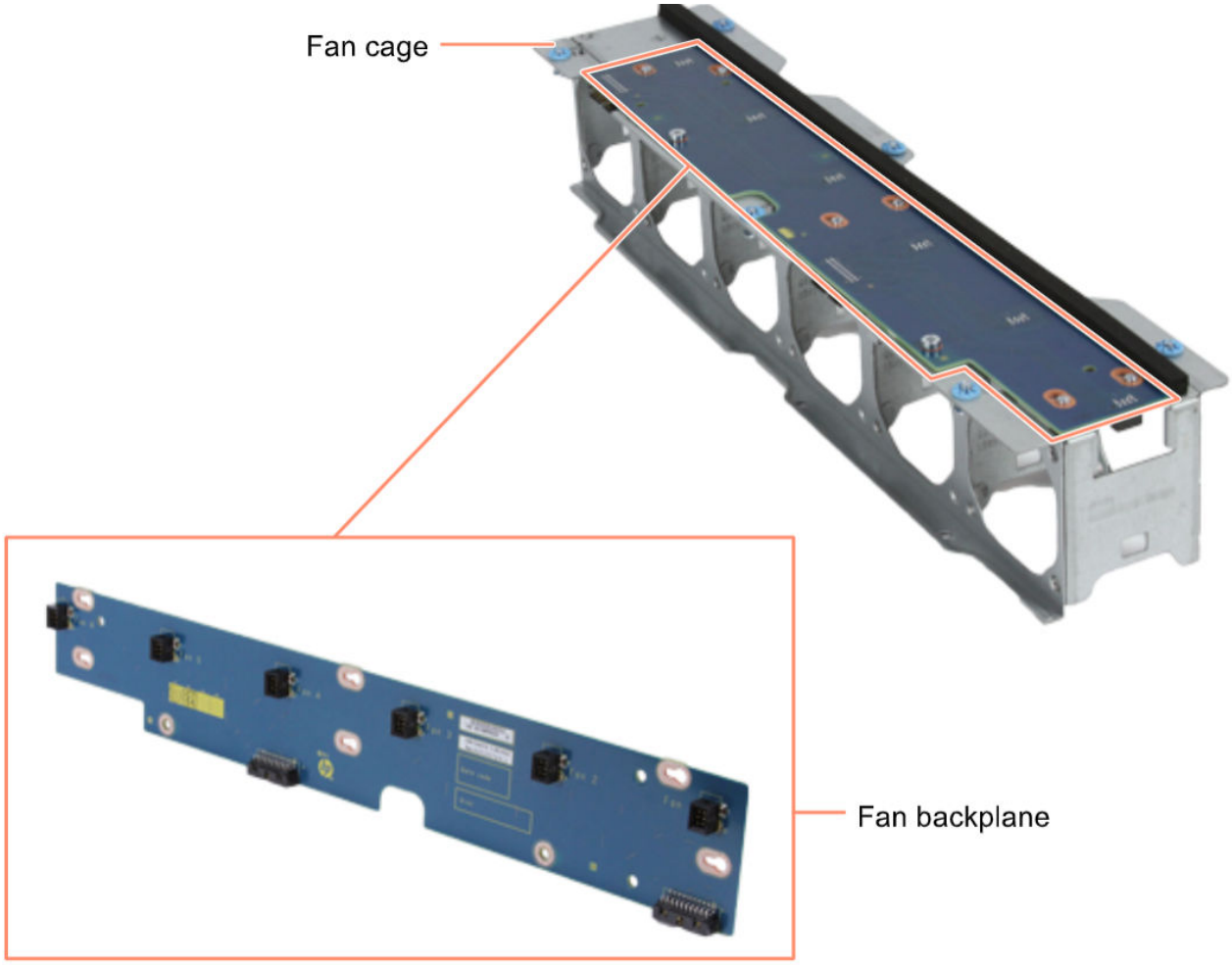
FBWC capacitor pack holder



FBWC capacitor pack



Fan backplane



Precautions

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

Before you begin

1. If the unit contains heated components, wait until the components have cooled off before proceeding. Refer to the service manual for details on how long each component requires to adequately cool off.
2. Put on your electrostatic discharge (ESD) wrist or shoe strap to avoid damaging any circuitry.
3. Place an ESD mat on a suitably grounded surface, and then place the unit on the mat.
4. Remove any devices from the unit being serviced, such as diskettes, tape cartridges, or CD-ROMs.
5. Power off the unit and any peripheral devices that are connected to it.**Note: Replacing a hot-plug device does not require powering down the unit.**

6. Disconnect the power cord from the electrical outlet and then from the unit. When a unit is plugged into an AC power source, voltage is always applied to the unit. You must therefore disconnect the power cord from the power source before opening the unit.
7. Disconnect all peripheral device cables from the unit.

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.

Tools And Materials

Tools used in removal and replacement

- Torx T-10 and T-15 Torx screwdrivers (included with the server, a Torx 10/15 tool is included at the rear of 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

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

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

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

Extend the server from the rack

If the optional cable management arm is installed with sliding rails, 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. Remove all power:
   a. Disconnect each power cord from the power source.
   b. Disconnect each power cord from the server.
3. Pull down the quick release levers on each side of the server.
4. Extend the server from the rack.**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.**
5. After performing the installation or maintenance procedure, slide the server back into the rack, and then press the server firmly into the rack to secure it in place.**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.**

Remove the server from the rack

WARNING: The server is not attached to the rack mounting rails. To avoid potential damage to the server and personal injury, always support the server with both hands when removing it from the rack.

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

1. Power down the server.
2. Disconnect all peripheral cables and power cords from the server rear panel.
3. Extend the server from the rack
4. Loosen screws within the ear latches to remove the server from the rack.For more information, see the documentation that ships with the rack mounting option.
5. Place the server on a sturdy, level surface.

System Battery Consideration

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 Hard Drive

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Hot-plug 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: Review and follow Precautions . Back up all server data on the hard drive, if possible.

1. Press the ejector button to release the handle.
2. Grasp the handle and pull to slide the hard drive out of the hard drive bay.
3. If you are removing a hard drive blank, pinch the release tabs together and slide the blank out of the hard drive bay.

Hot-plug hard drive replacement

1. Press the ejector button to release the handle.
2. With the hard drive handle extended, insert the drive into the drive bay until the open handle becomes engaged.

3. Close the drive handle to lock the hard drive into place.**IMPORTANT:** Confirm that the hot-plug hard drive is fully inserted, with the handle locked and flush with the front of the server.**NOTE: The hot-plug hard drive cannot be removed while the handle is closed.**
4. If you are replacing a hard drive blank, slide the blank into the hard drive bay until it clicks into place.

Hot-Plug Power Supply

https://support.hpe.com/hpesc/public/videoDisplay?videoId=vpsg00001978en_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

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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.**NOTE: A Torx 10/15 tool is included at the rear of the server.**
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.

Access panel replacement

To replace the access panel, reverse the removal procedure.

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 and if installed, full length expansion boards that touch the air baffle.

1. Pinch both locking latches to unlock the air baffle from the heat sink cages.

2. Lift the air baffle straight up and out of the chassis to remove.

Air baffle replacement

1. While pinching the locking latches, align the air baffle with notches in the fan cage and lower it into place over the DIMM slots.
2. Stop pinching the locking latches to lock the air baffle to the top of the heat sink cages.

DIMMs

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DIMMs removal

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

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.

Hot-Plug Fan

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Hot-plug fan removal

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

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.

IMPORTANT: For optimum cooling, install fans in all primary fan locations, slot 3 through 6 for a single processor and all slots for two processors.

1. Grasp the fan by the finger grooves.
2. Pull the fan straight up and out of the fan cage.

Hot-plug fan replacement

1. Grasp the fan by the finger grooves.
2. Orient the fan with the air flow arrows on top and pointing toward the rear of the server.
3. Lower the fan straight down into the fan cage until it is fully seated and clicks into place.

Fan Cage

https://support.hpe.com/hpesc/public/videoDisplay?videoId=vpsg00001983en_us&noframe

Fan 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, air baffle, and all hot-plug fans.

1. Disconnect the two cables from the fan cage backplane.
2. Loosen the six T-15 Torx screws that secure the fan cage to the server chassis.
3. Pull the fan cage straight up and out of the server chassis.

Fan cage replacement

To replace the fan cage, reverse the removal procedure.

Fan Backplane

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Fan backplane 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, air baffle, all hot-plug fans, and fan cage.

1. With the fan cage upside down, remove the two 5 mm T-15 Torx screws that secure the fan backplane to the fan cage.
2. Slide the fan backplane just enough to release it from the guide pins that hold it in place.
3. Lift and remove the fan backplane.

Fan backplane replacement

To replace the fan backplane, reverse the removal procedure.

Optical Drive

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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: Review and follow Precautions . Follow Preparation procedures to power down, extend or remove the server from the rack. 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. Grasp the front of the optical drive and slide it out the front of the server to remove.

Optical drive replacement

To replace the optical drive, reverse the removal procedure.

Drive Cage Assembly

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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 all hot-plug hard drives, access panel, optical drive,and air baffle.

1. Disconnect the mini-SAS cables from the hard drive backplane.
2. Disconnect the power connector from the hard drive backplane.
3. Disconnect the two front panel USB and control cables from the system board, and lift them out of their routing channels and cable clips.
4. Disconnect the 2 pin cable from the system board.
5. Remove the eight 3 mm T-10 Torx screws, four on each side, that secure the drive cage assembly to the chassis.
6. Slide the drive cage assembly forward to release the bottom from the guide tabs in the server chassis.
7. Lift the drive cage assembly up and out of the server chassis..
8. If necessary, remove the backplane by removing two 5 mm T-15 Torx screws, one at each end, and lifting the backplane up and off of the drive cage alignment hooks.

Drive cage assembly replacement

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

PCI Riser Cage

https://support.hpe.com/hpesc/public/videoDisplay?videoId=vpsg00001987en_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 all power cords from the server. Remove the access panel.

NOTE: If a full-length expansion card is installed, you may need to release the end support on the air baffle.

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 just enough to unseat the PCI riser boards from the system board and access any mini-SAS or other cables attached to the riser card or expansion board, if installed.
4. Disconnect all mini-SAS from the riser card or expansion board, if installed.
5. Remove the PCI riser cage from the server chassis.
6. Remove all expansion boards if installed.

PCI riser cage replacement

To replace the PCI riser cage reverse the removal procedure.

NOTE: Be sure to attach port 1 mini-SAS cable to port 1 connector on the riser card or expansion board, if installed, and port 2 mini-SAS cable to port 2 on the riser card or expansion board, if installed. The ports are printed on the riser card and on the hard drive backplane.

Expansion Board

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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 all power cords from the server. Remove the access panel, air baffle, and the PCI riser cage.

NOTE : Full length and full height PCI-e cards are installed on one side and low profile PCI-e cards are installed in the other side. The removal and replacement procedures are very similar.

1. Disconnect any internal cables connected to the expansion board.
2. Remove the 5 mm T-10 Torx screw holding the expansion card in place.

3. Press the blue release tab and open the low profile expansion board locking mechanism.**NOTE** : The full height expansion boards use a slightly different mechanism.
4. Carefully pull the low profile expansion board out of riser card expansion slot.**NOTE** : The full height slots include locking bars commonly seen in graphics cards.

Expansion board replacement

To replace the expansion board reverse the removal procedure.

PCI-E Riser Card

https://support.hpe.com/hpesc/public/videoDisplay?videoId=vpsg00001989en_us&noframe

PCI-e riser card removal

Before you begin: Review and follow Precautions . Follow Preparation procedures to power down, extend or remove the server from the rack. Remove all power cords from the server. Remove the access panel, air baffle, PCI riser cage, and if necessary, installed expansion boards.**NOTE** : The PCI riser cage includes a low profile PCI-e riser card and full height, PCI riser card. The removal and replacement procedures are the same for both.

1. Remove the two T-15 Torx screws that secure the PCI-e riser card to the PCI riser cage.
2. Slide the PCI-e riser card just enough to release it from the guide pins that hold it in place.
3. Lift and remove the PCI-e riser card out of the PCI riser cage.

PCI-e riser card replacement

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

Cache Module

https://support.hpe.com/hpesc/public/videoDisplay?videoId=vpsg00001990en_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 all power cords from the server. Remove the access panel.

NOTE : If an installed PCI-e card is blocking access, it will need to be removed first.

1. Disconnect the FBWC capacitor pack cable from the connector on the cache module.
2. Press the cache module release tab to release the cache module to its spring loaded position.
3. Pull the cache module out of the cache module slot.**NOTE:** To recover cached data from a failed server, refer to the maintenance service guide.

Cache module replacement

To replace the cache module, reverse the removal procedure.

FBWC Capacitor Pack

https://support.hpe.com/hpesc/public/videoDisplay?videoId=vpsg00001991en_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, and air baffle.

NOTE: If the FBWC capacitor pack is being replaced, disconnect it from the cache module or a PCI-e controller expansion board that it is connected to.

1. Lift the FBWC capacitor pack cable out of the routing channel in the server chassis.
2. Lift the FBWC capacitor pack out of its holder and remove.

FBWC capacitor pack replacement

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

FBWC Capacitor Pack Holder

https://support.hpe.com/hpesc/public/videoDisplay?videoId=vpsg00001992en_us&noframe

FBWC capacitor pack holder 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. Lift the FBWC capacitor pack out of its holder and set aside.
2. Remove any cables in the holders cable channel.
3. Lift the center release tab to unlock the holder.
4. Slide the FBWC capacitor pack holder out from under the guide pins and lift out of the server chassis.

FBWC capacitor pack holder replacement

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

Power Supply Baffle

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Power supply 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 necessary, remove the power cable from its holder tabs in the power supply baffle.
2. Remove the two 9 mm T-15 Torx screws that secure power supply baffle to the system board tray.
3. Lift the power supply baffle out of the server chassis.

Power supply baffle replacement

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

Heat Sink And Processor

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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.

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.

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 all power cords from the server. Remove the access panel and air baffle.

1. Using a cross-torque technique, loosen the four T-15 Torx screws in a diagonal pattern to disconnect the heat sink from the system board.
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 pin and standoffs in the system board.
7. While firmly holding the heat sink in place, and using a cross-torque technique, tighten the four T-15 Torx screws in a diagonal pattern to secure the heat sink to the system board.

System Battery

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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 all power cords from the server. Remove the access panel. Review System battery consideration .**NOTE** : If an installed PCI-e card is blocking access, it will need to be removed first. If cables are in the way, they may also need to be adjusted or removed to gain access.

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 up, place the battery fully into its retaining bracket with the release tab holding the battery in place.

System Board

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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 power supplies, access panel, air baffle, the PCI riser cages, and cache module. Remove all external cables.

1. Disconnect all cables from the system board, making note of where each cable connected.
2. Loosen the two Torx T-15 thumbscrews that secure the system board to the chassis.
3. Grasp the system board by the system board handle and slide it toward the front of the server until it stops.
4. Carefully lift the system board out of the chassis.

System board replacement

NOTE: If necessary, remove the DIMMs, Heat sinks, processors, and power supply air baffle from the defective system board transfer them to the new system board.

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.