HPE ProLiant SL165z G7 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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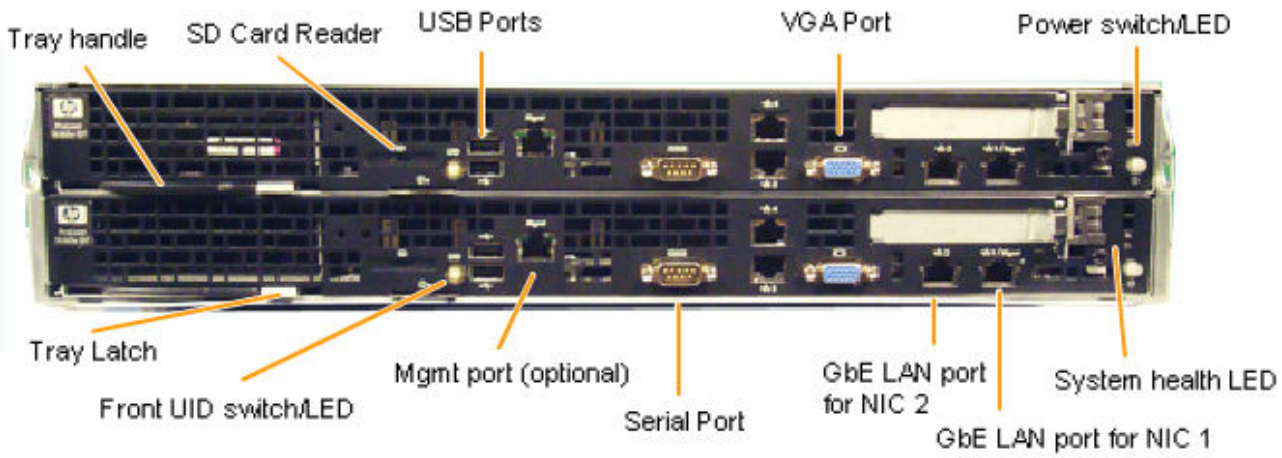
Table of contents

Part Locator
- Front view 5
- Back view 5
- Top view 5
  - Top cover 6
- Internal view 7
  - Hard Drives 8
  - Air Baffles 9
  - Heatsink 9
  - Processor 10
  - Memory 11
  - System Battery 11
  - PCIe riser card 12
  - MGMT card 13
  - System board 14
  - Power board 14
  - Power supply unit 15
  - System fan 16

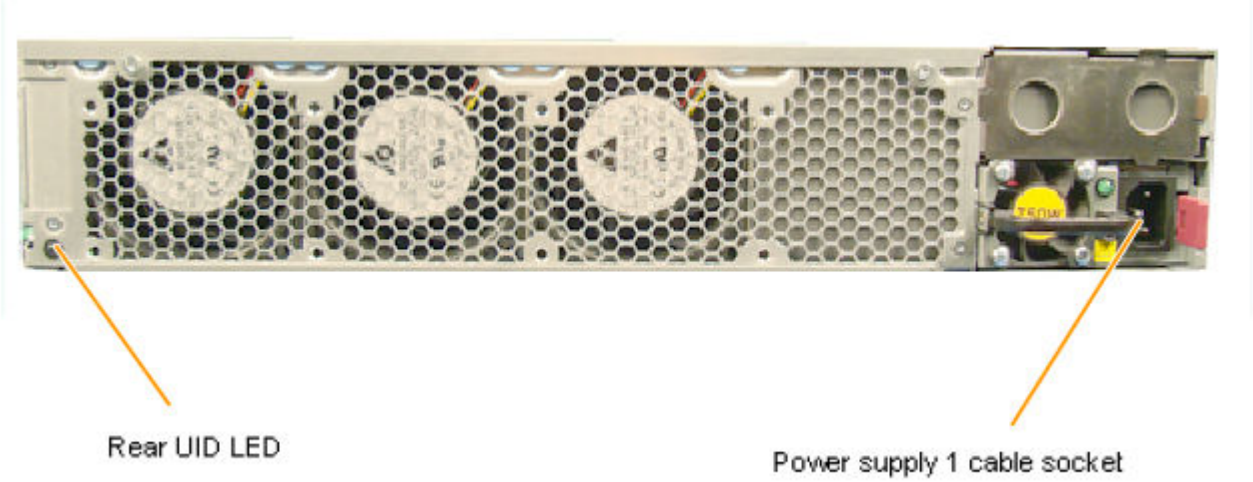
Remove/Replace
- References
  - Precautions 16
  - Tools And Materials 18
  - Post-Installation Instructions 18
  - Pre-Installation Instructions 19
  - Powering Down The Server 20
- Procedures
  - Top Cover 20
  - Hard Drives 21
  - Air Baffles 21
  - Heat Sink 22
  - Processor 23
  - Memory 24
  - PCIe Storage Card Cage 25
  - PCIe Storage Card 25

System Battery....26
PCI Expansion Board....27
PCIe Riser Card....27
MGMT Card (Optional)....28
SD Card (Optional)....29
BBWC Card (Optional)....29
System Board....30
Power Board....30
Power Supply Unit....31
System Fan....31

Front view



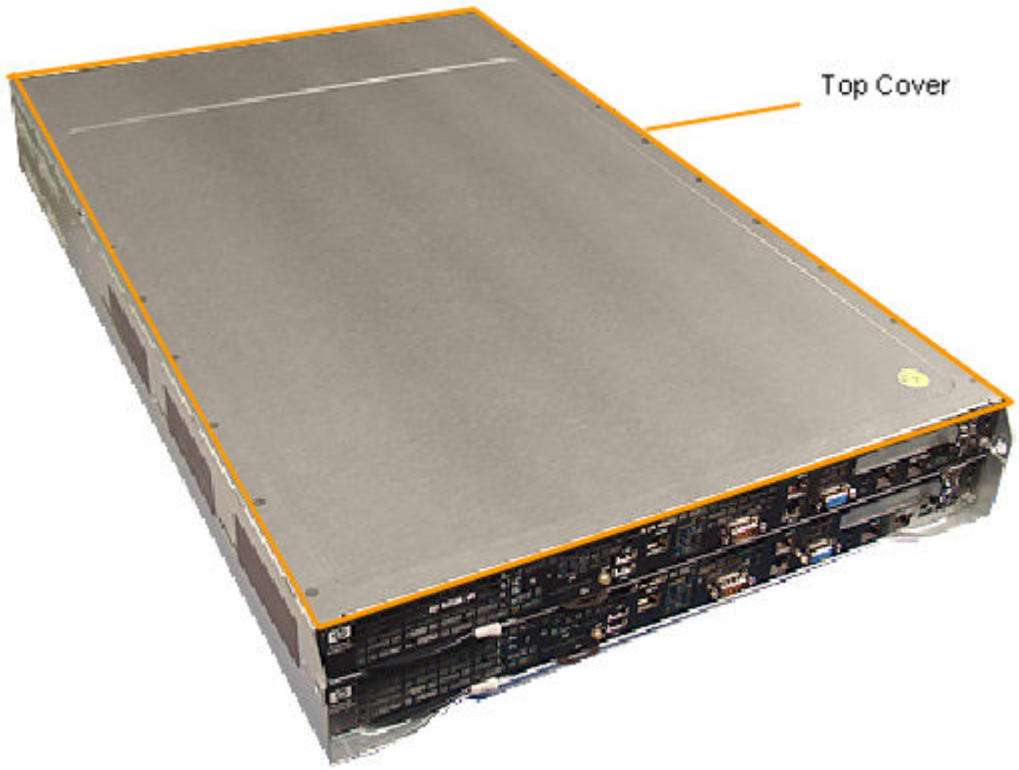
Back view



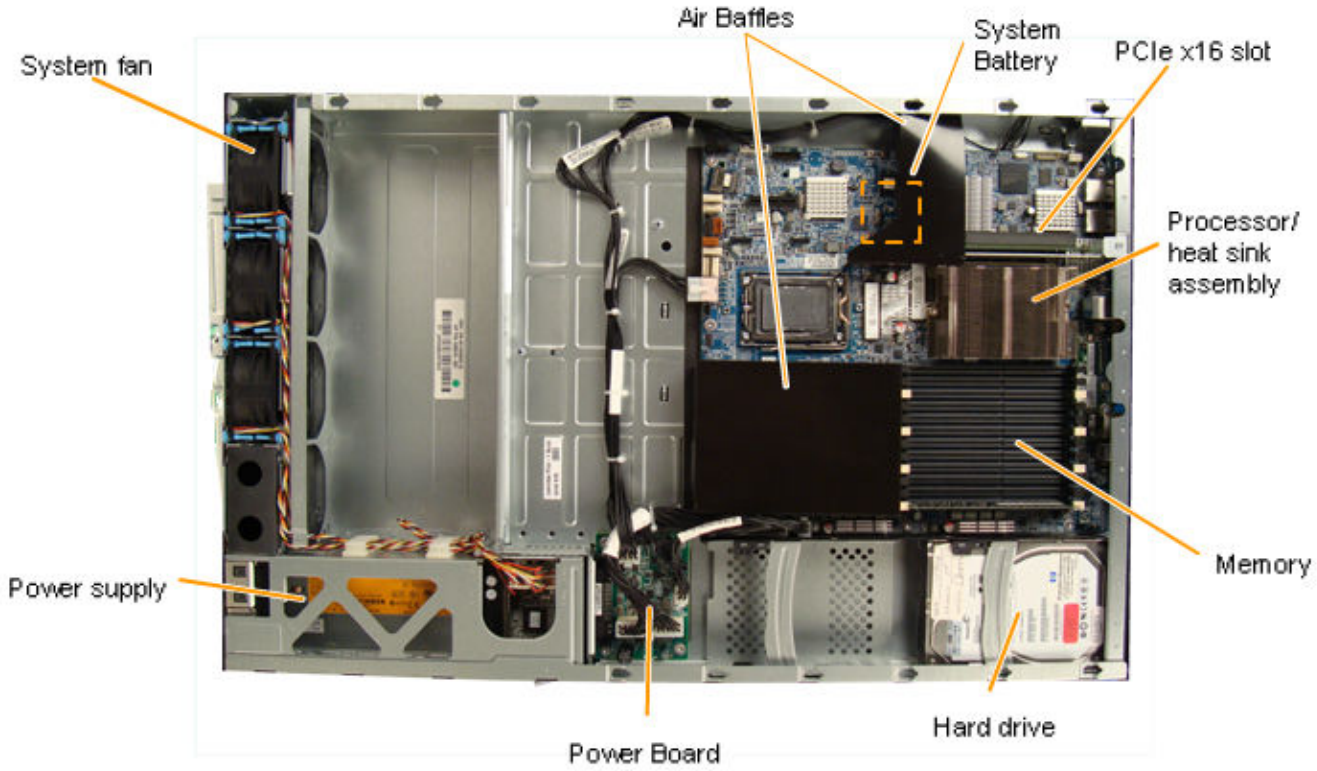
Top view



Top cover



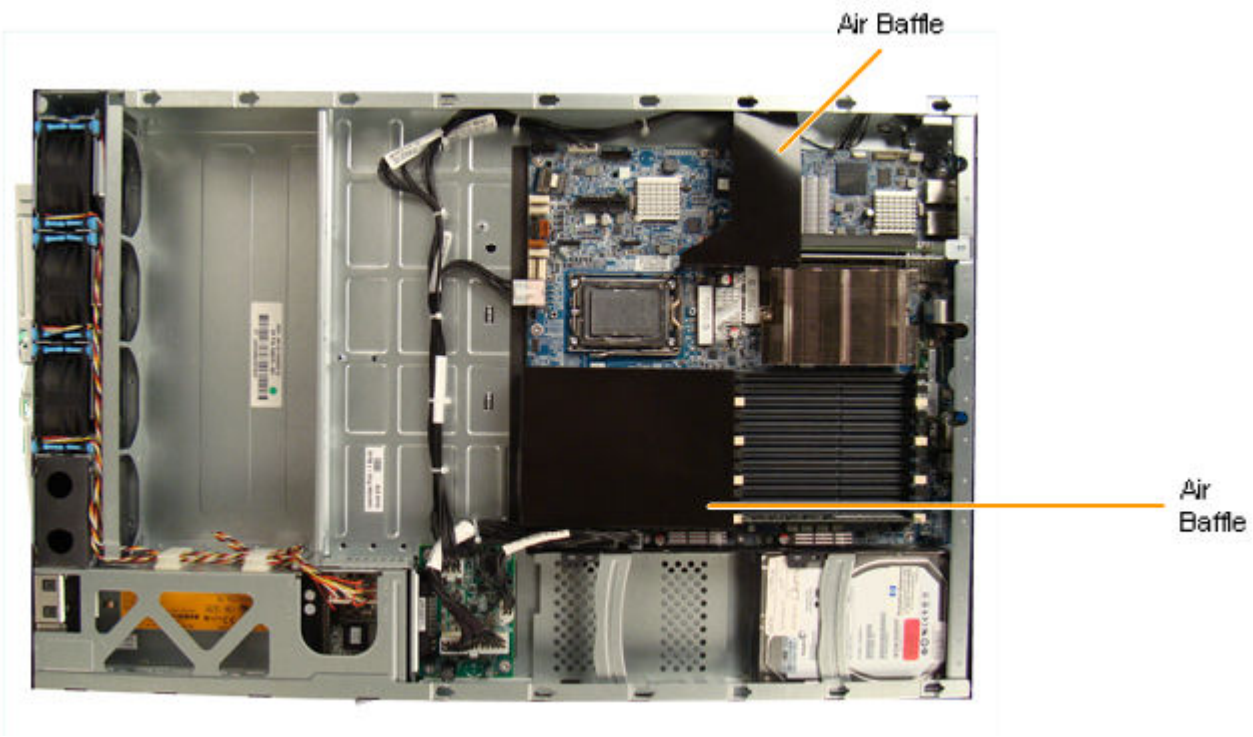
Internal view


Air Baffles
System Battery
PCIe x16 slot
System fan
Processor/ heat sink assembly
Memory
Power supply
Hard drive
Power Board

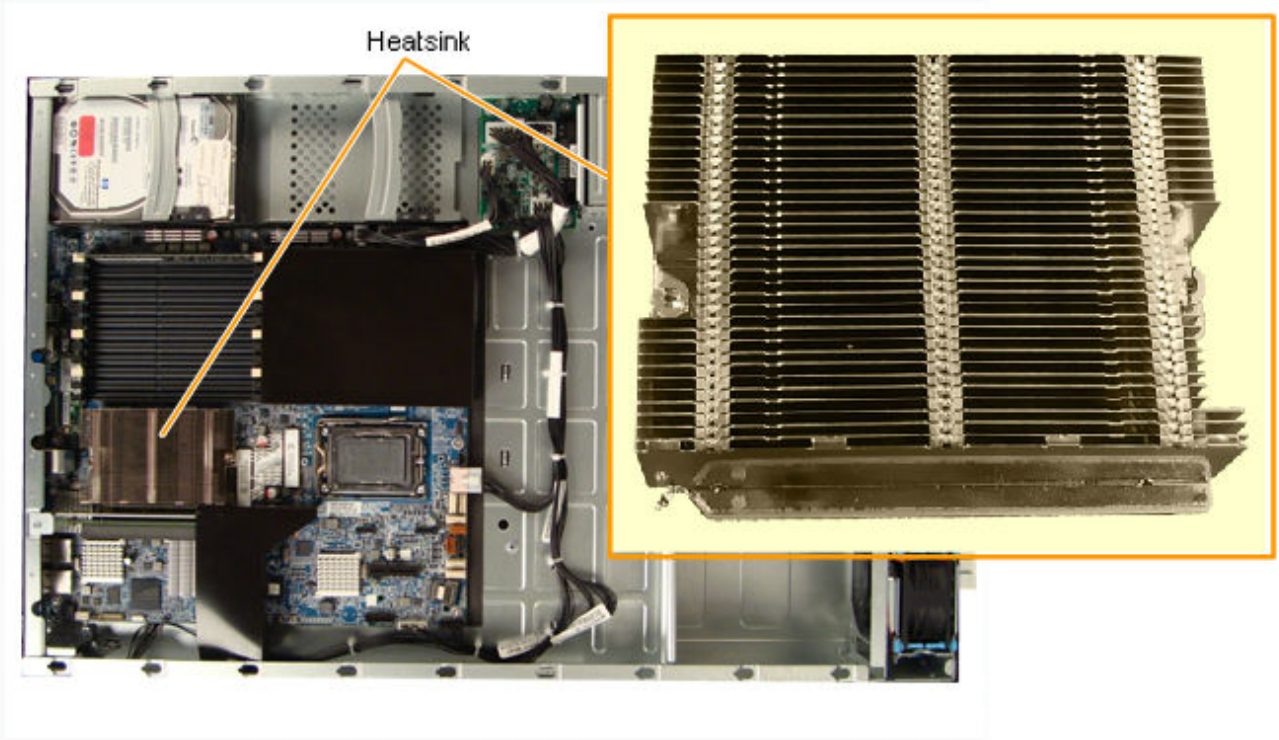
Hard Drives


Hard Drive

Air Baffles



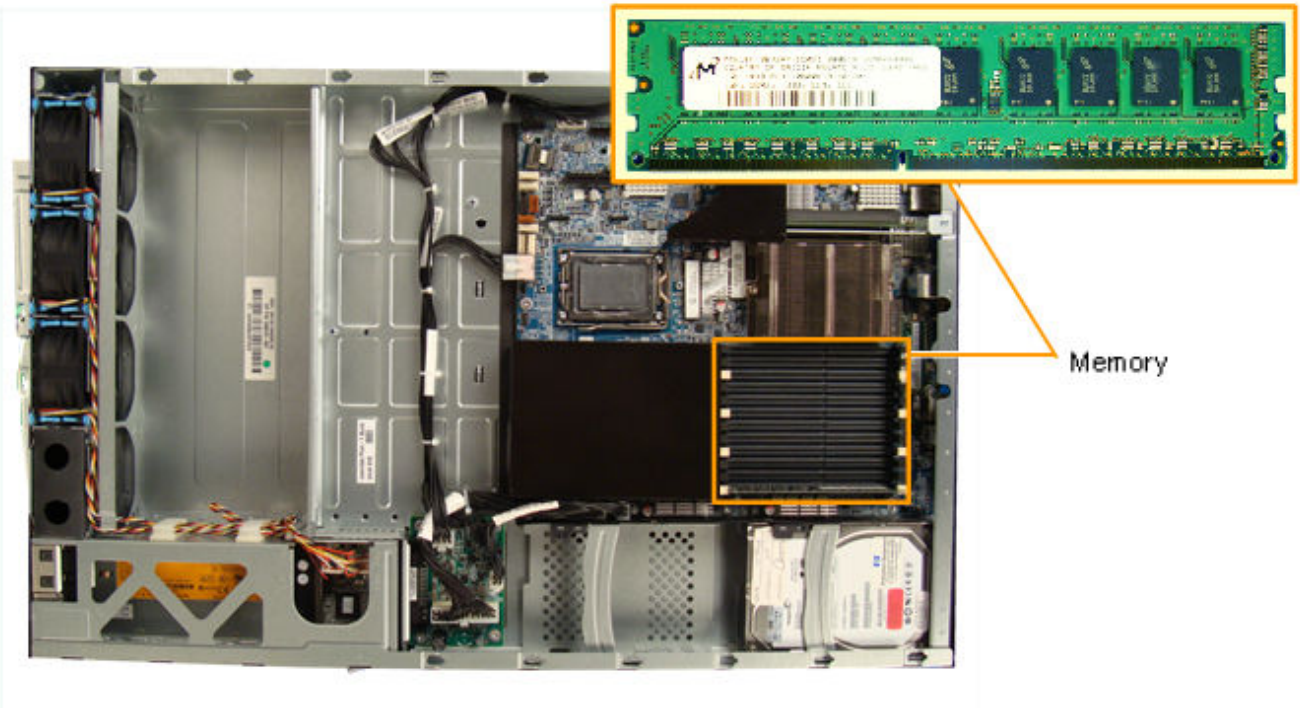
Heatsink



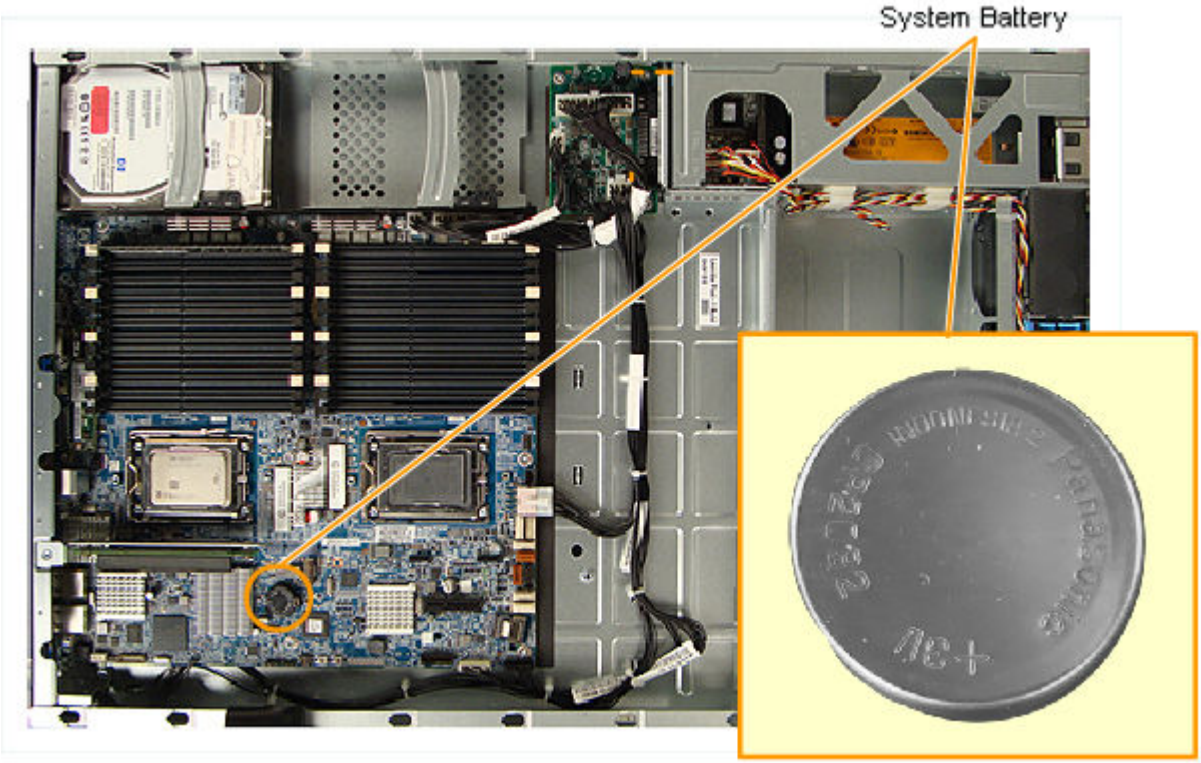
Processor



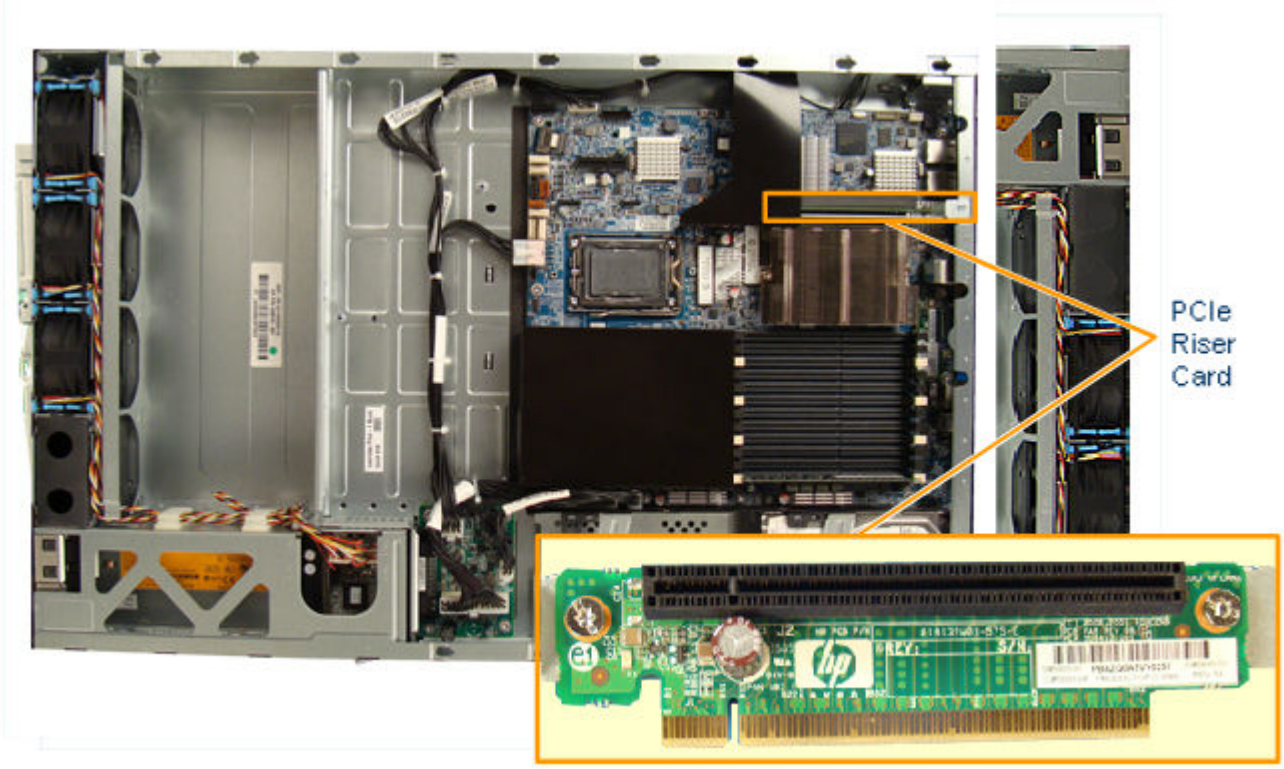
Memory



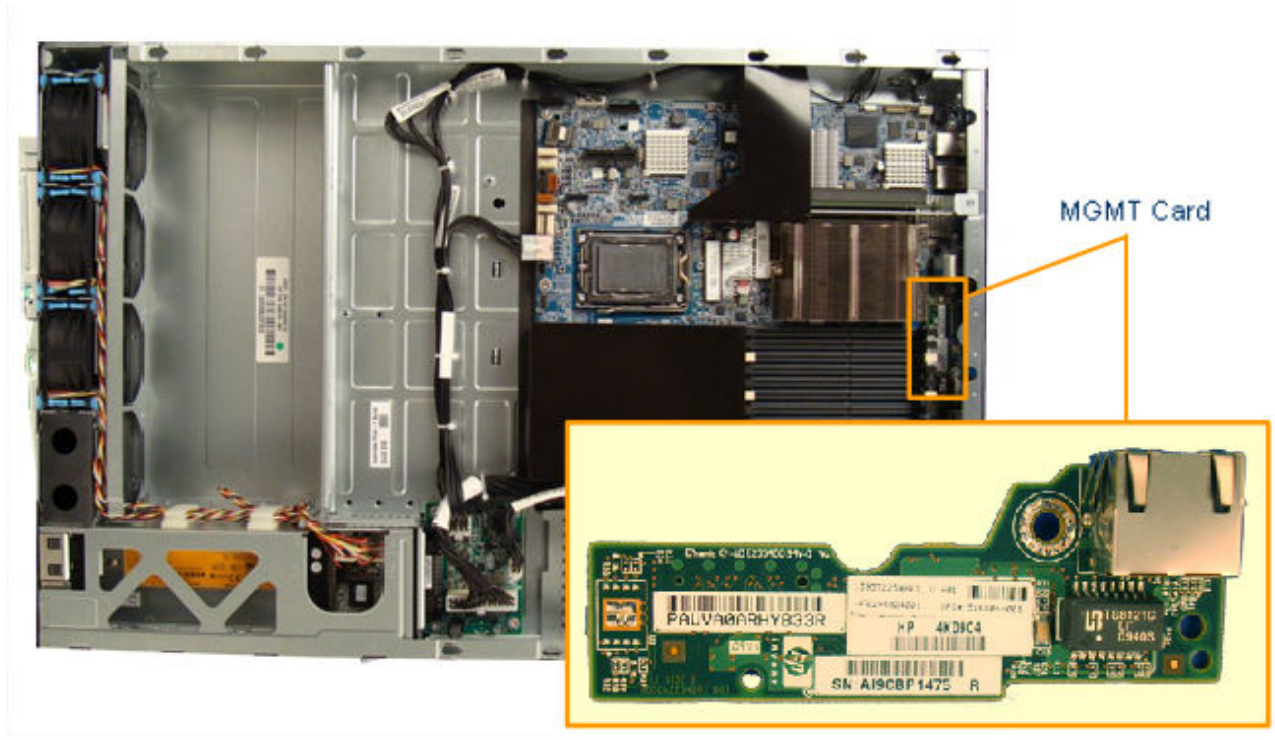
System Battery



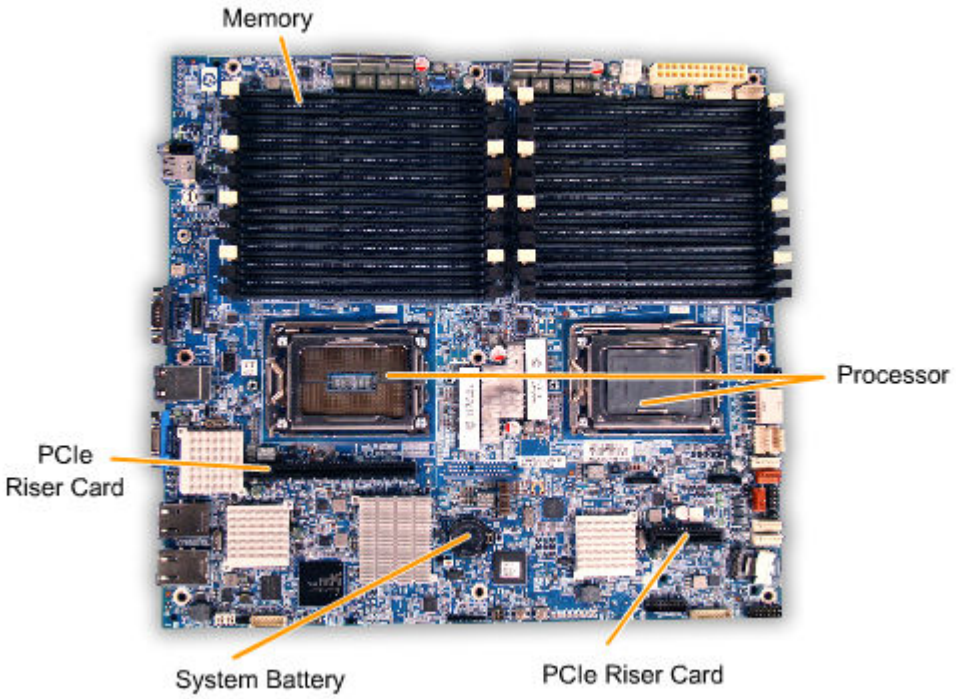
PCIe riser card



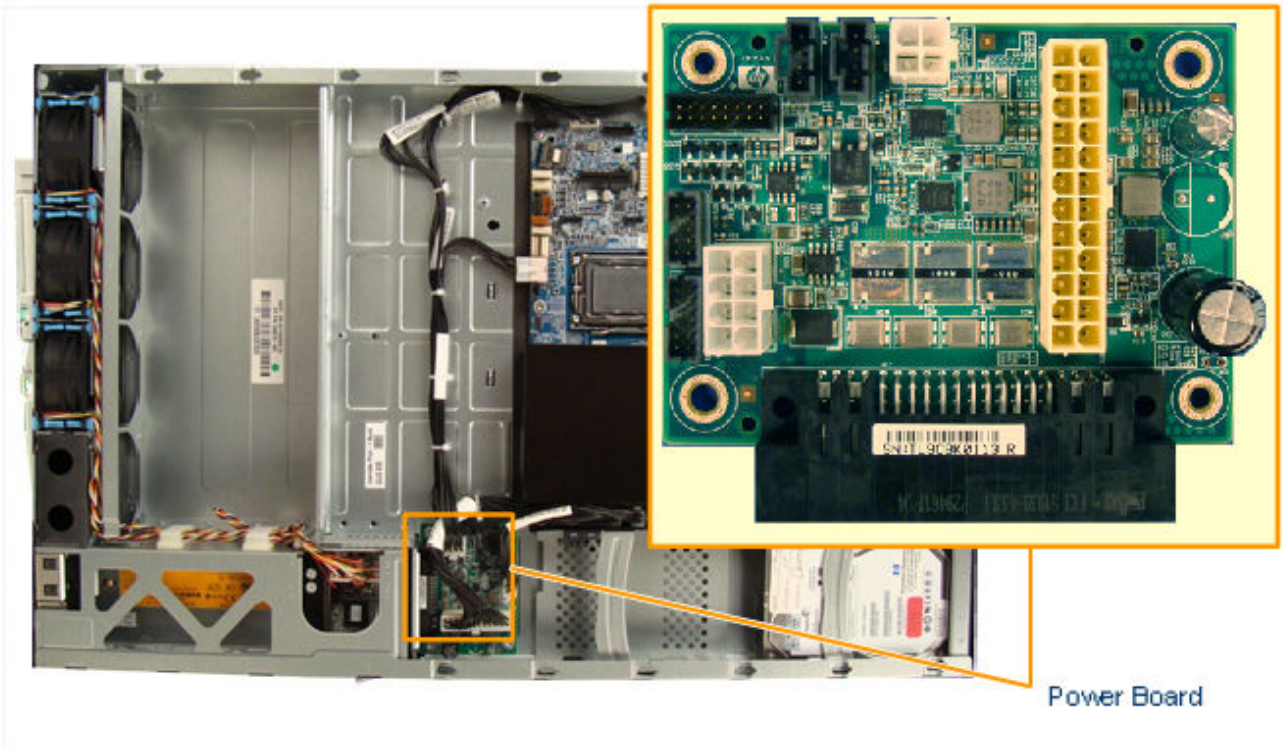
MGMT card



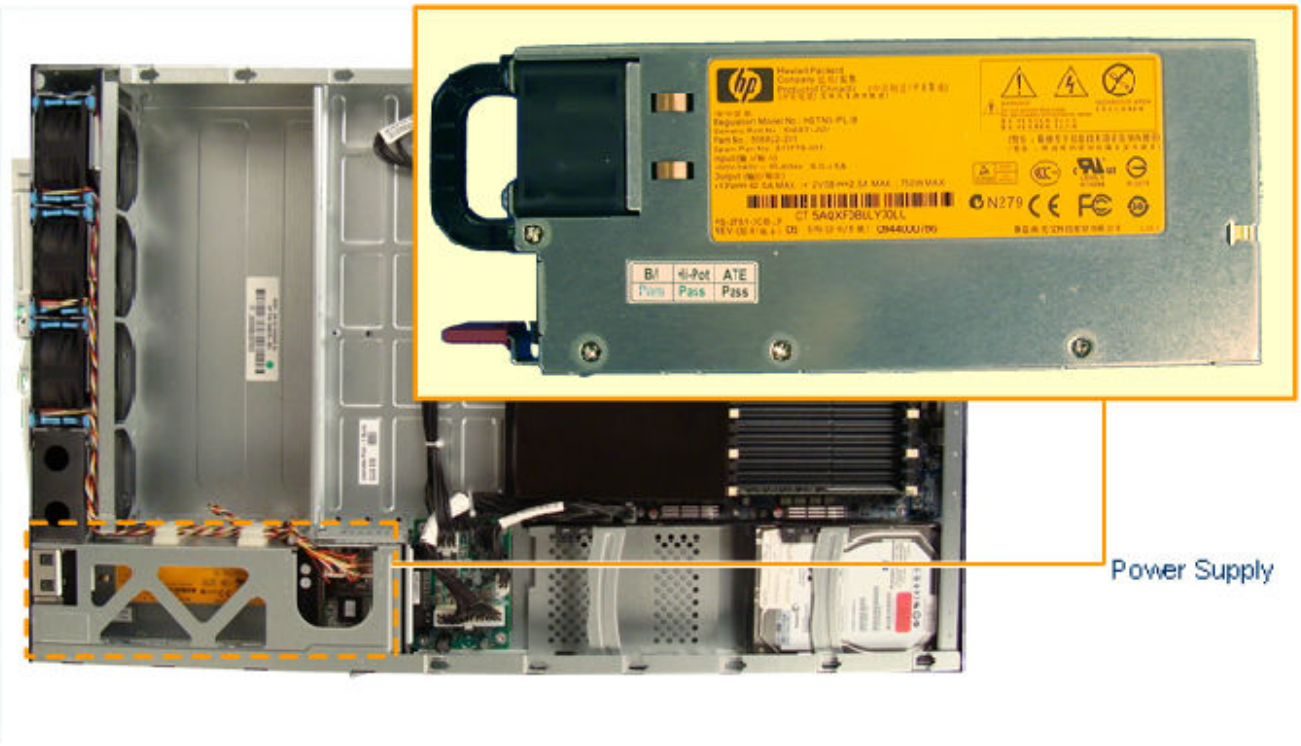
System board



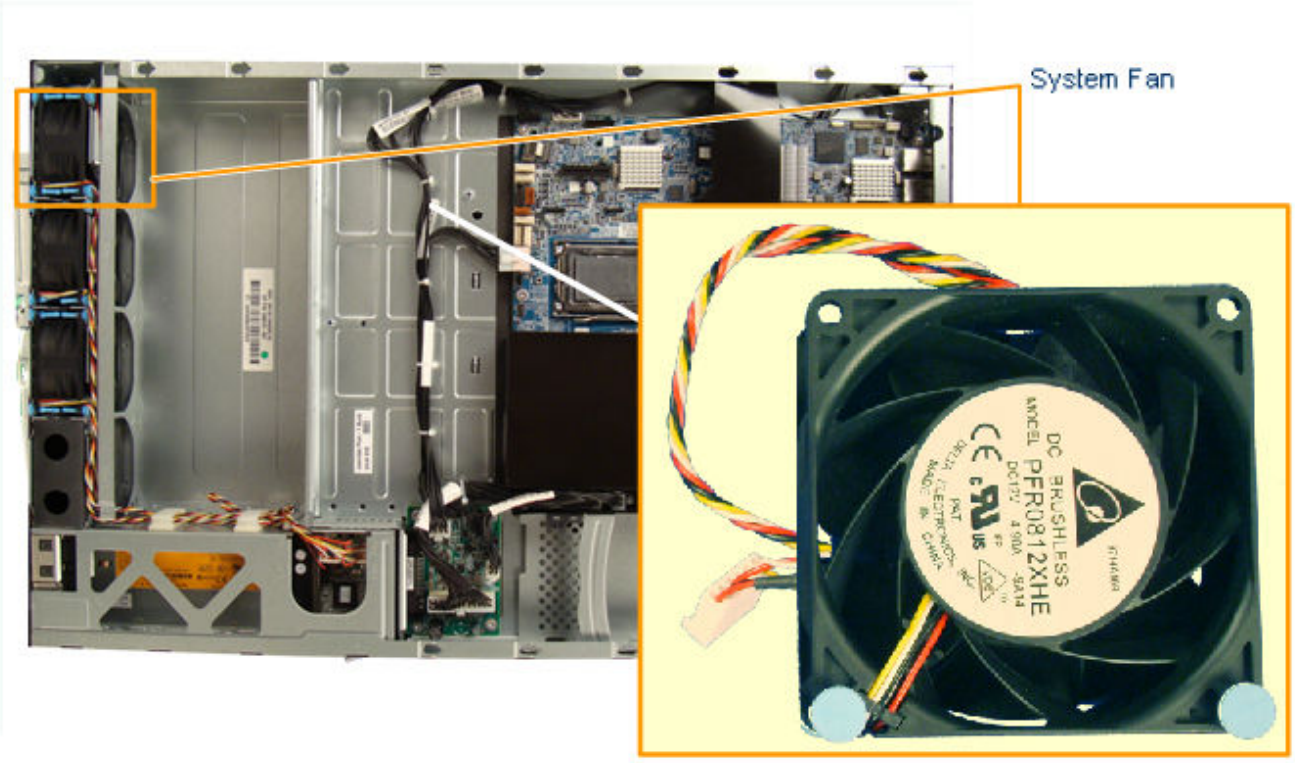
Power board



Power supply unit



System fan



Precautions

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.

CAUTION: The following rack-mount instructions shall be paid attention to.

- Elevated Operating Ambient - If installed in a closed or multi-unit rack assembly, the operating ambient temperature of the rack environment may be greater than room ambient. Therefore, consideration should be given to installing the equipment in an environment compatible with the maximum ambient temperature (Tma) specified by the manufacturer.
- Reduced Air Flow - Installation of the equipment in a rack should be such that the amount of air flow required for safe operation of the equipment is not compromised.
- Mechanical Loading - Mounting of the equipment in the rack should be such that a hazardous condition is not achieved due to uneven mechanical loading.
- Circuit Overloading - Consideration should be given to the connection of the equipment to the supply circuit and the effect that overloading of the circuits might have on overcurrent protection and supply wiring. Appropriate consideration of equipment nameplate ratings should be used when addressing this concern.
- Reliable Earthing - Reliable earthing of rack-mounted equipment should be maintained. Particular attention should be given to supply connections other than direct connections to the branch circuit (e.g. use of power strips)."

Electrostatic discharge information

An electrostatic discharge (ESD) can damage static-sensitive devices or microcircuit. Proper packaging and grounding techniques are necessary precautions to prevent damage. To prevent electrostatic damage, observe the following precautions:

- Transport products in static-safe containers such as conductive tubes, bags, or boxes.
- Keep electrostatic-sensitive parts in their containers until they arrive at static-free stations.
- Cover workstations with approved static-dissipating material. Use a wrist strap connected to the work surface, and properly grounded (earthed) tools and equipment.
- Keep work area free of nonconductive materials, such as ordinary plastic assembly aids and foam packing.

- Make sure that you are always properly grounded (earthed) when touching a static-sensitive component or assembly.
- Avoid touching pins, leads, or circuitry.
- Always place drives with the Printed Circuit Board (PCB) assembly-side down.
- Use conductive field service tools.

Disassembly

- During disassembly, label each cable as you remove it, noting its position and routing. This will make the replacement of the cables much easier, and will ensure that the cables are rerouted properly to protect the cables.
- Keep all screws with the units removed. The screws used in the computer are of different thread sizes and lengths; using the wrong screw in a component could damage the unit.

Tools And Materials

Tools used in removal and replacement

- T-10 Wrench
- T-15 Wrench
- Thermal Grease
- Alcohol Swab

Post-Installation Instructions

Observe the following items after installing or removing a server component

- Be sure all components are installed according to the described step-by-step instructions.
- Reinstall the rear cage, air baffle, peripherals, and system cables that you have removed.
- Reinstall the top cover.
- Connect all external cables and the AC power cord(s) to the system.
- Press the power button on the front panel to turn on the server.

Pre-Installation Instructions

Perform the steps below before you open the server or before you remove or replace any component.

WARNING: Failure to properly turn off the server before you open the server or before your start installing and removing components may cause serious damage as well as bodily harm.

- Turn off the server and all the peripherals connected to it.
- Unplug all cables from the power outlet(s) to avoid exposure to high energy levels that may cause burns when parts are short-circuited by metal objects such as tools or jewelry.If necessary, label each one to expedite reassembly.
- Disconnect telecommunication cables to avoid exposure to shock hazard from ringing voltages.
- If server is installed in a rack, remove server and place it on a flat surface.
- Remove the top cover according to the instructions described in the 'System cover' section in this chapter.
- Follow the ESD precautions listed previously in this chapter when handling a server component.

Important: To streamline the configuration process, read through the entire installation and removal procedures first and make sure you understand them before you begin.

Powering Down The Server

The server does not completely power down when the power button on the front panel is pressed. The button toggles between On and Standby. The standby position removes power from most electronics and the drives, but some internal circuitry remains active. To completely remove all power from the system, disconnect all power cords from the server.

To power down the server:

- Shut down the server as directed by the operating system documentation.
- Press the power button to toggle to Standby. This places the server in standby mode changing the power LED indicator to amber. In this mode, the main power supply output is disabled. Standby does not completely disable or remove power from the system.
- Disconnect the AC power cord(s) from the power outlet(s) and then from the server.
- Be sure that the power LED indicator is turned off and that the fan noise has stopped.
- Disconnect all peripheral devices from the server.

Top Cover

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Top Cover removal

To remove the top cover:

1. Loosen the screws securing the top cover to the chassis.
2. Slide the top cover toward the rear of the chassis and then lift the top cover to remove it from the chassis.

Top Cover replacement

To replace, reverse the removal process.

Hard Drives

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Hard Drives removal

To remove hard drive:

1. Press the tray latch to release the tray handle.
2. Rotate the tray handle to disengage the power connector.
3. Pull the tray assembly out of the chassis.
4. Rotate the HDD handle up.
5. Push the HDD back and then lift it out of the HDD cage.
6. Rotate the HDD carrier handle down and then lock the HDD carrier latches.

Hard Drives replacement

To install the hard drive:

1. Unlock the HDD carrier latches.
2. Rotate the HDD carrier handle up.
3. Align the five pins on the HDD carrier to their holes on the two sides of the HDD cage, and insert the HDD into the HDD cage.
4. Push the HDD along the direction of the arrow to lock the five pins.
5. Rotate the HDD carrier handle down.
6. Lock the HDD carrier latches.

Air Baffles

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Air Baffles removal

To remove the air baffle:

1. Remove the top cover.
   Note: This unit has 2 air baffles with 2 unique removal procedures.
2. To remove Air Baffle 1, Gently rock the air baffle 1 up, and then take it out from the system board.
3. To remove Air Baffle 2, Lift one side of the air baffle 2 up, loosen the screw that secures it to the side of the chassis, and then take it out from the system board.

Air Baffles replacement

To replace, reverse the removal process.

Heat Sink

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Heat Sink removal

To remove the Heatsink:

1. Remove the top cover.
2. Remove the air baffles
   WARNING: To reduce the risk of personal injury from hot surfaces, allow the heat sink and the processor to cool before touching them.
3. loosen the two mounting screws.
   CAUTION: To prevent the heat sink from tilting to one side during installation and removal procedures, use a diagonally opposite pattern when loosening and tightening the two spring-loaded screws.
4. Rotate the heat sink a few degrees to the left and right to break the bonding of the thermal grease compound then lift the heat sink away from the system board.
   CAUTION: Do not let the thermal patch touch the work surface. Place the heat sink down in an upright position with the thermal patch acing upward.

Heat Sink replacement

To install the heatsink:

1. Clean the old thermal grease from the top of the processor with an alcohol swab. Be sure to allow the alcohol to evaporate before continuing.
   Important: If the heat sink has been removed for any reason on a previously installed processor, it is critical that you apply more thermal interface material to the integrated heat speaker on the processor to ensure proper thermal bonding between the processor and the heat sink.

   CAUTION: HP recommends using Shin-Etsu X-23-7783D thermal grease compound for the ProLiant server.

2. Apply thermal grease to the top of the processor in a five-dot or S pattern
   CAUTION: Never touch the bottom of the processor. Any contaminant could prevent the mounting pads from making contact with the socket.

3. To install the heat sink, align the mounting screws to the system board mounting holes.

4. Tighten the mounting screws clockwise to secure the heat sink to the system board.
   CAUTION: Do not over tighten the heat sinks spring-loaded screws as over-tightening may cause them to break off.A maximum torque of 4 inches per pound is set for the system.

5. Replace the air baffles.

6. replace the top cover.

Processor

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Processor removal

To remove a processor:

1. Remove the top cover.

2. Remove the air baffles.

3. Remove the heat sinks.

4. Disengage the load lever.

5. Lift the retention plate to expose the socket body.

6. Using your fingers, grasp the processor and lift it out of its socket being sure to handle it only by the edges.

CAUTION: The pins of the socket are very fragile. Do not bend or damage them.

CAUTION: Place the processor on a static-dissipating work surface or in an anti-static bag.

Processor replacement

To install the new processor:

WARNING: it is recommended to use processors of the same speeds or cache sizes to prevent possible server malfunction. With two processors installed, each node supports boot functions through the processor installed in processor socket 1. If processor 1 fails, the system cannot boot up. If processor 2 fails, the system will boot automatically from processor 1 and provide a processor failure message.

CAUTION: Make sure that you properly align the processor with the orientation notch on the socket.

1. Insert the processor into the socket, using the key on the processor.
2. Close the retention plate.
3. Lock the load lever.
4. Install the heat sink.
5. Replace the air baffles.
6. Replace the top cover.

Memory

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Memory removal

To remove the system memory:

1. Remove the top cover.
   Note: The HP ProLiant SL165z G6 server has sixteen DIMM slots that support up to 128 gigabytes of system memory. Check the MSG for supported memory configurations.
2. To remove a memory module, open the holding clips securing the module
3. Pull gently to remove the memory module from the slot.

Caution: Place the memory module on a static-dissipating work surface or inside an anti-static bag.

Caution: The memory module slots are structured to ensure proper installation. If you insert a memory module but it does not fit easily into the slot, you may have inserted it incorrectly. Double check the orientation of the module and reinsert. If the holding clips do not close, the module is not inserted correctly.

Note: The ProLiant SL165z G6 server supports up to 32 memory modules. Install them in the DIMM slots starting from the DIMM 1 slot.

Memory replacement

To replace, reverse the removal process.

PCIe Storage Card Cage

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PCIe Storage Card Cage removal

To remove the PCIe Storage Card Cage:

1. Remove the top cover.
2. To remove the PCI cage, first disconnect any cables connecting an existing expansion board to the system board.
3. Loosen the two screws that secure the PCI cage to the server.
4. Lift the PCI cage away from the system board assembly.

PCIe Storage Card Cage replacement

To replace, reverse the removal process.

PCIe Storage Card

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PCIe Storage Card removal

To remove the PCIe Storage Card:

1. Remove the top cover.
2. Remove the Storage Card Cage.
3. To remove the PCIe riser card, loosen the two screws securing the riser card to the PCI cage.
4. Remove the riser card from the PCI cage.

PCIe Storage Card replacement

To replace, reverse the removal process.

System Battery

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System Battery removal

To remove the system battery:

1. Remove the top cover.
   Note: The server uses nonvolatile memory that requires two batteries to retain system information when power is removed.

   Note: If the server no longer automatically displays the correct date and time, you may need to replace the system battery. Under normal usage, average battery life is five to ten years.

   Important: Prior to removal, power down the system, disconnect the power cords, and remove the top cover.

   Note: If the expansion board is installed to the riser card, remove the expansion board before releasing the battery.

   Warning: Replace the battery with the same type as the battery recommended by HP as failure to do so could result in fire or explosion.

   Caution: Loss of BIOS settings occurs when the battery is removed therefore you must reconfigure BIOS settings whenever you replace the battery.

2. To release the battery from its holder, squeeze the metal clamp that extends above the top of the battery. When the battery pops up, lift it out.

System Battery replacement

To replace the system battery:

1. To insert the new battery, slide one edge of the replacement battery under the hold-s lip with the positive side facing the metal clamp. Push the other edge down until the clamp snaps over the top of the battery.
2. replace the top cover

PCI Expansion Board

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PCI Expansion Board removal

To remove the PCI expansion board:

1. Remove the top cover.
2. To remove the PCIe expansion board, remove the screw that secures it.
3. Press the PCIe expansion board latch spring.Pull the PCIe expansion board back and away from the PCIe riser card.
4. Slide the PCIe expansion board bracket across the chassis.Close the PCIe expansion board latch.

PCI Expansion Board replacement

To replace, reverse the removal process.

PCIe Riser Card

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PCIe Riser Card removal

To remove the PCIe riser card:

1. Remove the top cover.
   Note: There is one PCI expansion slot on each system board. The one PCIe riser card attached to the PCI cage converts the functionality of the system board expansion slot to the slot positioned at a 90 degree angle from the system board.
2. To remove the PCIe riser card with the bracket, loosen the screw securing the riser card bracket to the side of the chassis-.
3. Lift the riser card with the bracket out of the system board.
4. To remove the PCIe X16 riser from the bracket, remove the two screws securing the riser card to the bracket.
5. Remove the riser card from the bracket.

PCIe Riser Card replacement

To replace, reverse the removal process.

MGMT Card (Optional)

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MGMT Card (Optional) removal

To remove the MGMT card:

Note: To remove the MGMT port knockout you must use the slotted driver.

1. Remove the top cover.
2. Loosen the screw and pull the mgmt card upwards to remove the mgmt card from the mgmt card connector.

MGMT Card (Optional) replacement

To replace, reverse the removal process.

SD Card (Optional)

https://support.hpe.com/hpesc/public/videoDisplay?videoId=vpsg00003080en_us&noframe

SD Card (Optional) removal

To remove the SD Card reader module:

1. Remove the top cover.
2. Disconnect the USB cable from the SD card reader module and the system board.
3. Loosen the screw that secures the SD card reader module to the chassis.And remove the SD card reader module.

SD Card (Optional) replacement

To replace, reverse the removal process.

Note: To install the SD Reader Module, you must remove the SD reader module knock-out from the front panel of the server.You must use the slotted driver to remove the knock-out.

BBWC Card (Optional)

https://support.hpe.com/hpesc/public/videoDisplay?videoId=vpsg00003081en_us&noframe

BBWC Card (Optional) removal

To remove the BBWC card:

1. Remove the top cover.
2. To remove, loosen the screw that secures the the BBWC assembly to the server tray..- then lift it away from the server tray.
3. Pull the BBWC retaining latch.Slide the BBWC back, up and out of the tray.

BBWC Card (Optional) replacement

To replace, reverse the removal process.

System Board

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System Board removal

To remove the System Board:

1. Remove the top cover.
2. Remove the air baffles
3. Remove the heat sinks
4. Remove all memory DIMMs
5. Remove the tray with the system board by first pressing the tray latch to release the tray handle.
6. Rotate the tray handle to disengage the power connector.
7. Pull the tray assembly out of the chassis.
8. Remove all remaining cabling from the system board
9. Remove the nine screws that secure the system board to the tray.
10. Slide the system board back, up and out of the tray to remove the system board from the tray.

System Board replacement

To replace, reverse the removal process.

Power Board

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Power Board removal

To remove the power board:

1. Remove the top cover.
2. Locate the power board and remove all cables.
3. To remove the power board, loosen the four screws that secure the power board to the server tray.
4. Push the power board forward, up and out of the server tray.

Power Board replacement

To replace, reverse the removal process.

Power Supply Unit

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Power Supply Unit removal

To remove thePower Supply:

Warning: Installation of power supply units should be referred to individuals who are qualified to service server systems and are trained to handle equipment capable of generating hazardous energy levels.

Warning: Do not open the power supply unit as there are no serviceable parts inside.

Important: Prior to removal, power down the system, disconnect the power cords, and remove the top cover.

1. To remove a power supply, press the red colored handle-
2. Slide the power supply out of the power supply cage.

Power Supply Unit replacement

To install thePower Supply:

1. To install or reinstall, slide the power supply into the power supply bay until it snaps into place.

System Fan

https://support.hpe.com/hpesc/public/videoDisplay?videoId=vpsg00003085en_us&noframe

System Fan removal

To remove the system fan:

1. Remove the top cover.
   Important: Prior to removal, power down the system, disconnect the power cords, and remove the top cover.
2. Disconnect the fan cable from its corresponding board connector.
3. Squeeze the release tab on the system fan to release it from the chassis.
4. Lift the system fan away from the chassis.

System Fan replacement

To replace, reverse the removal process.