HPE ProLiant ML350p 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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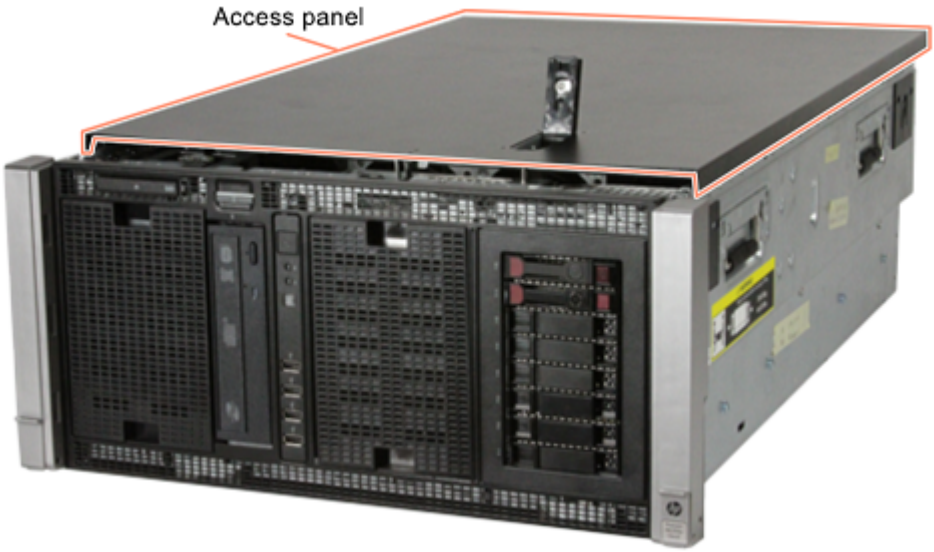
Front view



Access panel



Hot-plug hard drive



Drive cage blank



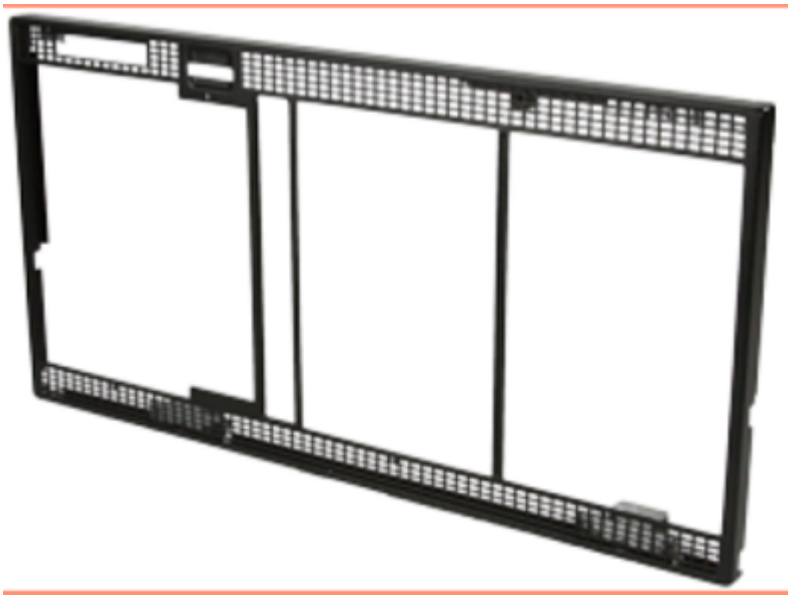
Front I/O module



Optical drive



Rack bezel



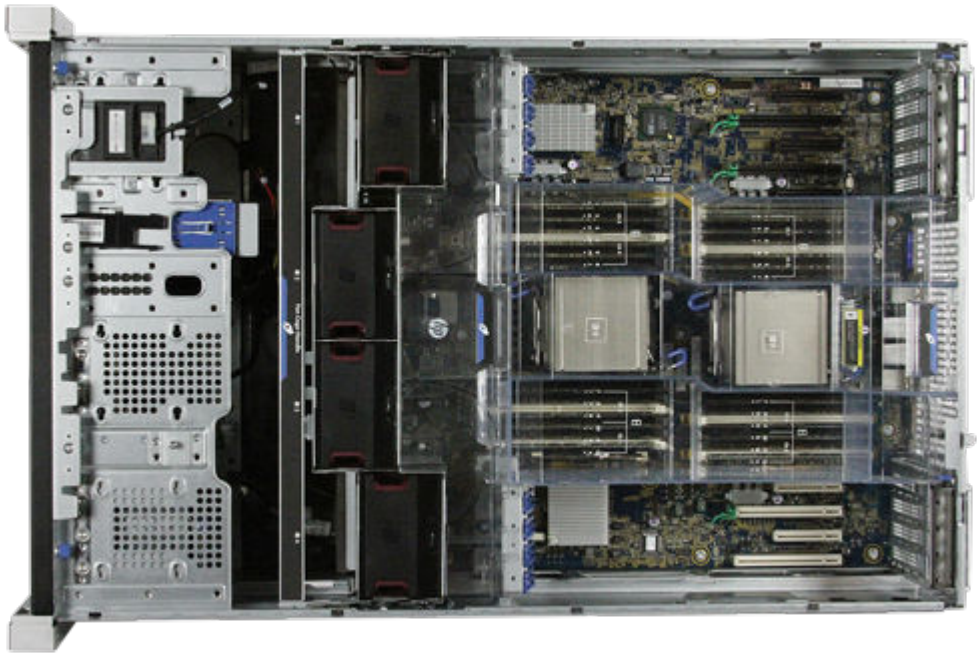
Back view



Hot-plug power supply



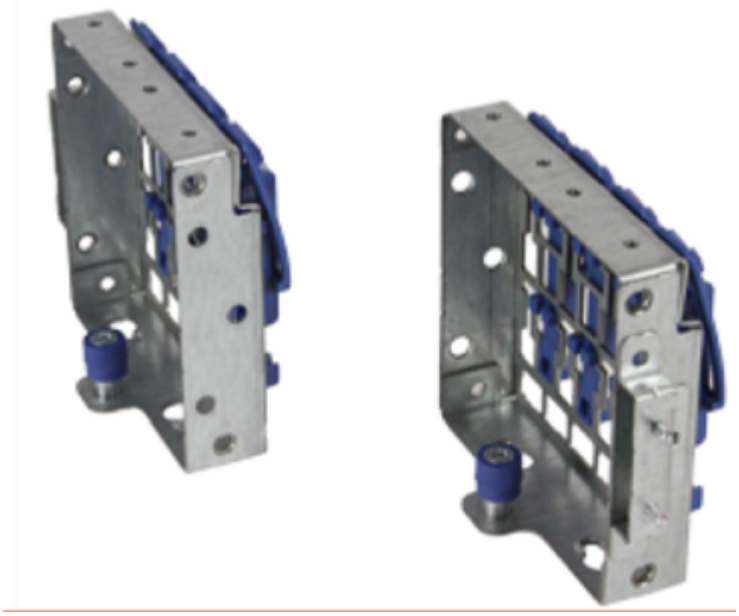
Internal view



Hot-plug fan module



Bracket support holders



Air baffle



DIMMs

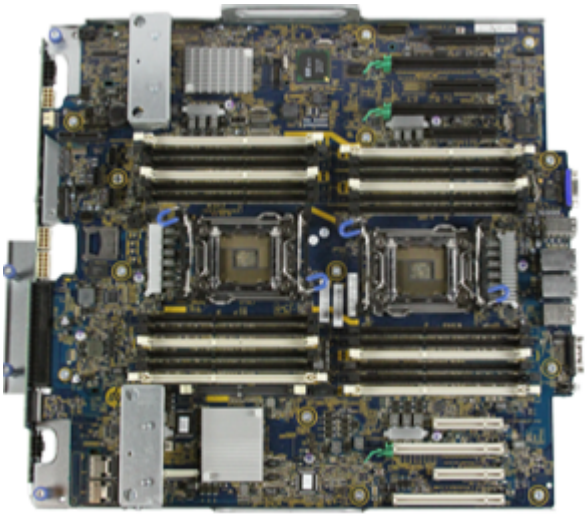


Heat sink and processor

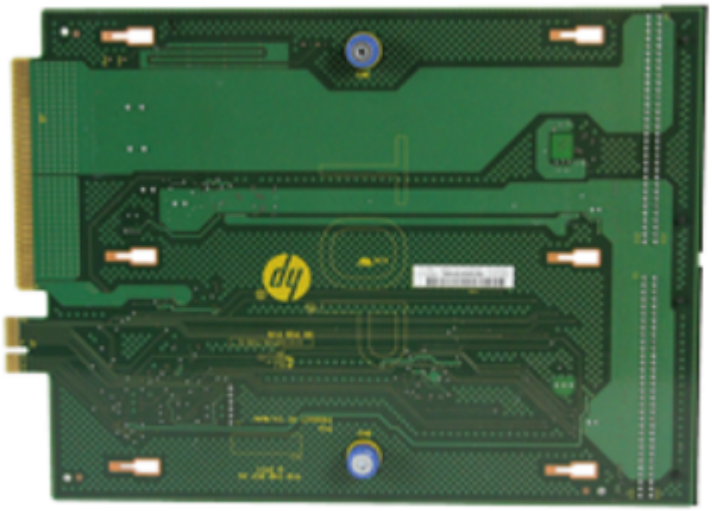




System board and tray



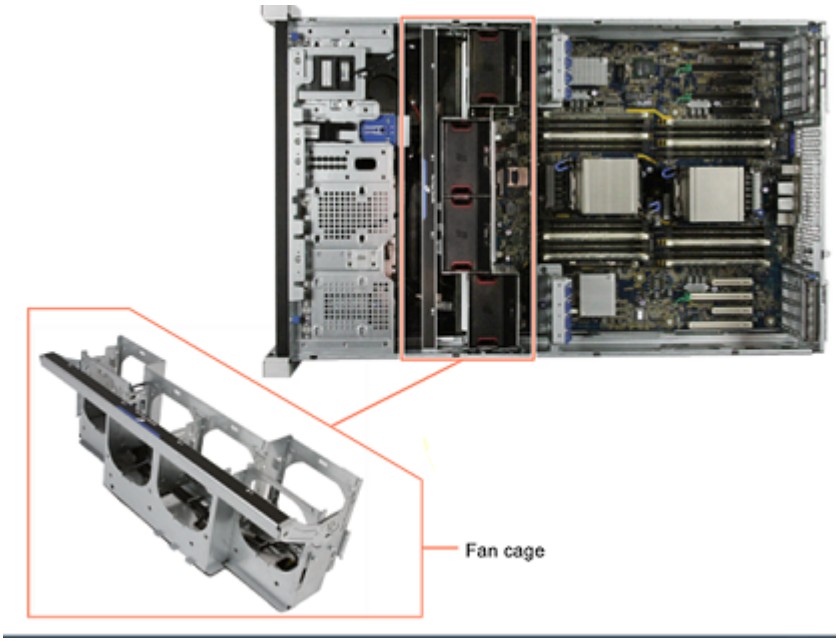
Power backplane



Cache module



Fan cage



RPS air baffle



Hard drive backplane



Mini-SAS cable



FBWC capacitor pack



Power supply cable



SATA cable



SID assembly



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.
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.

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)."

Rack warnings

WARNING: To reduce the risk of personal injury or damage to the equipment, be sure that: The leveling jacks are extended to the floor. The full weight of the rack rests on the leveling jacks. The stabilizing feet are attached to the rack if it is a single-rack installation. The racks are coupled together in multiple-rack installations. Only one component is extended at a time. A rack may become unstable if more than one component is extended for any reason. WARNING: To reduce the risk of personal injury or equipment damage when unloading a rack: At least two people are needed to safely unload the rack from the pallet. An empty 42U rack can weigh as much as 115 kg (253 lb), can stand more than 2.1 m (7 ft) tall, and may become unstable when being moved on its casters. Never stand in front of the rack when it is rolling down the ramp from the pallet. Always handle the rack from both sides. WARNING: To reduce the risk of personal injury or damage to the equipment, adequately stabilize the rack before extending a component outside the rack. Extend only one component at a time. A rack may become unstable if more than one component is extended. WARNING: When installing a server in a telco rack, be sure that the rack frame is adequately secured at the top and bottom to the building structure.

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 .**





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.**

weight1_kgweight1_lb



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

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

Preparation Procedures

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

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

Power on the server

To power on the server, press the Power On/Standby button.

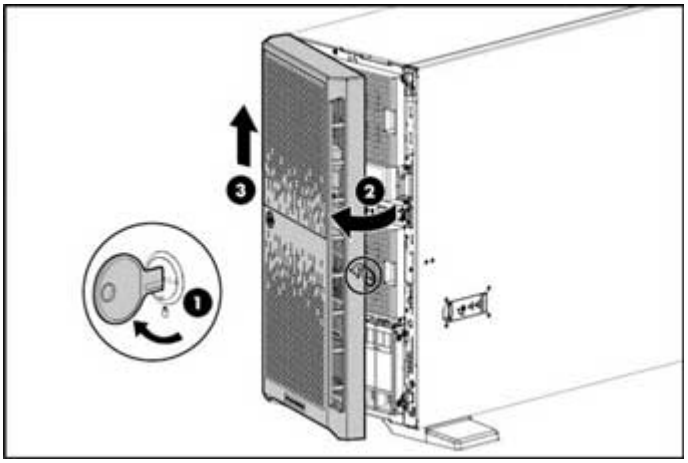
Power off the server

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

1. Back up the server data.
2. Shut down the operating system as directed by the operating system documentation.**NOTE:** If the operating system automatically places the server in Standby mode, omit the next step.
3. 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.**IMPORTANT: Pressing the UID button illuminates the blue UID LEDs on the front and rear panels. In a rack environment, this feature facilitates locating a server when moving between the front and rear of the rack.**
4. Disconnect the power cords.

The system is now without power.

Open or remove the tower bezel



1. This server has a removable bezel that must be unlocked and opened before accessing the hard drives. The bezel should be kept closed during normal server operations.

2. Use the key provided with the server to unlock the bezel with a counterclockwise turn.
3. If necessary, remove the tower bezel.

Extend the server from the rack

IMPORTANT: If the server is installed in a telco rack, remove the server from the rack to access internal components.

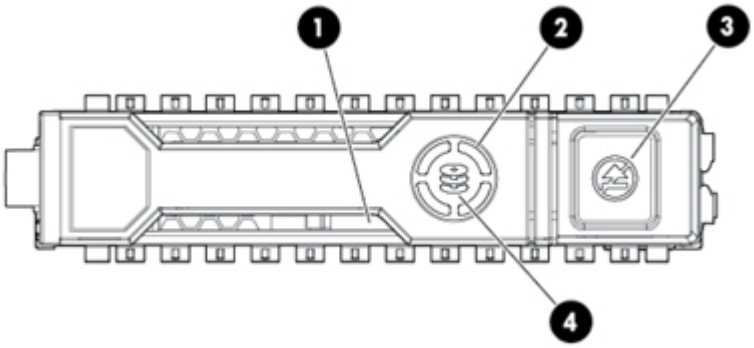
1. Extend the server on the rack rails until the server rail-release latches engage.**WARNING: To reduce the risk of personal injury or equipment damage, be sure that the rack is adequately stabilized before extending a component from the rack.WARNING: To reduce the risk of personal injury, be careful when pressing the server rail-release latches and sliding the server into the rack. The sliding rails could pinch your fingers.**
2. After performing the installation or maintenance procedure, slide the server into the rack by pressing the server rail-release latches.

For bracket support holders

Before removing the bracket support holders, remove any installed expansion boards supported by the bracket support holders.

Hard Drive LED Definitions

Hard drive LED definitions



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

Hot-Plug Power Supply

https://support.hpe.com/hpesc/public/videoDisplay?videoId=vpsg00002953en_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.

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

NOTE: Shown are procedures for the SFF, small form factor, hard drives. Procedures for LFF, large form factor drives are essentially the same.

1. For tower configurations, unlock and open the front bezel.
2. If necessary, remove the front bezel.**CAUTION: The front bezel should be closed during normal server operation.**
3. Press the hot plug button to release the handle.
4. Pull the handle back and use it to slide the hard drive out of the hard drive bay.
5. If removing a hard drive blank, pinch the release tabs together and slide the hard drive blank out of the hard drive bay.

Hot-plug hard drive replacement

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

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, 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 chassis.**
2. Open the retaining latch fully. The access panel slides back releasing it from the system chassis.
3. Lift the access panel up and off of the server.

Access panel replacement

To replace the access panel, reverse the removal procedure.

Hot-Plug Fan Module

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Hot-plug fan module removal

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

IMPORTANT: The server can have up to four fan modules. A fan module in slot 1 is considered redundant and may be a fan blank in server configurations with only one processor.**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. If replacing a hot-plug fan module without powering down the server, it is critical to replace the fan as soon as possible to prevent damage from overheating.

1. Pinch the release latches at the top of the fan module to unlock the fan module.
   ```
   NOTE:
   ```
   Beginning in August of 2013, the fan module will contain only one release latch instead of two release latches.
2. Continue to pinch the fan module and pull it straight up and out of the fan cage.**NOTE: If a fan louver were present it would be found between the fan module and the rear of the server chassis.**

Hot-plug fan module replacement

1. Align the fan module with the airflow arrows on top and pointing to the rear of the server chassis.
2. Lower the fan module straight down and confirm that it is fully connected to the fan cage connector.
   ```
   NOTE:
   ```
   Beginning in August of 2013, the fan module will contain only one release latch instead of two release latches.

SID Assembly

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SID assembly removal

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

1. Lift the fan cage handle to gain better access to the SID, System Information Display, cable connector.
2. Disconnect the SID cable from its cable quick release connector.
3. Lift the SID cable out of its routing path.
4. Remove the two 6mm T-15 Torx screws that secure the SID assembly to the server chassis.
5. Slide the SID assembly back through its cutout and out of the server chassis.

SID assembly replacement

1. Position the SID assembly through its cutout and aligned with the two screw holes on either side.
2. Replace the two 6mm T-15 Torx screws to secure the SID assembly to the server chassis.
3. Route the SID cable through its routing path.
4. Connect the SID cable to its cable quick release.
5. Lower the fan cage handle to its locked position.

Air Baffle

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Air baffle removal

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

1. Locate and grasp the hand holds in the front and rear of the air baffle.
2. Lift the air baffle straight up and out of the server chassis.

Air baffle replacement

Align the air baffle with the fan cage and lower it into the server chassis until it is fully seated.

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 the access panel and the 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.

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 the access panel and the air baffle.

1. Disconnect any external or internal cables connected to the expansion board.
2. Press the release tab that secures the PCI-E expansion boards.

3. Carefully pull the expansion board out of PCI-E expansion slot.

Expansion board replacement

To replace the expansion board reverse the removal procedure.

Fan Cage

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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 and the air baffle.

1. Lift the fan cage handle until it is fully upright.
2. Continue to lift the fan cage straight up and out of the server chassis.**NOTE: If fan cage is being replaced, transfer the fan modules to the new fan cage.**

Fan cage replacement

1. Align the sides of the fan cage with the metal guides on the sides of the server chassis.
2. Being careful not to pinch any cables below, lower the fan cage fully, connecting with the system board.
3. Lower the fan cage handle to its locked position.

Rack Bezel

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Rack bezel 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. Loosen the two captive T-15 Torx thumbscrews that secure the rack bezel to the front of the server chassis.
2. Rotate the rack bezel down until it is perpendicular to the front of the server chassis.
3. Slide the rack bezel to the left and pull it out of the two hinge bays in the server chassis to remove.

Rack bezel replacement

1. Holding the rack bezel perpendicular to the front of the server chassis, insert the hinge ends into the two hinge bays in the server chassis.
2. Slide the rack bezel to the right and rotate the rack bezel up until it is flush with the front of the server chassis.
3. Tighten the two captive T-15 Torx thumbscrews to secure the rack bezel to the front of the server chassis.

Drive Cage Blank

https://support.hpe.com/hpesc/public/videoDisplay?videoId=vpsg00002963en_us&noframe

Drive cage blank removal

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

1. For tower configurations, unlock and open the front bezel.
2. If necessary, remove the front bezel.**CAUTION: The front bezel should be closed during normal server operation.**
3. Grasp the drive cage blank by its indents on the front and pull straight out to remove.

Drive cage blank replacement

1. Align the drive cage blank with the key in drive bay 2 or drive bay 3.**NOTE** : The drive cage blank is keyed to fit only one way and only into drive bay 2 or drive bay 3. There is no drive cage blank that fits drive bay 1.
2. Firmly press the drive cage blank straight into the drive bay until fully inserted.

3. Route the SID cable through its routing path.
4. If necessary, replace the front bezel.

Optical Drive

https://support.hpe.com/hpesc/public/videoDisplay?videoId=vpsg00002964en_us&noframe

Optical drive removal

Before you begin: Review and follow Precautions . Follow Preparation procedures to power down, extend or remove the server from the rack. Remove the access panel and rack bezel. For better access consider also removing the air baffle and fan cage.

1. For tower configurations, unlock and open the front bezel.
2. If necessary, remove the front bezel.**CAUTION: The front bezel should be closed during normal server operation.**
3. Disconnect the SATA power and data cables from the rear of the optical drive.
4. Gently, lift the blue plastic release tab just enough to release the optical drive.
5. Slide the optical drive out the front of the server.

Optical drive replacement

To replace the optical drive, reverse the removal procedure.

Hard Drive Backplane

https://support.hpe.com/hpesc/public/videoDisplay?videoId=vpsg00002965en_us&noframe

Hard drive backplane removal

Before you begin: Review and follow Precautions . Follow Preparation procedures to power down, extend or remove the server from the rack. Remove all drives connected to the backplane to be removed. Remove the access panel and rack bezel. For better access consider also removing the air baffle and fan cage.

NOTE : The procedure is shown with the SFF, Small Form Factor, backplane. The procedure is the same for the LFF, Large Form Factor, backplane.

1. Disconnect all mini-SAS and power cables connected to the rear of the backplane.**NOTE:** Take note of which cable is connected to which port for later replacement.
2. Loosen the captive T-15 Torx thumbscrew that secures the hard drive backplane to the rear of the drive cage.
3. Lift the backplane up and back off of the metal guide hooks at the rear of the drive cage to remove.

Hard drive backplane replacement

To replace the hard drive backplane reverse the removal procedure.

Mini-SAS Cable

https://support.hpe.com/hpesc/public/videoDisplay?videoId=vpsg00002966en_us&noframe

Mini-SAS cable 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 fan cage.

NOTE : There are two mini-SAS cables connecting the hard drive backplane in drive bay 1 and the system board. Mini-SAS cables connecting to hard drive backplanes in drive bays 2 and 3 will connect to optional SAS controllers installed in the PCI-E slots.

1. Disconnect the mini-SAS cable connected to the rear of the backplane.
2. Disconnect the mini-SAS cable from the system board or optional SAS controller card.
3. Carefully lift the mini-SAS cable out of the cable channel in the RPS air baffle.

Mini-SAS cable replacement

To replace the mini-SAS cable reverse the removal procedure.

SATA Cable

https://support.hpe.com/hpesc/public/videoDisplay?videoId=vpsg00002967en_us&noframe

SATA cable 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 fan cage.

1. Disconnect the SATA cable connected to the rear of the optical or other media drive.
2. Disconnect the SATA cable from the system board.
3. Carefully lift the SATA cable out of the cable channel in the RPS air baffle.

SATA cable replacement

To replace the SATA cable, reverse the removal procedure.

Power Supply Cable

https://support.hpe.com/hpesc/public/videoDisplay?videoId=vpsg00002968en_us&noframe

Power supply cable 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 fan cage.

NOTE : For every drive backplane there is a separate power supply cable

1. Disconnect the all of the power cables connected to the rear of the drive backplane, optical or other media drives.
2. Disconnect the power supply cable from the system board.
3. Carefully lift the power supply cable out of the cable channel in the RPS air baffle.

Power supply cable replacement

To replace the power supply cable reverse the removal procedure.

Front I/O Module

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Front I/O Module removal

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

1. For tower configurations, unlock and open the front bezel.
2. If necessary, remove the front bezel.**CAUTION: The front bezel should be closed during normal server operation.**
3. Disconnect the SID cable from its cable quick release connector.
4. Disconnect the four front panel connectors to the system board.
5. Carefully lift the I/O cable bundle out of the cable channel in the RPS air baffle.
6. Remove the 5mm Torx-15 screw that secures the front I/O module to the front of the server chassis.
7. Pull the front I/O module and its cable bundle out the front of the server chassis to remove.

Front I/O Module replacement

1. Feed the I/O cable bundle in through the open I/O module bay in the front of the server chassis.
2. Toe in the bottom of the front I/O module and align the top of the module with the screw hole in the front of the server chassis.
3. Replace the 5mm T-15 Torx screw to secure the front I/O module to the front of the server chassis.
4. Route the I/O bundle through the cable channel in the RPS air baffle.
5. Connect the four front panel connectors to the system board.
6. Connect the SID cable to its cable quick release connector.
7. If necessary, replace the front bezel.

Cache Module

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Cache Module removal

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

1. If installed, disconnect the cable to the FBWC capacitor pack.**CAUTION:** The cache module may be connected to a FBWC capacitor pack. To avoid loss of data, follow the guidelines in the service manual before disconnecting the cable from the cache module.
2. Open the cache module slot latches.
3. Remove the cache module from the cache slot on the system board.

Cache Module replacement

To replace the cache module, reverse the removal procedure.

FBWC Capacitor Pack

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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, air baffle and fan cage.

1. Gently lift the FBWC capacitor pack out of its holder in the RPS air baffle.
2. If necessary, disconnect the FBWC capacitor pack cable from the cache module or PCIe controller expansion board.
3. Lift the FBWC capacitor pack cable out of the routing channel in the server chassis.

FBWC capacitor pack replacement

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

Heat Sink And Processor

https://support.hpe.com/hpesc/public/videoDisplay?videoId=vpsg00002972en_us&noframe

Heat sink and processor removal

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

- Update the system ROM before installing the processor option. Refer to system documentation for download locations and procedure to install the latest ROM.

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

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

1. Press down and towards the heat sink to release the two heat sink retaining latches and rotate each latch to its open position.
2. Lift the heat sink straight up and out of the server chassis, being careful not to touch or spread the remaining thermal grease on the bottom.**IMPORTANT:** If the processor may be reused in this or any other system, remove the thermal grease with an alcohol swab. Allow the alcohol to evaporate before you continue.
3. If you are replacing the processor, open the processor locking lever, labeled 'open lever 1st', then begin to open the second processor locking lever.
4. Continue to lift the second processor locking lever to release the spring-loaded processor retaining bracket.
5. Being careful not to touch the processor contacts, grasp the tab of the processor housing and slide the processor out of the processor retaining bracket.
   CAUTION: To avoid damage to the processor: Handle the processor only by the front tab of its housing. Do not touch the bottom of the processor, especially the contact area.

Heat sink and processor replacement

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

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

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

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

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

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

Bracket Support Holders

https://support.hpe.com/hpesc/public/videoDisplay?videoId=vpsg00002973en_us&noframe

Bracket support holders 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.

1. Loosen the captive T-15 Torx thumbscrews that secure the left and right bracket support holders to the system board and server chassis.
2. Slide the bracket support holders away from the sides of the server chassis and lift up and out of the server chassis to remove.

Bracket support holders replacement

1. Align and lower the bracket support holders onto the guide pins on the system board bracket.
2. Slide the bracket support holders toward the sides of the server chassis to lock them in place.
3. Tighten the captive T-15 Torx thumbscrews to secure the left and right bracket support holders to the system board and server chassis.

System Board And Tray

https://support.hpe.com/hpesc/public/videoDisplay?videoId=vpsg00002974en_us&noframe

System board and tray 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, fan cage, cache module, expansion boards, and both bracket support holders.

1. Disconnect all cables connected to the system board and lift them out of their routing channels, noting their location for later reconnection.
2. Loosen the four captive T-15 Torx thumbscrews that secure the system board to the sever chassis.
3. Slide the system board tray towards the front of the server chassis until it stops.
4. Grasp the tray handles and carefully lift the system board and tray out of the sever chassis.

System board and tray replacement

NOTE: If the system board and tray is being replaced and not just removed for access to the power backplane, transfer all memory, heat sinks and processors to the new system board. To replace the system board and tray, 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.**

Power Backplane

https://support.hpe.com/hpesc/public/videoDisplay?videoId=vpsg00002975en_us&noframe

Power backplane 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

1. Remove the four T-15 Torx screws that secure the power supply cage to the rear of the server chassis.
2. Grasp inside the power supply cage and slide it out of the rear of the server chassis.
3. Loosen the two captive T-15 Torx thumbscrews that secure the power backplane to the top of the power supply cage.
4. Slide the power backplane out from under the power supply cage guide hooks and lift off of the top of the power supply cage.

Power backplane replacement

1. Align and lower the power backplane onto the six hooked guide tabs in the top of the redundant power supply cage.
2. Slide the power backplane until it is fully engaged by the hooked guide tabs.
3. Tighten the two captive T-15 Torx thumbscrews to secure the power backplane to the power supply cage.
4. Slide the power supply cage back into the rear of the server chassis.
5. Replace the four T-15 Torx screws to secure the power supply cage to the rear of the server chassis.

RPS Air Baffle

https://support.hpe.com/hpesc/public/videoDisplay?videoId=vpsg00002976en_us&noframe

RPS 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, air baffle, fan cage, optical drive, cache module, expansion boards, both bracket support holders, the system board and tray, and FBWC capacitor pack.

1. Disengage the two plastic locking tabs that secure the RPS air baffle to the sides of the server chassis.
2. Lift the RPS air baffle up and out of the server chassis.

RPS air baffle replacement

1. Align and lower the RPS air baffle into bottom of the server chassis.
2. Press the two plastic locking tabs to secure the RPS air baffle to the sides of the server chassis.