HPE ProLiant SL250s Gen8 Server - Parts Support Guide

Part Number: External
Published: 2020
Edition: 1

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

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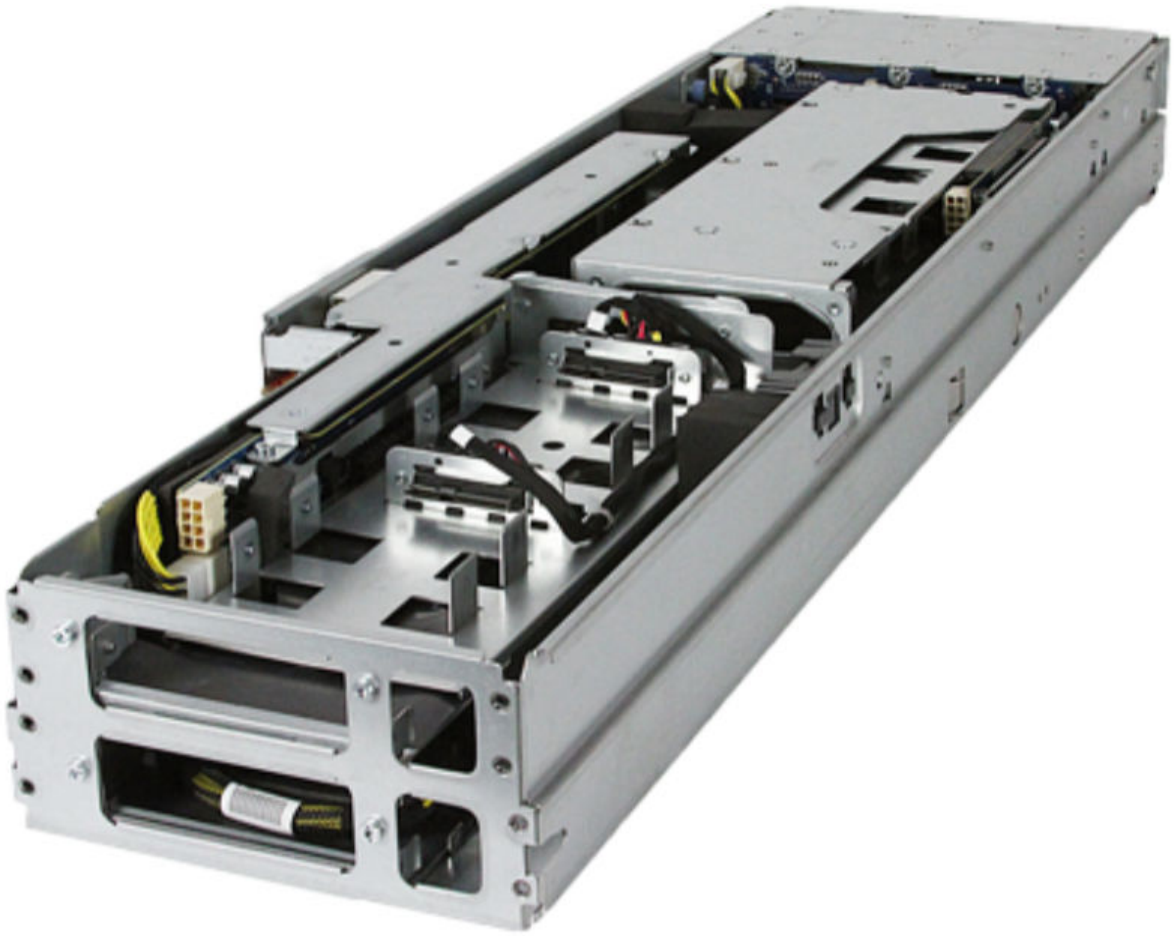
Front view



Hot-plug hard drive



Back view



Internal view



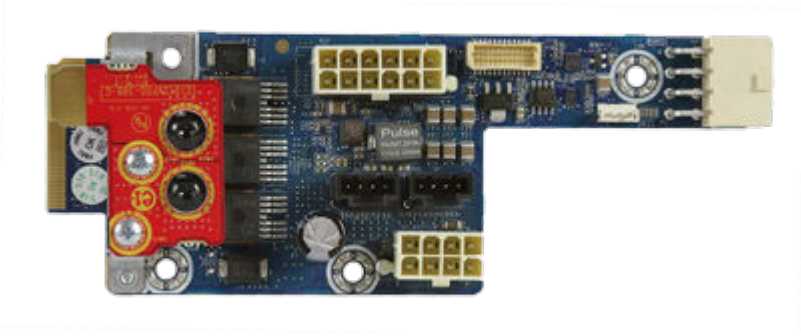
Rear GPU shelf assembly



GPU module



Personality board



GPU riser assembly



GPU power board



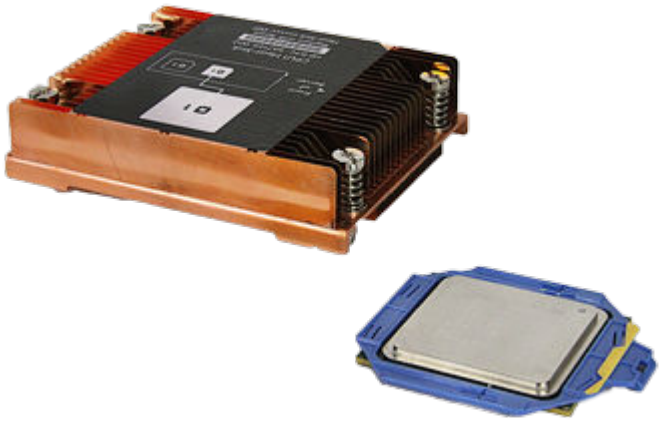
Processor air baffle



Memory DIMM



Heat sink and processor



FlexibleLOM riser card



FlexibleLOM riser assembly



FlexibleLOM expansion card



Hot-plug hard drive cage



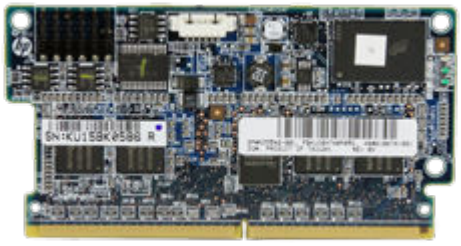
SAS controller card



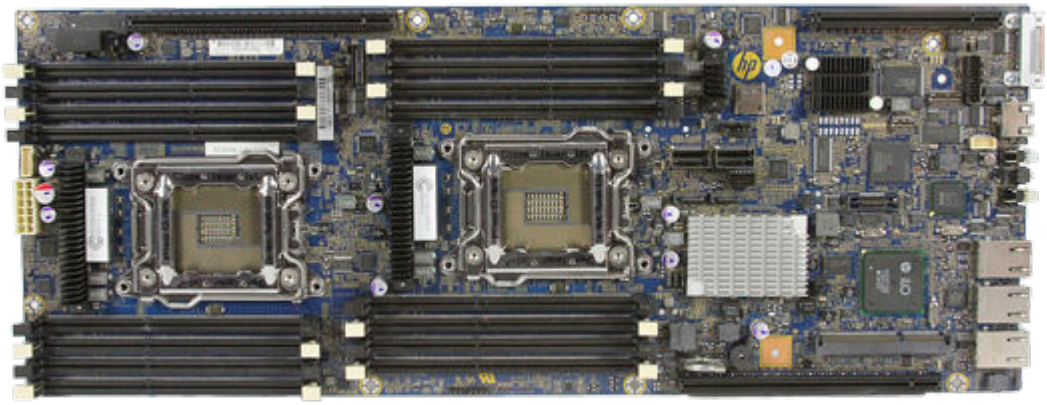
2U PCI riser assembly



Cache module



System board



GPU bracket



GPU module cage



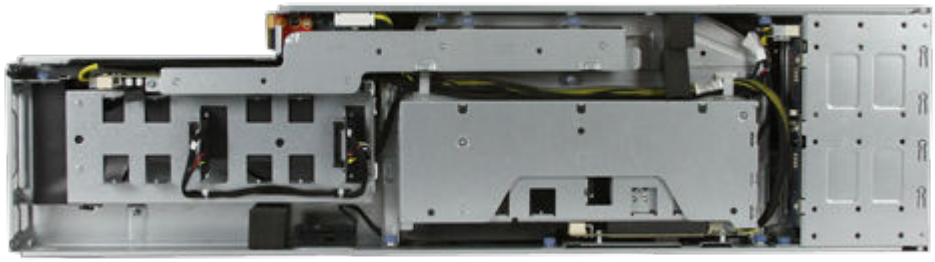
Internal SFF hard drive



FBWC capacitor pack



Internal hard drive trays



Precautions

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

Before you begin

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

Static electricity

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.

Pre-servicing procedure

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 removing/replacing components may cause serious damage as well as bodily harm.**

1. Turn off the server and all the peripherals connected to it.
2. Unplug all cables from the power outlets to avoid exposure to high energy levels that may cause burns when parts are short-circuited by metal objects such as tools or jewelry.
3. 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.
4. Keep all screws with the units removed. The screws used in the server may be of different thread sizes and lengths; using the wrong screw in a component could damage the unit.
5. If server is installed in a rack, remove server and place it on a flat surface.
6. Disconnect telecommunication cables to avoid exposure to shock hazard from ringing voltages.
7. Follow the ESD precautions when handling a server component.

IMPORTANT: To streamline the configuration process, watch and read through the entire removal/replacement procedure first and make sure you understand them before you begin.

Post-installation instructions

Observe the following items after removing/replacing a server component:

1. Be sure all components are installed according to the described step-by-step instructions.
2. Check to make sure you have not left loose tools or parts inside the server.
3. Reinstall the PCI riser, peripherals, and system cables that you have removed.
4. Reinstall the server into the chassis.

5. Connect all external cables to the system.
6. Press the power button on the front panel to turn on the server.

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.

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)."

Symbols on equipment

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

 	This symbol indicates the presence of hazardous energy circuits or electric sh ock hazards. Refer all servicing to qualified personnel.**WARNING: To reduce th e risk of injury from electric shock hazards, do not open this enclosure. Re fer all maintenance, upgrades, and servicing to qualified personnel.**
 	This symbol indicates the presence of electric shock hazards. The area contain s no user or field serviceable parts. Do not open for any reason.**WARNING: To reduce the risk of injury from electric shock hazards, do not open this encl osure.**
 	This symbol on an RJ-45 receptacle indicates a network interface connection. **WARNING: To reduce the risk of electric shock, fire, or damage to the equ ipment, do not plug telephone or telecommunications connectors into this receptacle.**
	This symbol indicates the presence of a hot surface or a hot component. If this surface is touched, the potential for injury exists.**WARNING: To reduce the ris k of injury from a hot component, allow the surface to cool before touching .**



  weight1_kgweight1_lb	This symbol indicates that the component exceeds the recommended weight for one individual to handle safely.**WARNING : To reduce the risk of personal injury or damage to the equipment, observe local occupational health and safety requirements and guidelines for manual material handling.**
	These symbols, on power supplies or systems, indicate that the equipment is s upplied by multiple sources of power.**WARNING: To reduce the risk of injury f rom electric shock, remove all power cords to completely disconnect power from the system.**

Tools And Materials

Tools used in removal and replacement

- T-10 and T-15 Torx screwdrivers
- Snips
- Small cable ties

Power Down Procedures

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

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

Cable Management

Always follow good cable management practices when working inside the computer.

- Keep cables away from major heat sources like the heat sink.
- Do not jam cables on top of expansion cards or memory modules. Printed circuit cards are not designed to withstand excessive pressure.
- Keep cables clear of sliding or moveable parts to prevent cutting or crimping.
- When folding a flat ribbon cable, never fold to a sharp crease. Sharp creases may damage the wires.
- Some flat ribbon cables come pre-folded. Never change the folds on these cables.
- Do not sharply bend any cable. A sharp bend can break the internal wires.
- Never bend a SATA/SAS data cable tighter than a 30 mm (1.18 in) radius.
- Never crease a SATA/SAS data cable.
- Do not rely on components like the drive cage, power supply, or system cover to push cables down into the chassis.

CAUTION: Always pull the connector - NEVER pull on the cable. Pulling on the cable could damage the cable and result in a failed power supply.

Hot-Plug Hard Drive

https://support.hpe.com/hpesc/public/videoDisplay?videoId=vpsg00003129en_us&noframe

Hot-plug hard drive removal

Before you begin: Review and follow Precautions .

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.

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.
3. Close the drive handle to lock the hard drive into place.
4. If you are replacing a hard drive blank, slide the blank into the hard drive bay until it clicks into place.

2U System Tray

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2U System Tray removal

Shown is the SL390G7 2U server. The procedure is the same for the SL230G8 2U server.

Before you begin: Review and follow Precautions . Review and follow Power down procedures for the 2U server.**NOTE: The 2U half-width server trays fit into the left side only or the right side only of the S6500 chassis. The removal and replacement procedure is the same for both, with the exception of the location of the release handle. The release handle is always located on the outer end of the system tray.**

1. Press the release tab to unlock the release handle.
2. Pull the release handle and slide the 2U system tray out of the S6500 chassis until it stops.
3. Press in on the release button located on the outside edge of the 2U system tray and slide the server completely out of the chassis.**CAUTION: Be sure to support the 2U system tray from underneath.**
4. Place the 2U system tray on a flat anti-static surface.
5. Slide two 1U half-wide node blanks into the empty server bay.**NOTE: The same 1U half-wide node blank can be turned over to fit in either the left or right side of the S6500 chassis.**

2U System Tray replacement

1. If necessary, remove the two 1U half-node blanks from the appropriate server bay.
2. While supporting the 2U system tray from underneath, align and slide the 2U system tray all the way into the S6500 chassis until it is fully seated.
3. Press the release handle in until it locks into place behind the release tab.

Hot-Plug Hard Drive Cage

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Hot-plug hard drive cage removal

Before you begin: Review and follow Precautions . Review and follow Power down procedures for the 2U server and remove the 2U system tray.

1. Disconnect the power and mini-SAS cables from the rear of the hot-plug hard drive cage backplane.
2. Loosen the two captive T-15 thumbscrews that secure the hot-plug hard drive cage to the server chassis.
3. Slide the cage forward until it stops.
4. Lift the hot-plug hard drive cage up and out of the server chassis.
5. If the hot-plug hard drive cage is being replaced, remove all hot-plug hard drives and hard drive blanks and transfer to the new hot-plug hard drive cage.

Hot-plug hard drive cage replacement

1. Align the guide tabs on the side of the hot-plug hard drive cage and lower the hot-plug hard drive cage down into the front end of the server chassis.
2. Slide the cage back until it stops.
3. Tighten the two captive T-15 thumbscrews to secure the hot-plug hard drive cage to the server chassis.
4. Connect the mini-SAS and power cables to the rear of the hot-plug hard drive cage backplane.

FlexibleLOM Riser Assembly

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FlexibleLOM riser assembly removal

Before you begin: Review and follow Precautions . Review and follow Power down procedures for the 2U server and remove the 2U system tray. Remove the hot-plug hard drive cage.

1. Remove the two T-10 screws that secure the FlexibleLOM riser assembly to the front bezel.
2. Carefully and evenly pull the FlexibleLOM riser assembly straight up and off of the system board.

FlexibleLOM riser assembly replacement

1. Carefully align and evenly insert the FlexibleLOM riser assembly into the FlexibleLOM riser slot in the system board until it is fully seated.
2. Replace the two T-10 screws to secure the FlexibleLOM riser assembly to the front bezel.

FlexibleLOM Expansion Card

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FlexibleLOM expansion card removal

Before you begin: Review and follow Precautions . Review and follow Power down procedures for the 2U server and remove the 2U system tray. Remove the hot-plug hard drive cage and FlexibleLOM riser assembly.

1. Remove the T-15 screw that secures the FlexibleLOM expansion card to the FlexibleLOM riser assembly.
2. Carefully and evenly pull the FlexibleLOM expansion card out of the FlexibleLOM slot in the FlexibleLOM riser card.

FlexibleLOM expansion card replacement

1. Align the FlexibleLOM expansion card with the FlexibleLOM slot in the FlexibleLOM riser card and insert it fully.
2. Replace T-15 screw to secure the FlexibleLOM expansion card to the FlexibleLOM riser assembly.

FlexibleLOM Riser Card

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FlexibleLOM riser card removal

Before you begin: Review and follow Precautions . Review and follow Power down procedures for the 2U server and remove the 2U system tray. Remove the hot-plug hard drive cage, FlexibleLOM riser assembly and if installed, the FlexibleLOM expansion card.

1. Remove the two T-15 screws that secure the FlexibleLOM riser card to the FlexibleLOM riser assembly bracket.
2. Remove the FlexibleLOM riser card.

FlexibleLOM riser card replacement

1. Align the FlexibleLOM riser card standoffs with the screw holes in the FlexibleLOM riser assembly bracket.
2. Replace the two T-15 screws to secure the FlexibleLOM riser card to the FlexibleLOM riser assembly bracket.

Top Rear GPU Module

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Top rear GPU module removal

Before you begin: Review and follow Precautions . Review and follow Power down procedures for the 2U server and remove the 2U system tray.

1. Disconnect the 2-pin cable from the GPU module.
2. Remove the 5mm P1 screw that secures the GPU module to its cage.
3. Disconnect the power cable from the GPU module.
4. Remove the three 4mm T-15 screws that secure the GPU module to the rear GPU shelf.
5. Separate the top rear GPU module from its connector in rear GPU shelf assembly.
6. Lift and remove the top rear GPU module out of the server chassis.

Top rear GPU module replacement

1. Carefully lower the GPU module onto the top rear shelf aligning it with its connector on the rear GPU shelf.**CAUTION: Use care not to pinch any cables when lowering the GPU module.**
2. Slide the GPU module into its connector on the rear GPU shelf until it is fully seated.
3. Replace the three 4mm T-15 screws to secure the GPU module to the rear GPU shelf.**NOTE: To ensure alignment of all the screws, do not fully tighten them until after they are all in.**
4. Connect the power cable to the GPU module.
5. Replace the 5mm P1 screw to secure the GPU module to its cage.
6. Connect the 2-pin cable to the GPU module.

Front GPU Module

https://support.hpe.com/hpesc/public/videoDisplay?videoId=vpsg00003136en_us&noframe

Front GPU module removal

Before you begin: Review and follow Precautions . Review and follow Power down procedures for the 2U server and remove the 2U system tray.

1. Loosen the T-15 screw that secures the front GPU cage to the GPU bracket.
2. Separate the front GPU module and cage from its connector in PCI riser assembly.
3. Carefully rotate up the GPU module and cage to access the cables.
4. Disconnect power cable that connects the PCI riser assembly to the GPU power board.
5. Disconnect the 2-pin cable from the GPU module.
6. Remove the 5mm P1 screw that secures the GPU module to its cage.
7. Disconnect the power cable from the GPU module.
8. Remove the three 4mm T-15 screws that secure the GPU module to its cage.
9. Remove the front GPU module from its cage.
10. If you need to remove the GPU cage, remove the power cable from the cable clips and foam routing channel.

Front GPU module replacement

1. If you removed the GPU cage earlier, route the power cable from the GPU power board around the cage and into the cable clips and foam routing channel.
2. Rotate the GPU cage up and position the GPU module with its three-hole bracket in the cage.
3. While holding the GPU module in position, replace the three 4mm T-15 screws to secure the GPU module to its cage.**NOTE: To ensure alignment of all the screws, do not fully tighten them until after they are all in.**
4. Connect the power cable to the GPU module.
5. Replace the 5mm P1 screw to secure the GPU module to its cage.
6. Connect the 2-pin cable to the GPU module.
7. Connect the power cable from the GPU power board to the PCI riser assembly.
8. Rotate the GPU module and cage down and align the guide tabs from the GPU bracket with the notches in the GPU cage.
9. Slide the GPU module and cage to both seat the GPU module in its connector on the PCI riser assembly and lock the cage in place on the GPU bracket.

.0. Tighten the T-15 screw to secure the front GPU cage to the GPU bracket.

GPU Riser Assembly

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GPU riser assembly removal

Before you begin: Review and follow Precautions . Review and follow Power down procedures for the 2U server and remove the 2U system tray.

1. Remove the 4.5 mm T-15 screw that secures the GPU riser assembly to the rear GPU shelf assembly.
2. Loosen the two captive T-15 screws that secure the GPU riser assembly to the side of the server chassis.
3. Carefully, but firmly lift the GPU riser assembly up to disengage it from its connections and remove.

GPU riser assembly replacement

1. Carefully align the GPU riser assembly with its front and rear connectors and two guide pins.
2. Press the GPU riser assembly down to fully seat the assembly with its front and rear connections.
3. Tighten the two captive T-15 screws to secure the GPU riser assembly to the side of the server chassis.
4. Replace the 4.5 mm T-15 screw to secure the GPU riser assembly to the rear GPU shelf assembly.

GPU Power Board

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GPU power board removal

Before you begin: Review and follow Precautions . Review and follow Power down procedures for the 2U server and remove the 2U system tray. Remove the GPU riser assembly.

1. Disconnect both GPU power cables from the GPU power board.
2. Remove the two T-15 screws that secure the GPU power board to the side of the server chassis.

3. Lift the GPU power board up and out of the server chassis.

GPU power board replacement

1. Toe the connector end of GPU power board into the rear cut-out and align the screw holes with the side of the server chassis.
2. Replace the two T-15 screws to secure the GPU power board to the side of the server chassis.
3. Connect both GPU power cables to the GPU power board.

Rear GPU Shelf Assembly

https://support.hpe.com/hpesc/public/videoDisplay?videoId=vpsg00003139en_us&noframe

Rear GPU shelf assembly removal

Before you begin: Review and follow Precautions . Review and follow Power down procedures for the 2U server and remove the 2U system tray. Remove the GPU riser assembly.

1. Disconnect the power connector from the GPU power board to the rear GPU shelf.
2. Remove the four 4.5 mm T-15 screws that secure the rear GPU shelf assembly to the rear of the server chassis.
3. Slide the rear GPU shelf assembly forward enough to disengage guide tabs on the bottom of the rear GPU shelf assembly.
4. Lift the rear GPU shelf assembly up and out of the server chassis.

Rear GPU shelf assembly replacement

1. Align the bottom guide tabs with the notch openings in the chassis bottom and lower the rear GPU shelf assembly into the base of the server chassis.
2. Slide the GPU shelf back to lock in the guide tabs and align with the rear screw holes.
3. Replace the four 4.5 mm T-15 screws to secure the rear GPU shelf assembly to the rear of the server chassis.
4. Connect the power connector from the rear GPU shelf to the GPU power board.

Bottom Rear GPU Module

https://support.hpe.com/hpesc/public/videoDisplay?videoId=vpsg00003140en_us&noframe

Bottom rear GPU module removal

Before you begin: Review and follow Precautions . Review and follow Power down procedures for the 2U server and remove the 2U system tray. Remove the GPU riser assembly and the rear GPU shelf assembly.

1. Loosen the two captive T-15 thumbscrews that secure the top shelf of the rear GPU shelf assembly.
2. Slide the top shelf out of the assembly.
3. Disconnect the power cable from the GPU module.
4. Disconnect the 2-pin cable from the GPU module.
5. Remove the 5mm P1 screw that secures the GPU module to the bottom rear GPU shelf.
6. Remove the three 4mm T-15 screws that secure the GPU module to the bottom rear GPU shelf.
7. Pull the bottom rear GPU module from its connector in the rear GPU shelf assembly and remove.

Bottom rear GPU module replacement

1. Carefully align and push the GPU module into its connector on the bottom rear GPU shelf until it is fully seated.
2. Replace the three 4mm T-15 screws to secure the GPU module to the bottom rear GPU shelf.**NOTE: To ensure alignment of all the screws, do not fully tighten them until after they are all in.**
3. Replace the 5mm P1 screw to secure the GPU module to the bottom rear GPU shelf.
4. Connect the 2-pin cable to the GPU module.
5. Connect the power cable to the GPU module.
6. Slide the top shelf into the rear GPU shelf assembly aligning the shelf with the guide slots.
7. Tighten the two captive T-15 thumbscrews to secure the top shelf of the rear GPU shelf assembly.

GPU Bracket

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GPU bracket removal

Before you begin: Review and follow Precautions . Review and follow Power down procedures for the 2U server and remove the 2U system tray. Remove the front GPU module and cage, and GPU riser assembly.

1. Loosen the four captive T-15 screws that secure the GPU bracket to the sides of the server chassis.
2. Lift the GPU bracket up and out of the server chassis.

GPU bracket replacement

1. Lower and align the GPU bracket with the screw holes on the sides of the server chassis.
2. Tighten the four captive T-15 screws to secure the GPU bracket to the sides of the server chassis.

Internal SFF Hard Drive

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Internal SFF hard drive removal

Before you begin: Review and follow Precautions . Review and follow Power down procedures for the 2U server and remove the 2U system tray.

NOTE: The 2U server can be configured to include internal SFF hard drives. If so, hard drive trays will occupy the front GPU cage and the top rear GPU shelf connected together by one mini-SAS and power cable bundle. The 2U server can accommodate up to four SFF quick-release hard drives, two in each tray.

1. To access an SFF hard drive inside the front GPU cage, first loosen the cages captive T-15 thumbscrew, slide the cage out of its guide pins, and rotate the cage up.
2. Slide the hard drive carrier latches to unlock the carrier handle.
3. Raise the carrier handle to disconnect the drive from the connector in the hard drive tray.
4. Lift the SFF hard drive out of its tray.

Internal SFF hard drive replacement

1. If not already open, slide the SFF hard drive carrier latches to unlock the carrier handle.
2. Raise the carrier handle.
3. Align the slots on the sides of the carrier with the guide pins in the cage and lower the SFF hard drive into the hard drive tray.
4. Rotate the carrier handle down to fully seat the SFF hard drive into the connector in the SFF hard drive tray.
5. Lock the hard drive carrier latches.
6. If the SFF hard drive is inside the front GPU cage, rotate the cage down, slide the cage to fully engage the two guide pins, and tighten the T-15 thumbscrew.

Internal Hard Drive Trays

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Internal hard drive trays removal

Before you begin: Review and follow Precautions . Review and follow Power down procedures for the 2U server and remove the 2U system tray. Remove the hot-plug hard drive cage, GPU power board, and GPU riser assembly.

NOTE: The 2U server can be configured to include internal SFF hard drives. If so, hard drive trays will occupy the front GPU cage and the top rear GPU shelf connected together by one mini-SAS and power cable bundle. Removal and replacement requires that both hard drive trays remain connected by the cable bundle throughout.

1. Disconnect the two power connectors from the internal hard drive trays cable bundle to the personality board.
2. Remove the four 4.5 mm T-15 screws that secure the rear GPU shelf assembly to the rear of the server chassis.
3. Slide the rear GPU shelf assembly forward enough to disengage guide tabs on the bottom of the rear GPU shelf assembly.
4. Loosen the T-15 screw that secures the front GPU cage to the GPU bracket.
5. Slide the GPU cage to disengage it from its guide tabs.

6. Carefully lift the GPU cage and the rear GPU shelf assembly up and set both aside just enough to gain access to the GPU bracket.**NOTE: The internal hard drive cable bundle remains connected to the system board below the GPU bracket.**
7. Loosen the four captive T-15 screws that secure the GPU bracket to the sides of the server chassis.
8. Lift the GPU bracket up and out of the server chassis.
9. Disconnect the cable bundles mini-SAS cable from the system board and remove the internal hard drive trays.

Internal hard drive trays replacement

1. Connect the mini-SAS cable from the internal hard drive trays to the rear mini-SAS connector on the system board.
2. Insert the GPU bracket and tighten the four captive T-15 screws to secure it to the sides of the server chassis.
3. Place the internal hard drive trays roughly into position in the server chassis.
4. Slide the GPU cage to fully engage the two guide pins, and tighten the T-15 thumbscrew.
5. Slide the rear GPU shelf towards the rear of the server chassis to engage the bottom guide tabs underneath and align with the rear screw holes.
6. Replace the four 4.5 mm T-15 screws to secure the rear GPU shelf assembly to the rear of the server chassis.
7. Connect the two power connectors from the internal hard drive trays cable bundle to the personality board.

2U PCI Riser Assembly

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2U PCI riser assembly removal

Before you begin: Review and follow Precautions . Review and follow Power down procedures for the 2U server and remove the 2U system tray. Remove the hot-plug hard drive cage, front GPU module and cage, GPU riser assembly, and GPU bracket.

NOTE: If your configuration includes internal hard drive trays, remove them.

1. Remove the T-10 screw that secures the 2U PCI riser assembly to the front bezel.
2. Loosen the captive T-15 thumbscrew that secures the 2U PCI riser assembly to the server chassis.
3. Carefully and evenly pull the 2U PCI riser assembly straight up and off of the system board.
4. If a SAS controller is installed in the 2U PCI riser assembly, disconnect the mini-SAS cable from the SAS controller card.

2U PCI riser assembly replacement

1. If a SAS controller is installed in the 2U PCI riser assembly, connect the mini-SAS cable to the SAS controller card.
2. Carefully align and evenly insert the 2U PCI riser assembly into the 2U PCI riser slot in the system board until it is fully seated.
3. Align and tighten the captive T-15 thumbscrew to secure the 2U PCI riser assembly to the server chassis.
4. Replace the T-10 screw to secure the 2U PCI riser assembly to the front bezel.

SAS Controller Card

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SAS controller card removal

Before you begin: Review and follow Precautions . Review and follow Power down procedures for the 2U server and remove the 2U system tray. Remove the hot-plug hard drive cage, front GPU module and cage, GPU riser assembly, GPU bracket, and the 2U PCI riser assembly.

NOTE: If your configuration includes internal hard drive trays, remove them.

1. Remove the T-15 screw that secures the SAS controller card to the 2U PCI riser assembly.
2. Carefully and evenly pull the SAS controller card out of the PCI slot in the PCI riser card.

SAS controller card replacement

1. Align the SAS controller card with the PCI slot in the PCI riser card and insert it fully.

2. Replace the T-15 screw to secure the SAS controller card to the 2U PCI riser assembly.

Cache Module

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Cache module removal

Before you begin: Review and follow Precautions . Review and follow Power down procedures for the 2U server and remove the 2U system tray. Remove the hot-plug hard drive cage, front GPU module and cage, GPU riser assembly, GPU bracket, and the 2U PCI riser assembly.

NOTE: If your configuration includes internal hard drive trays, remove them.

NOTE: The system may use a local cache module or a cache module connected to a SAS controller card. The procedures are the similar for both.

1. Disconnect the FBWC capacitor pack cable from the cache module.
2. For a local cache module, press the release tab to unlock the cache module and pull it out of the cache module slot in the system board.
3. For a cache module on a SAS controller, open the cache slot latches and lift the cache card out of the cache slot.**NOTE:** To recover cached data from a failed server, refer to the maintenance service guide.

Cache module replacement

1. For a cache module on a SAS controller, align the notch in the cache module with key in the cache slot; insert the cache module until the latches close and the module is fully seated.
2. For a local cache module, align the notch in the cache module with key in the cache slot; insert the cache module until it is fully seated; then lower the cache module and lock it into place.
3. Connect the FBWC capacitor pack cable to the cache module.

FBWC Capacitor Pack

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FBWC capacitor pack removal

Before you begin: Review and follow Precautions . Review and follow Power down procedures for the 2U server and remove the 2U system tray. Remove the hot-plug hard drive cage, front GPU module and cage, GPU riser assembly, GPU bracket, and the 2U PCI riser assembly.

NOTE: If your configuration includes internal hard drive trays, remove them.

1. Disconnect the FBWC capacitor pack cable from a local cache card or from a cache card in a SAS controller.
2. Gently pry the FBWC capacitor pack out of its holder on the side of the server chassis.
3. While noting the route of the cable for replacement, remove the FBWC capacitor pack and cable from the server chassis.**NOTE:** To recover cached data from a failed server, refer to the maintenance service guide.

FBWC capacitor pack replacement

1. Insert the FBWC capacitor pack into its holder on the side of the server chassis until it locks into place.
2. Connect the FBWC capacitor pack cable to a local cache card or to a cache card in a SAS controller.
3. Route the FBWC cable as recommended by the system documentation.

Processor Air Baffle

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Processor air baffle removal

Before you begin: Review and follow Precautions . Review and follow Power down procedures for the 2U server and remove the 2U system tray. Remove the hot-plug hard drive cage, front GPU module and cage, GPU riser assembly, GPU bracket, and the 2U PCI riser assembly.

NOTE: If your configuration includes internal hard drive trays, remove them.

1. Grasp the processor air baffle by the two finger holes and lift it straight up and out of the system tray to remove.

Processor air baffle replacement

1. Make sure that all of the DIMM latches in the center of the server are in the closed position.

2. Align and lower the processor air baffle over the center DIMM latches and heat sink screws.**NOTE: When properly installed, the processor air baffle encloses the end of the rear heat sink. You may need to adjust the heat sink fins to help the fit.**

Memory DIMM

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Memory DIMM removal

Before you begin: Review and follow Precautions . Review and follow Power down procedures for the 2U server and remove the 2U system tray. Remove the hot-plug hard drive cage, front GPU module and cage, GPU riser assembly, GPU bracket, the 2U PCI riser assembly, and the processor air baffle.

NOTE: If your configuration includes internal hard drive trays, remove them.

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

Memory DIMM replacement

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

Heat Sink And Processor

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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.

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 . Review and follow Power down procedures for the 2U server and remove the 2U system tray. Remove the hot-plug hard drive cage, front GPU module and cage, GPU riser assembly, GPU bracket, the 2U PCI riser assembly, and the processor air baffle.

NOTE: If your configuration includes internal hard drive trays, remove them.

1. Using a cross-torque technique, loosen the four T-15 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 system tray, 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 processor 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 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 the appropriate heat sink, oriented as labeled, over the four 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 screws in a diagonal pattern to secure the heat sink to the system board.

Personality Board

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Personality board removal

Before you begin: Review and follow Precautions . Review and follow Power down procedures for the 2U server and remove the 2U system tray. Remove the hot-plug hard drive cage, front GPU module and cage, GPU power board, GPU riser assembly, GPU bracket, the 2U PCI riser assembly, and the processor air baffle.

NOTE: If your configuration includes internal hard drive trays, remove them.

NOTE: The left node and right node versions of the personality board are different but the remove/ replace procedures are the same.

1. Disconnect all cables from the personality board, noting their location for replacement.
2. Remove the four T-15 screws that secure the personality board to the 2U system tray.
3. Slide the personality board out from under the tray cutout and then up and out of the 2U system tray.

Personality board replacement

1. Toe the personality board into position aligned over the screw standoffs in the 2U system tray.
2. Replace the four T-15 screws to secure the personality board to the 2U system tray.
3. Connect all cables to the personality board that were disconnected earlier.

System Board

https://support.hpe.com/hpesc/public/videoDisplay?videoId=vpsg00003152en_us&noframe

System board removal

Before you begin: Review and follow Precautions . Review and follow Power down procedures for the 2U server and remove the 2U system tray. Remove the hot-plug hard drive cage, FlexibleLOM riser assembly, front GPU module and cage, GPU power board, GPU riser assembly, GPU bracket, the 2U PCI riser assembly, and cache module.

NOTE: If your configuration includes internal hard drive trays, remove them.

1. Lift the FBWC capacitor pack cable off of the system board.
2. Disconnect the mini-SAS cable from the system board.
3. Disconnect the system board power cable from the system board.
4. Disconnect the RPS cable from the system board.
5. Remove the eight T-15 screws that secure the system board to the system tray.
6. Slide the system board toward the rear of the system tray then lift it up and out of the system tray.

System board replacement

NOTE : Remove the memory, heat sinks and processors, and processor air baffle from the defective system board and transfer them to the new system board.

1. Carefully maneuver the system board into position in the system tray about a half an inch back from the front bezel, being careful not to pinch any cables below.**NOTE: Make sure the system board is flat on the tray, below the riser guides.**
2. Slide the system board forward until its connectors fit into the front bezel and the holes in the system board align over the screw holes.

3. Replace the eight T-15 screws to secure the system board to the system tray.**CAUTION: To avoid damaging components, avoid unnecessary pressure or over-tightening.**
4. Connect the RPS cable to the system board.
5. Connect the system board power cable to the system board.
6. Connect the mini-SAS cable to the system board.
7. Reroute the FBWC capacitor pack cable on the system board.